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MASTER'S THESIS

**PROJECT MANAGEMENT APPROACHES IN MULTI-CULTURAL
INFRASTRUCTURE PROJECTS: A CASE STUDY OF THE SOTRA LINK**

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.....

2024

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ETHICAL CONDUCT

I acknowledge that all the information contained in this thesis has been acquired and presented in compliance with academic regulations and ethical standards. I also confirm that, in accordance with these regulations and principles, I have consistently acknowledged and attributed any external sources and findings that are not of my own creation.

Name, Surname : Zohaib Hassan

Signature : 

ABSTRACT

Purpose - The primary objective of this research was to examine the "Project Management Approaches in Multi-Cultural Infrastructure Projects: A Case Study of the Sotra Link".

Methodology/Approach - The research was conducted using a questionnaire that was issued to personnel of different positions, including both management and junior staff, working in the Sotra Link Project. The study adopted a case study inquiry technique, specifically focusing on the Sotra Link Project. The research involved conducting interviews with the project managers of the infrastructure projects under research.

Results - The research findings suggest that project success relies on several critical success factors, such as thorough planning, well-defined objectives, and skilled project teams. Collaborating in multicultural teams is often regarded as advantageous, despite the presence of hurdles and sometimes cultural misinterpretations. The Norwegian market has unique problems relating to construction. Efficient cooperation and resolution of conflicts are essential, as cultural disparities can both facilitate and complicate teamwork. The ability of individuals and organizations to cope and flourish in a multicultural setting is clearly apparent. In general, the collaboration of individuals from different cultures has a favorable influence on the advancement of a project, and the knowledge gained from this experience will be advantageous for future initiatives.

Research Delimitation

The study's only emphasis was the Norwegian Sotra Link project. The findings of this research only apply to industrialized countries. Moreover, because The Sotra Link is a specific example of a multicultural infrastructure project, probably, the findings won't hold for other projects, regardless of size.

Theoretical and Practical Implications

The study yielded important insights into successful project management strategies for multicultural building projects in Norway, with implications for theory and practice. Experts will be able to gain an understanding of the critical success elements that propel mega-construction projects in developing countries to fulfillment. Additionally, employing effective project management techniques, the thesis will let students compare and contrast previous multicultural initiatives in developed countries. Furthermore, creating new sets of Critical Success Factors has improved the theoretical aspects of the research.

DEDICATION

In the name of Almighty Allah, my creator, and master, to my teacher and messenger, Prophet Muhammad, peace be upon him, to the one who never stopped praying for me, to the greatest human being alive, my mother, to my wonderful father, to my thesis supervisor Tegg Westbrook, to everyone who wonders if I'm writing about them. And to myself for believing in me, I dedicate this humble work.

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Moreover, I extend my heartfelt appreciation to the administrative staff at the University for their assistance and efficiency in handling all aspects of my research. Last but not least, I wish to thank my family for their unwavering encouragement, patience, and understanding throughout this process. Their support has been my foundation and strength. This thesis would not have been possible without the collective efforts and support of all these individuals, for which I am profoundly grateful.

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Chapter 1

Introduction

1. Background of the study

Mega construction projects (MCPs), such as the London Crossrail Project in London and the construction of Al Maktoum Airport in Dubai and Beijing Airport in China, would fail if inadequate project management techniques and methodologies were used (Makhdumi & Taha El Baba, 2017). There is global evidence of failures, with 90% of projects experiencing cost and schedule overruns (Flyvbjerg et al., 2018). Furthermore, the failure of MCPs is especially pronounced in underdeveloped nations. Megaproject development is more risky than regular projects due to its lengthy planning approach and intricate interfaces (Flyvbjerg et al., 2018).

Megaproject development necessitates advanced technical and design expertise, a skilled workforce, and substantial financial inputs (Merrow, 2011). Underdeveloped countries face challenges in achieving their economic, social, and environmental goals due to a lack of required skills and competencies (Malik, 2018), insufficient finance (Bennell, 1999), and ineffective project management (Toor & Ogunlana, 2008). The challenges associated with managing MCP (Multi-Country Programmes) will have a substantial effect on the overall value and success of projects in underdeveloped nations. Nevertheless, the number and worth of MCPs are steadily rising. (Forliano et al., 2021).

According to the World Bank (2015), the yearly expenditure on global infrastructure will reach around US\$ 3.4 trillion from 2013 to 2030 (Ruiz Nunez & Wei, 2015). Moreover, according to The Economist (2008), it was projected that emerging economies will allocate \$2.2 trillion on infrastructure improvements between 2009 and 2018. Hence, in order to guarantee the prosperity of MCPs, which is crucial for the progress of the recipient nations, it is essential to possess a comprehensive comprehension of the pivotal elements that lead to project accomplishment.

Nevertheless, there exists a divergence of opinion and uncertainty regarding the interpretation of project success. Success cannot universally apply to all projects and may be evaluated based on several objectives (Shenhar et al., 2001). The Project success objectives includes:

- The project aims to achieve specific goals regarding its scope, money, and time, commonly called the iron triangle.
- Owner's expectations for the business's aims
- Social and environmental goals (expectations of the local community)

Achieving project objectives is considered a measure of success in project management. However, achieving the company's and many stakeholders' social and environmental objectives measures project success (Shenhar et al., 2001). Realistically, megaprojects often do not meet project

management requirements known as the 'iron triangle,' which involves completing the project within time, money, and scope limits. This is the case with most megaprojects. However, there are a few outliers, such as the Empire State Building. (Morrow, 2011) argues that while megaprojects may be deemed successful in technology, they often fail to achieve financial success.

Is the Sydney Opera House considered a triumph or a disaster?

The Sydney Opera House (SOH) is one of the most well-known structures in Australia and a shining example of late modern design (Figure 1). The inception of this project dates back to 1956, when the NSW Government hosted an open international design competition. The competition was based on generic needs; there were no specific design limitations or budgetary constraints. The arrangement that won Australia now has a stunning and captivating urban sculpture with delicate tiles that light up warm at night and dazzle all day thanks to Jørn Utzon's creation. From the beginning, there was a strong relationship between design and construction, as well as a very creative and cooperative atmosphere (Sydney Opera House, 2015). In terms of the project, the team working on it was unable to complete its objectives within the allocated time.

Despite exceeding the budget, the opera house provided significant value to the city and benefitted the community from a business, social, and environmental perspective (Reichold & Graf, 2004).

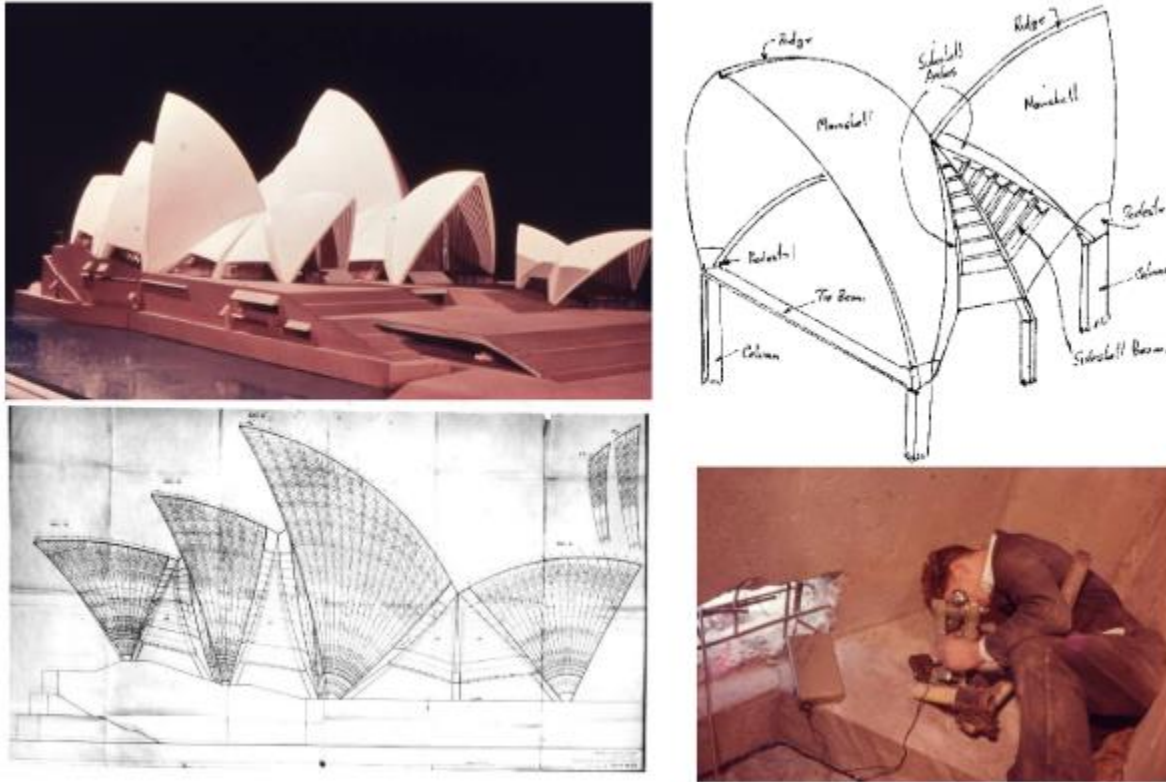


Figure 1 displays the original model and drawings of the Sydney Opera House, which provide detailed information about its elements. Lower right corner: The stations inside the arch were utilized to adjust the side shell arches by compensating for mistakes caused by the compression of the formwork. The instrument is securely fastened to the shear pin that connects the segment to the concrete below.

1.1. Critical success Factors (CSFs)

Scholars have consistently worked to identify Critical Success Factors (CSFs) to enhance the performance of megaprojects, given their economic, political, and social importance in communities. This has been documented by various researchers, such as (Lewis & Jens, 1987), (Wang et al., 2023), (Mashali et al., 2023), (Bastani, 1988), (Fortune & White, 2006), (Tabish & Jha, 2011), and (Ofori, 2013). The identified critical success factors (CSF) generally apply to all projects and circumstances and are easily recognizable by skilled project managers (Rolstadås et al., 2014). Developing nations like Vietnam have acknowledged the crucial role of project management in successfully executing mega-construction projects (MCPs) and overcoming their problems (Makhdumi & Taha El Baba, 2017).

Moreover, project management methodologies adapt in response to the unique difficulties presented by each project, as well as the internal and external circumstances. Therefore, it is essential to note that there is no universally accepted project management technique for addressing

context since it varies depending on the specific issues megaprojects face (Rolstadås et al., 2014). This thesis examines the project management practices employed by successful MCPs in underdeveloped countries, specifically focusing on utilizing Critical Success Factors. This will be further explained later in this section.

A developing country has a lower quality of living than others. Several measures have been used to classify countries as “developing” or “developed,” but there is no unanimity. Besides having smaller economies underdeveloped countries have more corrupt and ineffective governments, lower literacy rates and life expectancies, and fewer human rights safeguards. Many relevant publications and scholarly works have eliminated the “developed vs. developing” label in recent decades due to broad and growing criticism (Rebecca M. Kulik, 2024).

1.2. Mega Construction Projects (MCPs)

The thesis primarily examines the success of MCPs in developing nations by evaluating their performance against project, corporate, social, and environmental objectives. Consequently, I choose MCP case studies according to the abovementioned success criteria. Local communities depend on MCPs to meet their social and environmental needs and requirements. Therefore, it is essential to include them to comprehend the success of MCPs. Furthermore, the uncertain nature of the context in which MCPs are implemented in developing nations might be influenced by economic crises and political instability, leading to potential cost overruns that may go unnoticed by the project management team. While not all project objectives were met, the customer may still be content with the results. Hence, achieving business objectives by an MCP should be considered a criterion for success.

Brockmann and Girmscheid (2007) assert that MCPs, or Major Construction Projects, represent a novel field of study within the construction and megaprojects literature. In addition, other study topics in megaproject management have not been well investigated. One such area is megaprojects' obstacles when implemented in underdeveloped nations (Hu et al., 2015). Developing nations encounter many issues when managing multiple chronic problems (MCP). There is a lack of empirical research on the project management practices used in successful MCPs in underdeveloped countries, resulting in little information on the most effective ways in that specific setting.

Underdeveloped nations face a deficiency in project management expertise (Kerzner, 2013), as indicated by (Sambasivan & Soon, 2007), who observe the adoption of unsuitable project management methods. Implementing efficient project management strategies can enhance performance of MCPs' planning and execution. Implementing contemporary and efficient project management methods from developed nations encounters various obstacles (Makhdumi & Taha El Baba, 2017).

However, it may be easier to adopt project management practices from successfully conducted MCPs in underdeveloped nations with similar circumstances. Research works on the implementation of Effective Project Management Approaches (EPMAs) in Multi-Country Programs (MCPs) in underdeveloped nations, like this thesis, are scarce due to a lack of previous research on approaches used in MCPs in developed countries. These studies have a more significant potential to enhance existing knowledge. In conclusion, understanding efficient project management methods by identifying critical success factors (CSFs) will enhance the caliber of project management and, in our opinion, lead to project success.

1.3. Project Management in Norwegian Infrastructure Project

The construction industry plays an important role in an industrialized nation. Construction has a significant impact on the daily lives of individuals, both in terms of employment opportunities and the infrastructure that surrounds us, such as residential buildings and road networks. Therefore, it is necessary for the industry to function at a high level of efficiency (Jonsson, 1996). In Norway, our proficiency in project management within the construction business is excellent, but there is no indication of any significant problems within the sector. Nevertheless, the potential benefits of adopting "Best practice" are substantial. A study conducted on 122 apartment block buildings in Norway reveals that the efficiency of the "Best practice" projects is more than double that of the least effective ones. Some initiatives consume double the resources compared to others, while yielding identical results (Ingvaldsen and Edvardsen, 2007) (m). Research indicates that there is no improvement in infrastructure (Flyvbjerg et al., 2003). The Office of the Auditor General in Norway has condemned Statens Vegvesen for substantial increases in costs and time on major infrastructure projects (General, 2013).

An issue with conventional project management is its deficiency in fostering growth and progress. According to O.H. Sandvik, An individual responsible for overseeing Lean/quality practices at Nye Veier, although certain new tools and technology have arisen, the fundamental nature of the field has remained unchanged for the past 60-70 years (Sandvik, 23.05.2017, interview). Consequently, alternative approaches and techniques in project management are being adopted and formulated based on practices in other sectors. Lean construction (LC) is a modified version of the Toyota Production System, often known as Lean Production. The reference cited is Howell (1999).

1.4. Sotra Link Project

This contract is the biggest in Norwegian history for road infrastructure and is also one of the largest contracts granted out in Europe in 2021. The Norwegian Public Roads Authority (NPRA) has chosen Sotra Link as the preferred bidder for the PPP Sotra Connection project. Sotra Link will be responsible for operating and maintaining the highway for a period of 25 years starting

from its opening in 2027. In September 2021, the Webuild business, through a special purpose organization, secured a contract to construct the Project, valued at more than €1 billion (equivalent to about 10 billion Norwegian crowns).

The contract's scope involves the construction of the "RV.555 Sotra Connection PPP Project," a road and bridge system in the Vestland county of western Norway, utilizing the Private-Public Partnership (PPP) model. The project encompasses the planning, building, funding, and administration under a concession agreement of a road system consisting of 9 kilometers of expressway and a suspension bridge between Øygarden and Bergen. The bridge will have a width of 30 meters, a length of 900 meters, and will be supported by towers that are 114 meters tall. The project encompasses a combined length of 12.5 kilometers of tunnels, including secondary tunnels. Additionally, it features 19 underpasses for both vehicles and pedestrians, 23 tunnel entrances, 22 bridges and viaducts, and 14 kilometers of walkways designated for pedestrians and bicycles.

The Norwegian Public Roads Administration (NPR) has commissioned the Sotra Link consortium, which is controlled by Webuild (35%), FCC Construcción (Spain, with a 35% interest and leading the project), and SK E&C (Korea, with a 30% share), to undertake the design and construction operations. The project concession owner is a special purpose vehicle, which is also responsible for the operation and maintenance activities. It is held by Webuild, holding a 10% interest, while Macquarie and SK E&C hold 70% and 20% stakes, respectively.

1.5. Multicultural Construction Project

Increasing efficiency in building projects requires effective teamwork. The worldwide expansion of the construction industry has led to practitioners operating outside their customary regional borders. But it's also critical to consider how cultural variations within project management teams affect the output of the project.

Each contractor intentionally adds their own culture to a project, while certain cultural aspects may need to be explained to others. However, a sizable portion of people is not fully conscious of the ways in which deep or even subconscious values influence their behavior and thought processes. These values include perspectives on power dynamics, methods for finishing tasks, performance-based thinking, communication styles, and preferred methods of education.

In project environments, cultural norms have the ability to affect how construction project teams communicate and behave. Human interaction does not occur in a vacuum or in isolation, according to studies by Brett et al. (2006), Hall (1966), Hofstede (1972, 1980), and Trompenaars (1993), human contact does not happen in a vacuum or isolation. Rather, it takes place in a social context that is shaped by a complex web of formal and informal norms. Organizations with strong cultures, according to Brenton and Driskill (2011), include surface-level cultural components that are closely related to employee attitudes and biases. The mutual impact between these legal frameworks and culture is often regarded as one of its distinguishing features. Cultures are born and grow out of the common urge among social groups to find answers to certain problems (Brett et al., 2006; Connaughton and Marissa Shuffler, 2007; Hofstede, 1991). For every organization

involved in a construction project, regardless of size, to remain a social institution and maintain itself, it is essential to find solutions to these challenges.

1.6. Research Questions

1. What are the key project management approaches employed in successful mega construction projects in Norway?
2. How do regulatory standards and industry practices influence project management strategies in the Norwegian context?
3. What role do collaboration, stakeholder engagement, and risk management play in ensuring the success of mega construction projects in Norway?
4. How do project management approaches impact team collaboration and success in the multicultural Sotra Link project?

1.7. Research Objectives

The study's background informs the main research question. Which project management techniques are used in developed countries with CSFs for effective MCPs? Because of the many challenges associated with their creation and management, this thesis looks at the project management approaches used in MCPs that are effective in industrialized countries that utilize CSFs. The literature on project management techniques (PMAs) and key success factors (CSFs) serves as the study's foundation. It also includes a modified conceptual model based on Gudiene et al. (2013)'s research on CSFs in construction projects. Gudiene et al. (2013)'s model was chosen because it takes into account key success factors (CSFs) that are connected to those that have been discussed in the literature. Furthermore, the goal of the model and this investigation are complementary.

The specific objectives of this research are:

- To identify the project management practices that have been successful in MCPs in developed nations.
- To discover critical success factors (CSFs) unique to microcredit programs (MCPs) in developed countries beyond those mentioned in existing research.

In order to accomplish the goals, I must study Sotra Link MCP that have been effectively

implemented in developed countries. The thesis aims to support project management in the future or ongoing development of MCPs in comparable situations. It also aims to benefit academics and researchers investigating themes connected to PMAs and CSFs in MCPs in developing nations. Furthermore, it would offer a valuable understanding of project management strategies in developing nations, which may be expanded upon in future studies to shed light on efficient managerial ways for various MCPs in underdeveloped nations.

Chapter 2

2. Literature Review

2.1. An Overview of Projects, Megaprojects, and Project Management

2.1.1 Projects

A project is a distinct and transitory undertaking with defined goals and objectives that must be accomplished within a predetermined timeframe, budget, and scope. Successful completion of a project involves the involvement of several stakeholders and organizations. The project exists only for the length of its execution. According to (Turner, 2009), a project is a targeted allocation of resources aimed at achieving certain objectives through the Creation of products or service that benefits the community or produces advantages.

As stated in the (Markus & Tanis, 2000), projects can encompass various activities such as creating a new product, service, or outcome, Engaging in activities such as altering an organization's framework, procedures, workforce, or approach, creating or obtaining a new or modified information system, carrying out research with well-documented outcomes, making buildings, manufacturing plants, or infrastructure, or executing, enhancing, or refining current business methods and practices..

2.1.2 Project Management

Project management is the application to knowledge, skills, instruments, and processes to execute the tasks at hand and meet the objectives of the project, as defined by practitioners. (Markus & Tanis, 2000). Project management is accomplished by effectively implementing and integrating project management processes, categorized as initiating, planning, executing, monitoring and controlling, and closing (Markus & Tanis, 2000).

As stated in the (Markus & Tanis, 2000), managing a project involves several critical tasks, including but This includes tasks such as identifying project requirements, tackled client demands and expectations, creating and sustaining effective communication among stakeholders, managing stakeholders to meet the project's goals and deliver the results of the project, and achieving battling restrictions on the project, such as :

1. Scope
2. Quality.
3. Hazards.
4. Schedule

5. Financial allocation
6. Assets.

The limitations imposed by the circumstances and characteristics of the project must be the project management team's primary concern. Since they are at the centre of the project management process, project managers have a significant and influencing role in projects (Ofori, 2013). Specialised abilities in project management, such as resource planning, organisation, management, and control, are required of the project manager. In order to guarantee the project's success and meet its goals within the constraints of time, money, and scope, they should also be able to inspire all parties involved (Atkinson, 1999). Furthermore, according to (Kerzner, 2002), project management should integrate the abilities and competencies of project teams in order to successfully complete the project's objectives.

2.2 Factors Influencing the Development of Megaprojects

Megaprojects have a crucial role in stimulating economic growth.(Kumaraswamy & Dissanayaka, 1998) states a growing trend of MCPs being adopted by national and municipal governments. The use of MCPs is growing in popularity. Because of their significant expense and impact on the neighborhood and neighboring areas, they can attract politicians and public interest. Governments see MCPs as a tool to help them accomplish their goals for sustainable development. (Othman & Ahmed, 2013). The last several decades have seen a sharp rise in urbanization worldwide, which has increased investment in MCPs. The World Bank (2010) estimates that for the previous 20 years, population growth has averaged 2.2%. The boom raised the need for housing developments, infrastructure, healthcare, education, and culture. These included wind farms, hospitals, airports, residential complexes, and expansive architectural concepts (Flyvbjerg, 2014).

Their implementation offers enormous benefits and services to several areas in the country, including contractors, consultants, bankers, attorneys, and developers. (Flyvbjerg, 2014). According to (Flyvbjerg, 2014) , political, technical, artistic, and economic considerations are important drivers of megaproject expansion. Megaprojects get a lot of media interest due to their high expenses and extensive effects on the environment, economy, and people. Politicians are especially drawn to this attention as it increases their likelihood of winning reelection (Flyvbjerg, 2014).

Furthermore, megaprojects are scrutinized by the public and governmental authorities due to their substantial impact on communities, the environment, and finances, (Flyvbjerg, 2017b) By developing buildings like the longest bridge or the tallest skyscraper, megaprojects provide engineers and technologists the possibility to push the boundaries of technology (Flyvbjerg, 2017a). As the Sydney Opera House demonstrates, megaprojects enable architects and designers to push the boundaries of creativity and produce visually arresting icons that fascinate both the audience and themselves (Flyvbjerg, 2014).

Using factor analysis, Tabish and Jha conducted research in India and determined four critical success variables for public building projects. In this context, the requirements include knowledge of and adherence to laws and regulations, careful pre-project planning and accurate scope identification, effective participant participation, and external control and supervision. (Flyvbjerg, 2014; Tabish & Jha, 2011) .

In addition, a second survey was conducted to look at the elements that contribute to the success of World Bank programs, with a focus on examining the connection between project success and important success criteria. The five components—monitoring, coordination, design, training, and institutional environment—have a positive link with project performance, according to the exploratory factor analysis (Ika et al., 2012).

Project management and control are essential elements that, from an operational perspective, define a project's success. But we argue that it's much more important to focus on the first stages (Müller & Jugdev, 2012).

The NETLIPSE study found several important elements that go into making a project successful. A clear and resolute vision from political leaders, the early establishment of an autonomous and trustworthy project delivery organization, the presence of a dynamic and highly skilled project director, a strong financial foundation built on a realistic business plan, the implementation of suitable procedures for obtaining legal consents, including contingency plans, an all-encompassing and methodical approach to managing stakeholders with open communication, and a rigorous change management process are some of these factors (Hertogh et al., 2008).

Twelve elements have been identified by Pinto and Kharbanda as contributing to project failure. One of these issues is failing to take into account the particular environment and features of the project, such as stakeholder behavior. Rushing to release a new technology into the market without careful preparation or consideration of possible issues is another cause. When issues do occur, there's a propensity to ignore other crucial aspects in favor of concentrating only on the most obvious problem. Furthermore, since new ideas are inherently unpredictable, they are often dismissed from initiatives, which might impede innovation. Other contributing reasons include not recognizing when a project is failing and not doing feasibility assessments prior to starting a project. Lastly, the chance to learn from errors and identify the primary causes of the failure is lost when post-failure evaluations aren't carried out. Choose a project manager who lacks charisma and experience; prioritizes internal company procedures and bureaucracy above project performance; ignores project trade-offs; and lets political influence sway the decision-making process (Pinto & Kharbanda, 1996).

The NETLIPSE study has shown that the following factors have been recognized as significant barriers to a successful delivery: The project is hampered by an unrealistic budget and timeline that doesn't consider unforeseen circumstances. Delays are sometimes caused by problems with

the decision-making procedures of the project delivery organization and the client/sponsor. Instability is also caused by a high rate of critical staff turnover. Stakeholder communication is often mishandled and postponed. There's a propensity to experiment with new technology and poor contract management. No matter the project's condition or the political, legal, or cultural features of the nation, the identified deciding variables held for all 15 case studies. According to (Hertogh et al., 2008) the NETLIPSE team has concluded that these attributes are prevalent and very important for any kind of Large Infrastructure Project (LIP) in Europe.

Optimism, the propensity of managers to create distorted estimates based more on irrational optimism than on a sound analysis of costs and benefits is known as bias. Because costs are underestimated and benefits are overestimated, the decision-making process in this instance is unbalanced. Initiatives that are difficult to accomplish without adding to expenses or failing to provide the anticipated advantages are often supported by project managers (Flyvbjerg, 2013; Flyvbjerg et al., 2009). This behaviour is a result of the "inside view" approach to project management, which entails a strong propensity to consider project challenges as unique and to concentrate only on the particular situation when addressing the problem.

According to Flyvbjerg, strategic deception is the deliberate and calculated practice of planners, politicians, and project managers to intentionally inflate the benefits and minimize the expenses of their endeavors. This is done in an attempt to raise the likelihood that their ideas will be approved and funded. On the basis of this idea, project managers voluntarily give preference to helping with positive circumstances and avoid discussing unfavorable ones (Flyvbjerg, 2013). A thorough framework for success factors and failure factors was created using the previously provided information. As was already noted, each megaproject is different, which makes it difficult to compile a thorough list of success and failure factors that apply to all megaprojects. Rather, it is critical to understand the larger picture of the research that has been done so far and to increase understanding of the complexity of managing megaprojects.

2.3 Evaluation of Microchannel Plates (MCPs)

When considering the four critical factors for the development of megaprojects, as stated by (Flyvbjerg, 2014), essential features of megaprojects are being disregarded. Insufficient attention to the four main factors has led to inadequate performance records in terms of cost and benefits.

(Flyvbjerg, 2013) proposed the concept known as 'the iron law of Megaprojects.' Consistently exceeding the allocated money and timeline, megaprojects are repeatedly criticized for failing to meet the parameters of the 'iron triangle'—time, budget, and scope. Flyvbjerg, Holm, and Buhl (2005) found that 90% of projects had difficulties meeting their budget and schedule.

The subsequent attributes are essential in creating megaprojects, although they are disregarded and overshadowed by the four primary factors driving them.

1. Building megaprojects is dangerous because it involves a lengthy planning process and intricate interfaces (Flyvbjerg, 2006).
2. Demonstrates robust internal project management and leadership skills (Bourne & Walker, 2004).
3. According to (Flyvbjerg, 2014), the project's scope and aspirations will likely vary over time.
4. Proper problem analysis is necessary to determine the need of the proposed project (Hmelo-Silver, 2004).
5. Decision-making, planning, and management are complex processes that include several players, including public and commercial sector stakeholders, who may have opposing interests (Riege & Lindsay, 2006).
6. Underestimating expenses and overestimating advantages will lead to exceeding the projected expenditures and time and falling short of expected benefits (Flyvbjerg, 2014).

Many promoters and planners of large-scale projects commonly deliberately underestimate the cost and time required. They believe that this approach, known as the Hiding Hand or the Creative Error, is necessary to launch the development of these projects. However, this issue is not limited to impoverished countries; affluent countries have also had instances of this unethical behavior. This approach can result in several issues, with the two primary concerns being the potential for generating a cost-effective and financially viable Minimum Control Point (MCP) or mistakenly choosing one MCP over another that could yield greater returns owing to inaccurate calculations (Flyvbjerg, 2014). (Denscombe, 2017) posits that if individuals were aware of the complete expenses associated with large-scale endeavors beforehand, these undertakings would never come to fruition. To address these issues, he suggests concealing the actual costs, sometimes called 'the concept of the Hiding Hand.' In addition, (Atkinson, 1999) contends that a phenomenon he referred to as a 'creative mistake,' which involves inaccurately estimating the actual costs and benefits of projects in their first phases, played a crucial role in advancing several significant undertakings. This will result in executing projects that appear better on paper and are best represented with overstated benefits and understated expenses rather than the most appropriate initiatives. During implementation, these initiatives will face several challenges and issues concerning delays, cost overruns, and benefit shortages (Flyvbjerg, 2014).

2.4 MCPs and Project Management in Developing Countries

2.4.1 MCPs in Developing Countries

The classification of developed and developing nations is based on several factors, including the nation's economic growth, healthcare infrastructure, education, training, political stability, and culture (Kozma, 2005). Additionally, World Bank (2010), Categorized the world's nations into four economic groupings based on GDP per capita and income:

Gross National Income per capita	
Low income countries GNI ≤ \$US 1,025 per capita	Developing Countries
Lower middle income countries GNI = \$US 1,026 - \$US 4,035 per capita	
Upper middle income countries GNI = \$US 4,036 - \$US 12,475 per capita	
High-income countries GNI = \$US 12,476 and above per capita	Developed Countries

Table 1. lists economic categories according to gross national product per capita and income (World Bank, 2010)

In emerging nations, where primary construction operations account for 80% of total capital assets, or 10% of GDP (gross domestic product), and more than 50% of wealth invested in capital, the function of MCPs has become increasingly important. According to several research, the construction sector contributes around 10% of all jobs globally. According to The Economist's 2008 prediction, emerging nations will invest \$2.2 trillion in infrastructure projects between 2009 and 2018 (Mella & Savage, 2018).

Even though MCPs are crucial to helping developing nations meet their social and economic sustainable development goals, performance is still subpar regarding large-scale development initiatives like housing, healthcare, education, and cultural initiatives where communities meet their needs (Othman & Ahmed, 2013). MCPs need a substantial investment, highly skilled personnel, and a set of administrative and technical abilities (Othman & Ahmed, 2013). However,

the lack of funding, necessary skills, and other resources makes it difficult for these projects to be developed and keeps developing nations from reaching new heights of growth (Othman & Ahmed, 2013).85.4% of people on the planet live in developing nations (Human Development Report, 2011), and Flyvbjerg, Holm, and Buhl, 2004 noted that delays in time and money cause nine out of ten projects globally to fail. Local communities suffer significantly due to unfavorable consequences, particularly in developing nations, and initiatives related to education, infrastructure, housing, healthcare, and culture must be developed to meet their requirements (Golubchikov & Badyina, 2012).

Moreover, governments and public sector agencies like the World Bank (WB) and Official Development Aid (ODA) frequently sponsor MCPs (Makhdumi & Taha El Baba, 2017). Therefore, cost overruns have a more serious impact and may lead to the project's discontinuation. "Lack of financial resources, cost control, and venture capital" are problems that governments confront (Makhdumi & Taha El Baba, 2017), and badly managed megaprojects make funders lose faith in the government. (Makhdumi & Taha El Baba, 2017).

To minimize time and cost overruns and prevent project termination, it is critical to understand projects and project management success criteria. The accomplishment of corporate objectives (the owner's expectations) and social and environmental goals (the community's expectations) has been proposed to measure a project's success. The commercial, social, and ecological objectives linked to ensuring customer and community satisfaction will be the main topics of this essay. The development and survival of MCPs depend on achieving these objectives. The paper will also cover project organization and management, focusing on budget, schedule, and cost. These elements are essential to project management success.

The etymology of corruption is not supported by the literature. According to (Owusu et al., 2019) , for instance, the Latin adjective "corrupt," which means "ruined, shattered, or spoilt," is where the word "corruption" first appeared. It also comes from the Latin word "corruption," which denotes immorality, putridity, or moral decay. However, moral decay—which is present in the contemporary sector—is a feature that unites the two points of view (Andvig et al., 2001; Evensky, 2005; Gregory, 1999). (Granovetter, 2007) According to (Granovetter, 2007), corruption may be characterized in a variety of ways depending on the circumstance; nevertheless, in the particular context of the construction industry, corruption is understood to be the abuse of authority.

Economic development and expansion are significantly influenced by construction activities (Arthur-Aidoo et al., 2018). Engineering and construction services have a big economic influence.

The expanding global economy is giving millions of people new career opportunities. According to (Musarat et al., 2021), the construction sector has 7,505,000 employees as of July 2019 and is

projected to increase at a pace of 12% to create 864,700 new employees by 2026. Additionally, it increases profits from international commerce in technical services and building materials (Baldwin, 2013). Because of its size and influence on other sectors, the construction industry is important (Ortiz et al., 2009; Raftery et al., 1998). The budget of every construction project is crucial. Long-term projects often need budget adjustments. This problem is exacerbated by the yearly increase in labor, construction material, and equipment expenses.

The costs of materials, labor, and equipment are all greatly impacted by inflation, which has an ongoing effect on project costs. The volatility of economic growth is caused by variations in building costs and material prices. The labor market, the consumer price index, and economic growth are all impacted by inflation (Ebrahim et al., 2014; Musarat et al., 2021). Inflation is influenced by labor and material costs, but contractor and supplier margins have a bigger influence. Inflation in the construction industry varies by market and sector. Each material has a different one (Okun, 2011). Due to the large expenditures required, the building sector is essential for nations looking to grow economically. The building sector is suffering as a result of rising prices. The cost of supplies, equipment, and other project inputs increases due to inflation. When project participants—mainly because of inflation—need to postpone the project to prevent cost overruns (Alinaitwe et al., 2013). Building materials raise construction prices by 35–60% (Bansal et al., 2014). Through time lag behaviour, inflation affects the cost of labor, construction supplies, and hiring rates for machines (Okun, 2011; Okun et al., 1975; Rotemberg & Woodford, 1999).

2.4.2 MCPs' Difficulties in Developing Nations

(Makhdumi & Taha El Baba, 2017) and (Kymlicka & Banting, 2006) state that MCPs in developing nations have been dealing with challenging situations. Numerous initiatives ultimately end or are suspended because they are unsustainable (Circo, 2007). For instance, Nigeria needs twice as much money to finish projects that have cost the country an estimated US\$12.65 billion due to abandonment (BALOGUN, 2019). In these nations, unethical behavior like corruption has become a threat that complicates project management (Circo, 2007). Similarly, (Harris, 2003) reports that \$40 billion is invested annually in developing nations, yet most of these initiatives have not succeeded. Between 1979 and 1983, the World Bank funded 54% of failing projects in Sub-Saharan Africa alone (Nellis, 1986).

The features and intricacies of building projects and industry in emerging nations differ significantly from those in industrialized nations (Dahlman et al., 1987). (Tosun, 2000) and (Dada, 2006) States that the characteristics and circumstances of projects in underdeveloped nations are distinct from those in prosperous nations, where project management emerged. While there may exist a generally accepted standard, each project possesses its own distinct dynamics that are initiated and executed at a local level, with the necessary adjustments made to suit the specific conditions. A study conducted by Aaltonen and Kujala in 2010 found that

the project's location, aim, sponsor, stakeholders, and timescale had a major impact on the project management practices that should be employed.

Most MCPs operate in highly complex and sophisticated environments; however, projects in developing nations are more susceptible to instability, unpredictability, and unethical behavior because of several obstacles. (Othman & Ahmed, 2013) divided these difficulties into four groups: issues related to engineering, challenges related to human development, challenges about management and politics, and challenges about sustainability. From an engineering perspective, (Makhdumi & Taha El Baba, 2017) contends that poor decision-making and a shortage of trained scientists and technicians impede the implementation of MCPs in developing nations. Insufficient technical and excellent schools and training have resulted in a shortage of skilled workers for important human development roles.

According to (Makhdumi & Taha El Baba, 2017), MCPs in developing nations are plagued by corrupt and bureaucratic activities on a management and political level. Primus (2010) asserts that the implementation of MCPs lasts longer than the tenure of administrations and that changes in coalition parties, in particular, may cause goals to be obstructed or their scope altered. According to (Makhdumi & Taha El Baba, 2017), MCPs in developing nations struggle with a "lack of financial resources, cost control, and venture capital" on a sustainability level. The management and implementation of these MCPs encounter various issues and hazards due to these obstacles. Therefore, tight project management procedures, including risk, contract, scope, communication, and procurement, are more critical in poor nations than in developed countries (Banihashemi et al., 2017).

As a result, project managers operating in developing nations have more significant challenges and complexity than their counterparts in wealthy nations (Blowfield & Frynas, 2005; Marshall & Farahbakhsh, 2013). One of the main challenges in managing MCPs in developing nations is external complexity, which results from contextual uncertainty (Makhdumi & Taha El Baba, 2017). The markets with the most significant growth rate in MCPs, China, India, and Russia, are more unclear regarding social and cultural concerns. Megaproject management becomes challenging due to this level of unpredictability, which also affects social and cultural complexity (Nachbagauer & Schirl-Boeck, 2019) and temporal complexity (Pitsis et al., 2018). Project planning, monitoring, risk analysis, and stakeholder management are all directly impacted by complexity and uncertainty. Relevant subjects affected by this complexity include risk analysis and management, project planning and procurement, organization and stakeholder management, project monitoring and control, and more (Hu et al., 2015; Ward & Chapman, 2008). Government regulations, a Insufficient foreign currency reserves, unfavorable contract conditions, political motivations, inflationary pressures, societal factors, and a lack of interest.

(Haggard & Kaufman, 1995)t from the community and end users, corruption, and the occurrence of disasters like war and draughts are generally included in these complexities (Bigsten & Kayizzi-Mugerwa, 2000), (Chowdhury, 2002), (Haggard & Kaufman, 1995).

2.4.3 Managing Projects in Developing Nations

In MCPs, project management is a relatively recent idea. It helps people to make the best use of their resources to accomplish goals within the limitations of their time and money. The use of project management concepts, which include organising, managing, regulating, and planning the work, may have an effect on a project's performance. The developed world is still in its early stages of development (Kerzner, 2002). Furthermore, it is important to implement strategic project management while considering each of these contextually relevant factors. This is due to the many complex issues that emerging nations face, including sociocultural variables, political goals, and budgetary constraints (Ofori, 2013).

In developing nations, project management is being used more and more to accomplish commercial objectives as well as goals related to economic growth. Project management is a critical component of MCP success in Ghana, since it raises the rate of achievement (Ofori, 2013). Project management, according to Too & Weaver (2014), is the methodical process of successfully planning, organising, and assigning resources to meet the goals of the project. Project management, however, is struggling to meet the goals it set out to accomplish and faces a wide range of obstacles, including non-technical as well as technological ones. (Ofori (2013).

2.5 Project Management Approaches - Factors for Achieving Success

According to (Flyvbjerg et al., 2003), the success of mega projects is influenced by the impact of complexity, unpredictability, and dangers on managerial demands. (Rolstadås et al., 2014) states that successful megaproject management is distinguished by including strategic project management and competent leadership within the project organization, accompanied by a clear and specific statement of project objectives.

The utility of project management strategies and approaches is their ability to implement strategy and management philosophy by effectively planning, coordinating, and controlling resources. Nevertheless, in less developed nations, MCPs suffer from ineffective project management procedures (Di Maddaloni & Sabini, 2022). This raises doubts about the effectiveness of implementing MCPs at every stage of their evolution, from beginning to end (Iacovidou et al., 2019).

2.5.1 Definition of Project Success and Project Success Criteria

Given the degree of ambiguity and disagreement involved, defining project success and evaluating

its performance may be difficult. Researchers perceive project success differently in their researches, according to (Shenhar et al., 2001)

According to (Williams et al., 2015), a project's success extends beyond adhering to budget, time, and scope constraints. It also includes stakeholder satisfaction, which includes client satisfaction. According to (Kim & Moon, 2009) the degree to which the client is satisfied with the outcome has a big impact on whether the project is seen as successful or unsuccessful. The Boston Big Dig is regarded as one of the most expensive infrastructure projects in the United States, according to (Greiman, 2013), It had major 190% cost overruns, completion delays, design errors, and corruption. Nevertheless, it has been effective in achieving the environmental and social objectives of improving traffic flow and has had a favourable effect on the increase in property value (Bibri et al., 2020). (Atkinson, 1999) and (Greiman, 2013) identifies three distinct sets of objectives for measuring success:

- The project owner's expectations are reflected in the corporate objectives
- The community's expectations are reflected in the social and environmental objectives.
- The project seeks to meet particular scope, schedule, and cost targets.

The authors distinguished between the three main objectives. They distinguished between project success and project management success, with project success being the achievement of the corporate, social, and environmental goals. The writers differentiated between the three primary goals. They defined project management success as fulfilling the project objectives, while project success was accomplishing the business, social, and environmental objectives.

However, according to Mir and Pinnington (2014), they argue that there should be no distinction made between the success of a project and the success of its management. Instead, the achievement of project management should be regarded as a factor that contributes to the success of a project.

Therefore, it is crucial to determine the criteria for measuring success by taking into account all the parties involved, such as the project management team, project managers, clients, contractors, and end-users. These stakeholders possess unique expectations regarding the outcome of the MCPS and assess project success in different manners.

2.5.2 Key Performance Indicator

(Boynton & Zmud, 1984) assert Critical Success Factors (CSFs) are distinct and crucial domains that, if proficiently managed, would provide a competitive advantage for enterprises and project teams. Furthermore, from a project management standpoint, Critical Success Factors (CSFs) are defined as variables that, when properly managed, may affect the project's success (Gunduz & Almuajebh, 2020) Project success criteria have already been integrated with the categories and frameworks of CSFs (Critical Success Factors). (Winter et al., 2006) developed a thorough framework that takes into account the project itself, the project team members, and outside

influences in addition to the project manager and organisation, as done by earlier frameworks. This framework is not industry-specific; rather, it is applicable to all industries in general.

(Scott-Young & Samson, 2008) developed a fascinating theoretical framework that is more industry-focused. All pertinent factors for construction projects are included in the conceptual critical success factor model, including those pertaining to the project, the project management team, the project manager, the client, the contractor, and other variables like the economic, social, technological, legal, political, and social context.(Gonzalez Aleu & Van Aken, 2016) studied critical success factors (CSFs) from 63 publications. These CSFs are the most essential elements that lead to project success. This encompasses senior management support, which involves providing necessary resources and consulting to ensure the project's success and clarity of project management objectives. This clarity is crucial in the project's initial stages and during any scope adjustments. Client engagement and consultation include actively seeking input and understanding the requirements and aspirations of stakeholders. Effective communication, collaboration, and commitment are essential for successful project planning and control. This includes having an available information system for all critical stakeholders and facilitating communication and coordination. This system improves project planning and ensures effective control. Researchers, including (Tarhini et al., 2015), (Camilleri, 2016), and (Nah & Delgado, 2006), well acknowledged that these strategies will unquestionably influence the performance of project management. (Rolstadas et al., 2014).

2.5.3 Efficient Project Management Strategies

The table below presents the most often referenced Critical Success Factors (CSFs) found in the publications reviewed by the writers of this thesis. The compiled list of Critical Success Factors (CSFs) considers all project success criteria and is claimed to enhance the effectiveness of project management methodologies.

Critical Success Factors	Lewis and Jens (1987)	Bastani (1988)	Andersen et. Al (2002)	Fortune and White (2006)	Tabish and Jha (2011)	Ofori (2013)
Project organization structure	✓	✓		✓		
Adequate Planning	✓	✓	✓	✓	✓	
Clear project objectives	✓	✓	✓	✓		✓
Communication, coordination, and commitment		✓	✓	✓	✓	✓
Resource Allocation	✓			✓		
Senior management support			✓	✓		✓
Stakeholders Involvement and Consultation			✓	✓		✓
Authority and leadership of Project Manager	✓	✓	✓	✓		✓
Competent Project Team	✓					✓

Table 2 A concise overview of literature evaluations focusing on the Critical Success Factors that are most frequently referenced (Makhdumi & Taha El Baba, 2017).

Project Organization Structure

It involves establishing a project structure that defines the project team's duties, responsibilities, authority, and communication and coordination. Ensuring the involvement of all relevant stakeholders is crucial for an effective project management system. During the first stages of MCP development, the project manager consolidates the structure to streamline communication and clarify duties. The project manager will continuously evaluate the project team and management strategy while the commitment of employees to the project is being established. After the effective implementation of the strategy and the project manager's satisfaction with the progress, he will move towards decentralized management by assigning duties to managers in different locations. This method can be employed until the project is entirely finished.

The presence of multiple stakeholders, imprecise and vague objectives, and a weak organisational structure stemming from a lack of management and technical expertise can lead to a situation in developing countries where the roles and responsibilities of the parties involved are unclear. The ability to make decisions will be concentrated within a small number of top managers. Committees

are often formed by senior managers or top executives to handle decision-making processes. But the words and deeds exchanged between these panels and the project participants may lack clarity and have limited authority and accountability, which would slow down the pace of decision-making.

Adequate Planning

The greatest strategy to overcome hurdles and decrease risks during MCP development is to plan effectively. Extensive planning is positively related with project success, according to study. Having thorough and effective project planning becomes increasingly critical when the project confronts more unknowns and higher complexity. Not to add that this strategy may be resource- and time-intensive, complete information is needed.

Since governments are frequently the customers and financiers of megaprojects (MCPs), developing nations are often the target of great political power. This may occasionally result in the requirement for huge projects to be launched rapidly, leaving little time for adequate preparation. This will generate uncertainties about the project's scope, which may ultimately lead to inaccuracies and inaccurate schedule and cost estimates.

Clear Project Objectives

Project managers must establish clear and precise project objectives to ensure efficient resource allocation and effective leadership toward a shared target. This will ultimately lead to successful project management. The primary goal of an MCP in developing nations is often not clearly defined, resulting in several stakeholders being involved in various stages of the development process without a clear understanding of their objectives. Lack of clarity in project objectives may lead to the emergence of divergent priorities, creating opportunities for pursuing personal interests.

Communication, Coordination, and Commitment

According to the PMI's Pulse of the Profession In-Depth Report, meeting the original goals and finishing projects within budget and schedule depend heavily on effective communication. In order to establish MCPs, stakeholders' collaboration and communication must be streamlined via a management information system. To fulfil their responsibilities, all project participants should have access to the information system. Additionally, precise and current daily data on schedule, budget, and resource allocation must be provided via the information system. Ineffective teamwork, communication, and determination will surely lead to a number of project management issues and raise the likelihood of project failure. According to the results of the Pulse communication research, 50% of failed attempts were attributed to poor communication as their primary cause.

Resource Allocation

Typically, MCPs' assignments are allocated set budgets and delivery timelines. However, simply establishing a budget and deadline for work is insufficient to accomplish these duties. Thorough task breakdowns, allocation of human resources, and milestones are to guarantee the timely delivery of the project while staying within the allocated funds. These techniques will lead to effective task management, where activities are systematically pursued and monitored, resulting in satisfying time and cost limits.

Senior Management Support

To guarantee the project's success, senior management support comprises supplying essential resources, including cash and highly qualified staff, as well as giving direction and decision-making authority. For MCP growth to succeed and survive, the required resources and advice must be provided. However, there are two reasons why MCPs do not have enough money in developing countries. Governments and public funders like the World Bank and the Official Development Aid (ODA) are often the main clients of MCP in its development programs. The governments of developing countries must contend with issues including scarce financial resources, trouble controlling expenses, and a dearth of venture capital (Ndou, 2004). Due to inadequate execution, public sector organizations are becoming less inclined to finance MCPs (Makhdumi & Taha El Baba, 2017).

Stakeholders Involvement and Consultation

Efficient communication and synchronization among project contributors are crucial for accomplishing success. Nevertheless, it is crucial to consider the the end-user of MCPs, particularly the local community where the project is being developed. The end-user should actively participate in the process of decision-making during the design and execution of the MCP. The community's active engagement in the decision-making process is crucial to secure the backing and acceptance for the development of the MCP. The community's satisfaction is ultimately what determines whether the initiative is successful.

In developing nations, organizations and professionals from many fields, such as architects, attorneys, financiers, engineers, consultants, and contractors, are widely present and actively engaged in the creation of MCPs. However, during the initial phases of MCPs, a problem of improper distribution and incorporation of the many stakeholders' parties arises.

Authority and Leadership of Project Manager

Unpredictable sociocultural, political, and economic factors affect MCP's growth. Nonetheless, the project manager has the authority to decide on the organization's structure and how human resources are allocated. The project manager and team members act as the primary regulatory body for the duration of the MCP development process. The overall mood and successful project management are contingent upon the project manager's guidance and leadership. Effective leadership is essential to the successful management of organizations and initiatives.

Competent Project Team

Project managers must be able to exercise power and demonstrate leadership in a way that is consistent with the abilities of the people they supervise. Ensuring project quality is the responsibility of the project team and project management. To guarantee project management's success, they had to make an effort to use the most efficient techniques.

The recruitment and development of talented workers is a major challenge for developing countries, since it is crucial to the success of initiatives. The outcomes of MCPs are being negatively impacted by a lack of excellent instruction and training. Building the FIFA 2010 World Cup stadiums in South Africa is a prime example of the disastrous effects of a shortage of highly qualified and experienced workers (Cottle & Rombaldi, 2014). Cost overruns are caused by nine reasons that were identified by (Baloyi & Bekker, 2011) The third most important reason for cost overruns and the second most important reason for delays was found to be the absence of qualified and experienced employees.

2.6 Multicultural Infrastructure Project

Multiculturalism refers to a society that is comprised of several cultural groupings, resulting in a varied range of cultures. The construction industry has a substantial impact on both underdeveloped nations such as Kenya and advanced countries like the UK. The construction industry is important not only because it makes up a large amount of the gross domestic product (GDP), but also because its products include construction materials and its influence reaches the entire economy (Egan, 2002; Mitullah & Wachira, 2003). Mitullah, W.V. and Wachira, N.I. (2003) carried out a case study in Nairobi, Kenya, titled "Informal labor in the construction sector in Kenya". Their search revealed that the construction sector's project completion performance has been criticized for its lack of reliability. Time and budget overruns are common occurrences, and a substantial amount of effort and resources are allocated to resolving deficiencies (Strategic Forum for Construction, 2002).

These issues often occur as a result of cultural disparities across project teams. Given the assumed complexity of cultural factors and the clear deficiencies in the business's approach to its employees, it is not unexpected that Egan's (1998) study recommended that the industry enhance its ability to effectively manage its employees. Dainty et al. (2007) argue that the sector needs to enhance its people management techniques by directly tackling cultural issues. In the context of increasing global integration, the construction sector has been required to adjust and change in order to match with the broader operating environment. In the past few years, there has been a notable change in perspectives toward work, with a prominent emphasis on intercultural collaboration (Weatherley, 2006).

The extensive growth of globalization has led to notable economic, social, and political consequences, resulting in a prominent amalgamation of cultures within organizations across the globe. New marketplaces have emerged with the aim of reducing costs and maximizing profits for goods and services. Many organizations have implemented new managerial approaches and developed a multicultural atmosphere in order to benefit on globalization to grow their target audience, with the goal of improving their competitiveness in the market (Ozguler, 2016). People from different foreign nationalities, with unique ways of thinking, work together peacefully towards a shared goal, participating in activities that go beyond national borders. In addition, Neeley (2015) notes that multinational firms tend to embrace global initiatives and multicultural teams as an organizational framework in order to succeed in the global market. According to Konanahalli et al. (2014), the project management sector is currently undergoing a new phase of internalization. Furthermore, Lee-Kelley and Sankey (2008) highlight the crucial importance of efficiently handling cultural disparities among team members in order to achieve project success. According to the Project Management Institute (PMBOK, 2013), project success is the achievement of effectively completing a project while staying to the limitations of scope, time, money, quality, resources, and risk. A study conducted by Cheng et al. (2006) found a strong correlation between the success of a project and the degree to which the team is aligned with the project objectives.

Chapter 3

3. Methodology

Research was defined by Leedy and Ormrod (2001) as the act of gathering, analyzing, and interpreting data that is useful for comprehending a subject. The study is meticulous in elucidating the goal and communicating the results occurring within recognized compositions (Williams, 2007). Additionally, it helps researchers define their research agenda, specifically how to conduct the study and what kinds of considerations are reasonable (Williams, 2007).

3.1 Research Settings

This chapter covered the approaches, focusing on the approaches, tactics, and orientations that adhered to the chosen research philosophy. Additionally, the following case studies' data were collected using these ideas and techniques.

3.2 Research Philosophy

The advancement and attributes of knowledge are associated with research philosophy, which assists researchers in producing their strategy and methodology for conducting studies (Saunders, 2009). Moreover, it assists readers and scholars in gaining a clear understanding of the phenomenon and assists in establishing a specific objective for the study (Carson et al., 2001).

3.2.1 Ontology

The kind of universe we are looking at and the structure of reality are related to ontology, which is defined as "the study of being" (Crotty, 1998). Guba and Lincoln (1989) state that ontological inquiry asks, "What is there that can be known?" in reference to the presence of a phenomena. It is advantageous for the researcher to consider questions like: does the world exist independently of our understanding of it? (Greener, 2011). Sikes (2004) suggests that when knowledge is objective and observable, it can be quantified and recorded by researchers. In contrast, they will need to evaluate the individuals involved if the knowledge seems subjective and conceptual. There are two different points of view, according to Bryman & Bell (2015): subjectivism and objectivism. While the latter views reality as depending on social actors and the study's context, the former considers reality's existence independent of social actors. (Carson and others, 2001). Because of this, the authors' ontological stance and the way they collected the research data are closely related (Oliver, 2010).

Finding the efficient project management techniques utilized in prosperous MCPs in emerging

nations was the main goal of the thesis. Additionally, it found additional CSFs unique to MCPs in poor nations. Due to the lack of standard CSFs for all situations, project management techniques also vary depending on the unique difficulties megaprojects face (Rolstadas et al., 2014). Therefore, we were able to offer our research a subjectivist viewpoint by admitting the existence of project management methodologies that are evolving in response to context, culture, people's behavior, and attitudes. Additionally, it assisted us in formulating the interpretation of the data and selecting the approaches (Ratner, 2002).

Because of this, the project managers who worked on the MCPs provided their opinions as the foundation for the study questions' responses. It assisted us in determining the efficient project management techniques used by prosperous MCPs in emerging nations. Additionally, it helped us find other CSFs relevant to MCPs in that situation.

3.2.2 Epistemology

According to Fayolle et al. (2006), ontology is the highest and most complete level, and epistemology follows ontology by default. Crotty (1998) defines epistemology as a method of understanding and interpretation. It discusses how we recognize what we know (Ahmed, 2008). Furthermore, epistemology is concerned with the nature and forms of knowledge, according to Cohen et al. (2007). Additionally, the researcher's epistemological stance has a significant influence on the method selection about its goals and purposes (Snape and Spencer, 2003). Moreover, the method affects the processes by which that knowledge is generated. Because of this, writers often choose a subjectivist epistemology, which makes the assumption that the researcher and the object of study are related and that the researcher's values will unavoidably influence the research. Lincoln and Guba, 1994). Gephart (1999) identifies critical postmodernism as the third research paradigm that supports epistemology, despite positivism and interpretivism being acknowledged as the two most prominent epistemological schools.

There is a connection between positivist epistemology and objectivism. Positivism is an approach that emphasizes learning about an objective, external world. Scotland (2012). Furthermore, it is supported by descriptions and facts in addition to principles derived from scientific knowledge and methodologies. House (1991). Additionally, positivistic methods distance themselves from personal experience and ideals in search of subjectivity and a purpose for research (Carson et al. 2001; Hudson and Ozanne 1988).

The interpretivist paradigm aims to understand people (Babbie & Mouton, 2008). The objective is to comprehend and analyze people's social structures, values, and experiences (Collis & Hussey, 2009; Rubin & Babbie, 2010). Gephart (1999) further describes interpretivism as a way to understand human social connections. Fouché and Schurink (2011) challenge the fallacy that the

social sciences should adhere to the same rules as the natural sciences, in agreement with Gephart (1999).

Furthermore, Schwandt (2007) highlights that social contact is the sole way in which meanings can be seen rather than facts and statistics.

Because it takes into account the viewpoint of project managers rather than only looking at empirical facts and statistics on the successful completion of MCPs in developing countries, the interpretive method is appropriate for this thesis. Therefore, relevant information was obtained and deduced via discussion with MCP project managers.

3.2.3 Axiology

A branch of philosophy called axiology studies moral judgements (Saunders et al., 2012). Furthermore, it assesses the value of the researchers while accounting for biases throughout the whole study process (Li, 2016). The author of this thesis is a civil engineer who has experience working on building projects in his own country. As a result, it created a criteria for choosing "MCPs in developing countries." The capacity of the article to relate the author's understanding of civil engineering to the project management curriculum was also beneficial. Prior experience and subject-matter expertise influence the study at every turn, including goals, data gathering, analysis, and conclusions (Bryman & Bell, 2015). Therefore, it is important to engage in self-reflection in order to avoid bias and to cultivate a feeling of importance in the research. Bell and Bryman, 2015).

The thesis writer continuously maintained the stance that they should work on MCPs in order to link his bachelor's and master's degrees since he had previously studied civil engineering. Furthermore, the project's failure was first attributed to political influence on MCPs in underdeveloped countries, according to the author's original assumptions, despite the fact that not much study had been done on the topic. But by doing a comprehensive literature review, gathering data from a variety of sources, and evaluating those sources, the author was able to disprove the thesis's accusations of prejudice. Additionally, I maintained a comprehensive record of the research procedures via the use of transcripts, papers, interactions with the external auditor (advisor), and surveys to ensure that I relied on the respondents' interviews for analysis rather than our interpretation.

3.3 Research Orientation

The research methodology, study design, and previously accepted ideas (the Subjectivist methodology) are all connected by the research orientation. Creswell (2014) states that choosing an appropriate orientation is dependent upon the commonly accepted academic literature and the unanswered questions. In addition, the authors' presumptions, worldviews, and comprehension of the phenomena have an impact (Ghuri & Gronhaug, 2010). Furthermore, an objectivist stance forces the study towards a quantitative design, while a subjectivist approach encourages a

qualitative design. As previously said, since we took the subjectivist perspective into consideration, our thesis was based on qualitative research using inductive reasoning. The part that follows will go into more depth about this:

3.3.1 Research Approach

Trochim (2006) states that there are two main techniques to thinking: deductive and inductive. Inductive reasoning is described as starting from the general to the specific, whereas deduction starts from the specific to the general. Furthermore, deductive reasoning is founded on objectivist philosophy and is based on laws, numbers, or generalized principles, whereas induction deals with knowledge based on experience and observations. According to Ghauri & Gronhaug (2010), the deductive method develops a hypothesis based on the body of knowledge and arrives at a conclusion by providing evidence to support the hypothesis. Considering that an inductive technique involves the researcher developing a broader vision by expanding the theory connecting many points of view by working from the "bottom-up" with the opinions of others (Creswell, 2007).

In addition, it starts with a clearly stated problem and develops a new theory by examining it through participant opinions, academic literature, and case studies (Ghauri & Gronhaug, 2010). Through a thorough literature analysis, the writers of this thesis were able to determine the

relationship between project management techniques and the elements of success in emerging nations. Nevertheless, prior research hasn't shown that MCPs in developing nations have particularly developed CSFs. Consequently, the inductive approach proved to be more suitable and adequate in facilitating the creation of a novel theory. This theory was derived from the careful observation and practical knowledge of project managers operating in poor countries' MCPs.

3.3.2 Research Purpose

Depending on the nature of the research topic, there are various forms of research that may be classified into: explanatory (problem that is clearly defined), descriptive (problem that is understood), and exploratory (problem that is ambiguous) (Yin, 1994; Zikmund, 2000).

Yin (1994) contends that there is a thin line separating these categories, and that the researchers' choice of research category should be guided by the study topic, the goal of the investigation, and the research questions. The purpose of the thesis is to determine the efficient project management techniques used in prosperous MCPs in developing nations. Additionally, it will assist us in locating other CSFs unique to MCPs in that particular setting. Exploratory study was the most appropriate and successful approach since it produced insight from a fresh angle, given that the topic had not been thoroughly investigated in the earlier research investigations (Saunders et al., 2009).

3.3.3 Research Strategy

The two most common approaches are the quantitative and qualitative methods. The main distinction between the two types of research is that qualitative research is more introspective and works with sentences, emotions, and their interpretations, while quantitative research is based on quantifiable data and statistics (Ghauri & Gronhaug, 2010). Similarly, Creswell (2003) emphasises that information collecting and quantification are steps in the process of using quantitative research to support or refute "alternate knowledge claims."

The foundation of qualitative research is inductive-objectivist thinking, as opposed to deductive reasoning. Furthermore, the researchers attempt to clarify the questions raised by the observational elements (Williams, 2007). The thesis's idea was derived from the subjectivist-inductive approach, which has a tight relationship with the qualitative research. Additionally, Bryman (2016) highlights that the inductive strategy and the qualitative technique are comparable in that both concentrate on formulating a theory grounded on society views (Ghauri & Gronhaug, 2010). Thanks to the gathering of qualitative data, the authors were able to better understand the phenomena by using case study approaches to analyse the project managers' views. The nature of gathering qualitative data will be discussed in the section that follows, with an emphasis on exploratory case studies, grounded theory, and interviews.

3.4 Research Design

3.4.1 Research Inquiry Strategies

To increase the strength and credibility of the research, data can be gathered using a variety of research inquiry techniques (Tracy, 2019). Nonetheless, the foundation of the majority of inquiry tactics is the chosen deductive/quantitative or inductive/qualitative methodology, the researchers' choice (Woo et al., 2017). As their primary methods of investigation, inductive and qualitative approaches typically employ ethnography, case studies, and grounded theory. However, in order to analyze an issue inside a real-life context—where there are no true borders between the issue and its setting—through the use of different sources of data, we employed the case study inquiry technique for our thesis (Hancock et al., 2021).

Moreover, as per (Ponelis, 2015), Case study methodologies are predominantly linked to experimental study projects.. Tracy was refuted by (Woo et al., 2017), who highlighted their applicability in both explanatory and exploratory research. The case study inquiry strategy, which has been described as an efficient way to handle exploratory problems, was followed for the current thesis (Darke et al., 1998). The thesis targets project managers working for construction firms that helped Norway, a developed nation, successfully deploy MCPs. Because of this, it helped

researchers validate the project management techniques they discussed in the literature review in a real-world setting. In addition, it helped them investigate different CSFs from poor nations. The use of case study methodology has given rise to additional means of gathering qualitative data, including news articles, project paperwork, and interviews. Several exploratory case studies were helpful in cross-checking the results and creating a pattern to be applied during the analysis because the information was insufficient.

3.4.2 Data Collection Methods

Through case studies, researchers can combine information from several informant sources to create a comprehensive picture. Interviews, survey, documentation, records, participation, and observation are some examples of data collection methods. But they might also consist of life narratives, films, and pictures (Yin, 2003). The Survey served as the main information source for the current thesis. In addition, journal articles, pertinent webpages, newspaper blogs, and project documents were all helpful.

However, the survey filled by the project managers and other participants verified all of the information that had been gathered. However, because the thesis was exploratory in character, surveys were conducted. This facilitated the gathering of further data because the questions were not predetermined, and a respondent's response prompted other questions about the same topic. This will be covered in more detail in section 3.4.3 of the survey framework.

The Participants:

Obtaining detailed information from the respondents is the goal of a qualitative study as opposed to drawing statistical generalizations (Lewis et al., 2003). In order to collect the essential data for the research, it is crucial to choose the target group. The thesis aims to identify effective project management strategies employed in MCPs in developed countries that influence the ecological and social objectives of the project, in addition to the business and project goals. As a result, surveys were filled by project managers because they are essential participants in projects and essential to the project management process (Papke-Shields et al., 2010).

3.4.3 Survey Framework:

The primary objective of the survey was to improve data collecting from Project Managers, resource owners, and project sponsors who collaborate with various project-related departments within, in order to gather their useful insights and experiences. The survey inquiries

the items were categorised into nine sections and can be located in Appendix B. The survey respondents were picked by the interviewers, who distributed the survey to individuals they deemed most suitable to provide answers. The researchers also picked some of the responders based on the organisational map of the three relevant business units. The respondents were selected based on the belief that they would provide high-quality information due to their expertise and would contribute the most precise and pertinent data feasible to support the research premise.

The participants were issued the invitation via email, and two subsequent reminders were sent during the designated time frame to enhance the rate of response. The survey answer data was jointly analysed by the two researchers to facilitate a meaningful debate and critical evaluation of the empirical findings. During the survey, the researchers inquired in greater detail about the criteria for success related to the three components: the projects themselves, the project team members, and the Project Manager. The objective was to identify the characteristics that contribute to the success of project management.

3.5 Ethical Concerns

Ethics is defined by (Kendon, 1990) as the standards that guide our behaviour and interactions with others. (Emanuel et al., 2000) emphasises that researchers should establish what constitutes ethical research for themselves because of this. According to (Fouka & Mantzorou, 2011), research ethics deals with the authors' morality in respect to the rights of participants whose work has an impact on them. Every ethical consideration was taken into account in this work, including data collecting, data analysis approaching interview subjects, conducting interviews, and presenting findings. The following chapter goes into further information about the report's ethical concerns.

Nonetheless, the rights of the individuals who took part in the work are covered in this section. Since one of the respondents to the Survey was a mutual acquaintance of the author, appropriate steps were followed to prevent positive results and eliminate any potential conflicts of interest (Bryman and Bell, 2015). Data from several sources was triangulated in order to achieve this. In an attempt to make sure that the participants knew enough about the subject, the respondents were contacted for each survey via personal links and given a briefing about the project. Additionally, this gave them the opportunity to determine if they were eager to leave the research or to contribute to it. After they indicated that they would be willing to help us with their knowledge, we gave them more pertinent information. The participants' consent was obtained for each survey in order to record the processes and help the researchers produce higher-quality work. Moreover, consent was obtained to protect the participant's privacy (Fouka & Mantzorou, 2011). Furthermore, there should be mutual trust between the respondent and the researcher (Moorman et al., 1992).

3.6 Research Quality

As previously mentioned, qualitative research takes an interpretive stance toward the phenomenon that is being observed. (Gerrig, 2018) affirms the earlier story and describes it as a practical method for comprehending the problem in an actual setting. Furthermore, according to Crotty (1998), a researcher can develop a comprehensive understanding by conducting an inquiry that examines a social issue.

However, because it is interpretive in nature, qualitative research is occasionally criticized for having little applicability in a larger setting (Lewis et al., 2003). Prejudice and a lack of authenticity and legitimacy are among the challenges facing the qualitative study (Patton, 1999). Furthermore, the increasing diversity of qualitative philosophical viewpoints makes it increasingly difficult to modify the standards for quality assurance (Patton, 1999). However, several studies have examined the criteria used to assess the standard of qualitative research.

Scholars have emphasised validity and reliability as the primary factors influencing study quality (Cypress, 2017; Kimberlin & Winterstein, 2008; Noble & Smith, 2015). Furthermore, according to (Golafshani, 2003), validity and dependability are critical to raising the standard of research. These resources lessen the possibility of performing inefficient research while also helping to develop a solid relationship between the study's objectives and its findings. (Riege, 2003) In his study, the author presents four quality assessment tests that draw on earlier approaches. These assessments aid in ascertaining the precision, authenticity, dependability, and consistency of a study's data. Crucial issues covered by the evaluation tests include construct validity, dependability, external credibility, and inner reliability, among others. In addition, he defines case studies as empirical inquiries that look at the subject in a genuine, real-world setting. Thus, the quality ratings indicated above were put into place to raise the bar for empirical research in society. Elo et al. (2014) also use other components to improve the dependability of qualitative investigations, including credibility, transferability, dependability, and conformability. These factors were also taken into consideration while assessing the study's general features.

Construct validity, according to Bagozzi et al. (1991), is the way operational measures are organized. The research question and the study's objectives are closely related since the research question directs the study's efforts toward accomplishing these goals. The current study's theoretical framework made it easier to develop the actions required to meet the goals. Through literature reviews and case studies, the study looked at project management strategies in Multi-Country programmes (MCPs) for developing countries. This method made it possible to create a framework that would support the establishing of construct validity. Data collected from a variety of sources, such as news articles, project documents, webpages, journal publications, and interviews, among others, improved the construct validity. Furthermore, cross-referencing the data collected from the sources confirmed the information gleaned from the interviews. We have

assembled transcripts, unprocessed notes, lectures, and interviews into a database so that the results can be connected to the study goals. For this reason, these items have been gathered and preserved (Bagozzi et al., 1991). Following that, the transcripts were sent to the respondents so they could confirm if there were any discrepancies in the Urdu to English translation. Explanatory case studies are a focus of internal validity, which seeks to demonstrate causal relationships (Bagozzi et al., 1991). Given that we are performing an exploratory case study, this was therefore ignored. Since the goal of case study research is generalization, generalizability is regarded as a constraint.

Rather than being applied to society at large, the findings are ascribed to theoretical concepts (Shavelson et al., 1992). Moreover, qualitative studies may concentrate on a specific context or individuals. This makes it difficult for the findings to be externally validated (Leung, 2015; Schofield, 2000). To effectively convey to the audience the extent to which the study's conclusions can be applied in other circumstances, a researcher must explicitly define the study's scope (Darke et al., 1998; Hancock et al., 2021). The theoretical framework has addressed the problem of inadequate project management techniques in MCPs in developing countries in great detail. The study's scope has been established by giving special attention to initiatives in emerging nations. The reader would then be able to determine how much external validity there is.

As stated by (Onwuegbuzie & Leech, 2006), reliability Dependability relates to how the study operates, specifically the methods employed for data collection. Using the same data collection procedures will allow you to assess the reproducibility of the result (Nakagawa & Schielzeth, 2010). Furthermore, the consistency of the research process across time and methodology is examined in order to assess its reliability (Golafshani, 2003). It has been determined that participant error, participation bias, observer error, and observer bias are the four factors that significantly increase the risk of reliability (Catania et al., 1990; Musante & DeWalt, 2010). By keeping a comprehensive database of research procedures, including transcripts, meeting minutes, documentation, conversations with external auditors (advisors), and recordings of respondent interviews, the current study has addressed all of the aforementioned factors. For the purpose of educating the reader on the reliability of the work, all of these points have so been covered in prior discussions.

However, by comparing the results of the interviews with the publicly available project documentation, the possibility of bias was minimized. In addition, the answers that the participants had given were confirmed by asking the same questions again. The researcher was able to confirm and validate the participant's interpretation by using this technique. Credibility is recognized as the primary factor for boosting trustworthiness, per Cope (2014). Triangulation was the mechanism used in the current study to overcome the believability problem. (Abdalla et al., 2018) state that triangulation is a method utilized to obtain a deeper understanding. The above story is reinforced by (Tracy, 2019) and (Jones & McBeth, 2010), who state that

evidence that is consistent across several sources, theoretical frameworks, interviews, or the researchers themselves is likely to be more credible.

Transferability, which is related to generalizability, is the capacity to extrapolate study results to a larger population. The quality of the study is improved by the clear definition of its objectives and constraints (Carminati, 2018; Polit & Beck, 2010). The reader can also comprehend the extent of application in comparable situations by reading a thorough and in-depth explanation of the phenomenon and seeing it applied practically in the context of MCPs in developing countries (Merriam & Tisdell, 2015).

Conformability and the reliability of the research are related. In this sense, "quality" refers to the results of a study that are impacted by the involvement of the researchers, including their interpretations and biases (Elo et al., 2014). The report can become more credible by improving the results' dependability and offering a thorough explanation of the methods used for data collection, gathering, and analysis (Patton, 1999).

Scholars Hunter and Schmidt (2004) suggest that the bias of researchers will influence every facet of their work, encompassing topic selection, methodology, results, and conclusion development. Reflexivity is defined by (Patnaik, 2013) as the researcher's strategy for generating knowledge while gathering and analyzing data. Through a thorough examination of the literature, the researchers in this study supported their choice. They also included clear explanations for the techniques used, which are described in this chapter. Regular conversations with the adviser also assisted us in removing any potential bias from our research.

Chapter 4

4. Findings

4.1. Critical Success Factors

Project Organization Structure

Based on the responses to the question "How critical is the project organization structure to the success of a mega construction project?" here is the interpretation:

How critical is the project organization structure to the success of a mega construction project?
23 responses

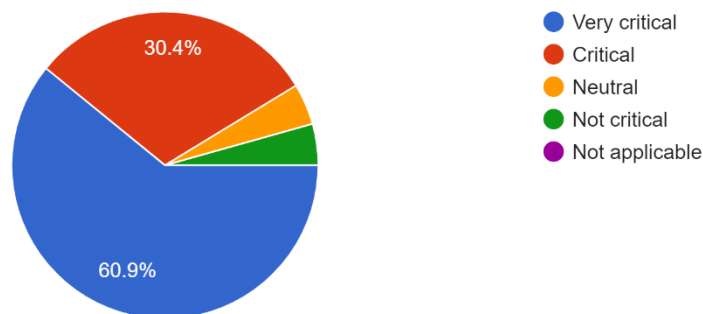


Figure 2. Project Organization Structure

Very Critical (60.9%): A significant majority of participants firmly feel that the project organization structure is crucial for the successful execution of large-scale building projects. This indicates a consensus among participants that a well-defined and efficient organizational structure is crucial for managing complexities and ensuring project success.

Critical (30.4%): A significant portion of respondents also consider the project organization structure to be important, though perhaps not as indispensable as those who chose "Very Critical."

This suggests a recognition that while critical, there may be varying degrees of emphasis on its importance among respondents.

Neutral (4%): A small percentage of respondents are neutral, indicating uncertainty or a lack of strong opinion regarding the importance of the project organization structure. This could imply a need for further exploration or clarification on the role and impact of organizational structure in mega construction projects.

Not Critical (2%): A very small minority of respondents believe that the project organization structure is not highly important to the success of mega construction projects. This viewpoint suggests a divergence from the majority opinion, possibly reflecting different perspectives on project management priorities.

Not Applicable (2%): Another small minority of respondents indicated that the question was not applicable to them. This could be due to their specific roles or experiences that do not directly involve considerations of project organization structure in mega construction projects.

Overall, the responses indicate a predominant belief in the criticality of project organization structure to the success of mega construction projects, with a majority viewing it as very critical. However, there are also varying perspectives, including neutral and dissenting opinions, which provide insights into different perceptions within the surveyed group.

Adequate Planning and Clear Project Objectives

Based on the responses to the question "How important is adequate planning and clear project objectives in mega construction projects?", here is the interpretation:

How important is adequate planning and clear project objectives in mega construction projects?

23 responses

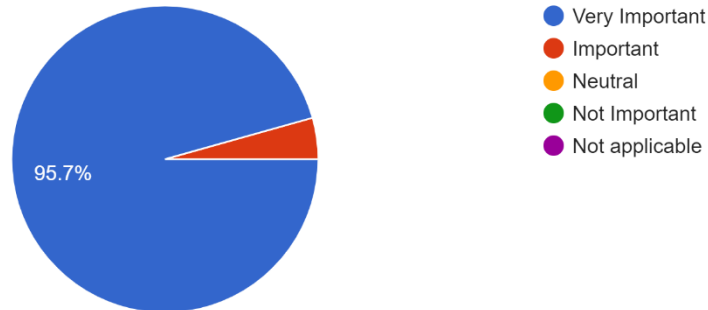


Figure 3. Adequate Planning and Clear Project Objectives

Very Important (95.7%): The overwhelming majority of respondents consider adequate planning and Having clear project objectives is essential for the success of large-scale construction ventures.. This high percentage indicates a strong consensus among participants that thorough planning and well-defined objectives are fundamental to managing complexities and achieving project goals effectively.

Important (4%): A small percentage of respondents also recognize the importance of adequate planning and clear project objectives, albeit not as emphatically as those who chose "Very Important." This suggests a minority perspective that still acknowledges the significance of planning and objectives in project success.

Neutral: No respondents selected this option, indicating that all participants had a clear opinion regarding the importance of planning and project objectives in mega construction projects.

Not Important: No respondents selected this option, suggesting unanimous agreement among participants that planning and clear objectives are indeed important factors in project success.

Not Applicable: No respondents selected this option, implying that all respondents found relevance in considering the importance of planning and clear objectives in mega construction projects.

Overall, the comments highlight a firm conviction in the crucial significance of thorough planning and well-defined project goals. In ensuring the success of mega construction projects, with an overwhelming majority viewing these elements as very important. This consensus highlights a foundational aspect of effective project management in large-scale construction endeavors.

Communication, Coordination, and Commitment

Based on the responses to the question "How critical are communication, coordination, and commitment to the success of mega construction projects?", here is the interpretation:

How critical are communication, coordination, and commitment to the success of mega construction projects?
23 responses

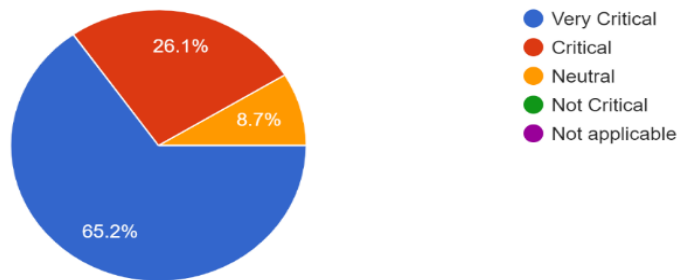


Figure 4. Communication, Coordination, and Commitment

Very Critical (65.2%): A significant majority of respondents believe that communication, coordination, and commitment are absolutely crucial to the success of mega construction projects. This indicates a strong consensus among participants that effective communication channels, seamless coordination among teams and stakeholders, and unwavering commitment are essential for managing complexities and ensuring project success.

Critical (26.1%): A notable percentage of respondents also view communication, coordination, and commitment as critical, though perhaps not as indispensable as those who chose "Very Critical." This suggests a recognition that while critical, there may be varying degrees of emphasis on these factors among respondents.

Neutral (8.7%): A minority of responders express neutrality, suggesting ambiguity or a lack of firm opinion. regarding the criticality of communication, coordination, and commitment to project success. This could imply a need for further exploration or clarification on the specific impact and importance of these factors in mega construction projects.

Not Critical: No respondents selected this option, suggesting consensus among participants that communication, coordination, and commitment are indeed critical or very critical to project success.

Not Applicable: No respondents selected this option, indicating that all respondents found relevance in examining the significance to communicate with one another collaboration, and commitment in large-scale construction projects.

Overall, the responses highlight a strong acknowledgment of the critical importance of communication, coordination, and commitment in ensuring the success of mega construction projects, with a majority viewing these factors as very critical. However, there are also varying perspectives, including neutral opinions, which provide insights into different perceptions within the surveyed group regarding the specific impact of these factors on project outcomes.

Resource Allocation

Based on the responses to the question "How significant is effective resource allocation in mega construction projects?", here is the interpretation:

How significant is effective resource allocation in mega construction projects?

23 responses

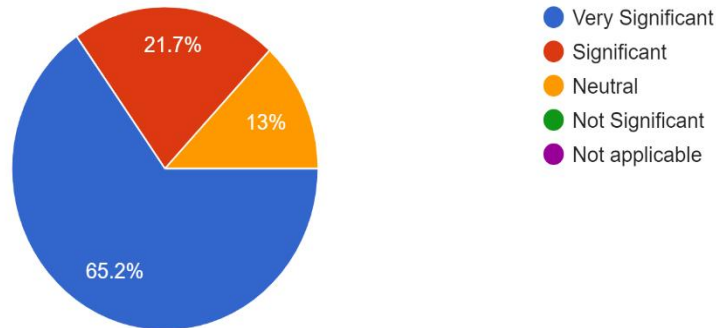


Figure 5. Resource Allocation

Very Significant (65.2%): A majority of respondents believe that effective resource allocation is highly significant in mega construction projects. This indicates a strong consensus among participants that efficiently allocating resources such as materials, manpower, and financial resources is crucial for managing costs, timelines, and overall project success.

Significant (21.7%): A significant percentage of respondents also consider effective resource allocation to be important, though not as emphatically as those who chose "Very Significant." This suggests a recognition that while critical, there may be varying degrees of emphasis on resource allocation among respondents.

Neutral (13%): A notable percentage of respondents are neutral, indicating uncertainty or a lack of strong opinion regarding the significance of effective resource allocation in mega construction projects. This could imply a need for further exploration or clarification on the specific impact and importance of resource allocation practices.

Not Significant: No respondents selected this option, suggesting consensus among participants that effective resource allocation is indeed significant or very significant in mega construction projects.

Not Applicable: No respondents selected this option, indicating that all respondents found relevance in considering the role of resource allocation in mega construction projects.

Overall, the responses highlight a strong acknowledgment of the importance of effective resource allocation in ensuring the success of mega construction projects, with a majority viewing it as very significant. The varying percentages for significant and neutral responses provide insights into different perspectives within the surveyed group regarding the specific impact and priority of resource allocation practices in project management.

Stakeholders Involvement and Consultation

Based on the responses to the question "How critical is stakeholders' involvement and consultation in your projects?" here is the interpretation:

How critical is stakeholders' involvement and consultation in your projects?
23 responses

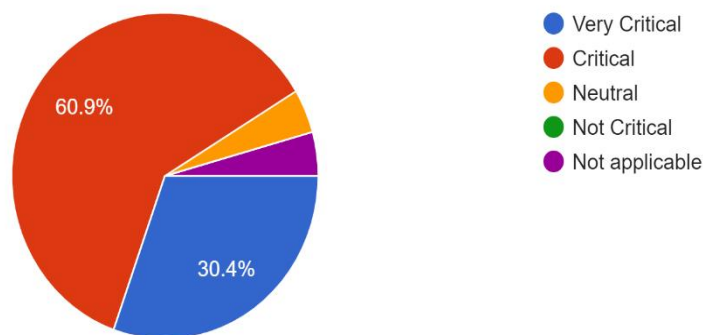


Figure 6. Stakeholders Involvement and Consultation

Very Critical (30.4%): A minority of respondents believe that stakeholders' involvement and consultation are extremely critical in their projects. This suggests that while there is recognition of the importance of stakeholders, not all respondents view their involvement as absolutely indispensable.

Critical (60.9%): The majority of respondents consider stakeholders' involvement and consultation to be critical in their projects. This indicates a strong consensus among participants that engaging stakeholders and seeking their input is fundamental for project success, though perhaps not universally viewed as extremely critical.

Neutral (4%): A small percentage of respondents are neutral, indicating uncertainty or a lack of strong opinion regarding the criticality of stakeholders' involvement and consultation in their projects. This could suggest varying levels of experience or perspective on the impact of stakeholder engagement.

Not Critical: No respondents selected this option, suggesting consensus among participants that stakeholders' involvement and consultation are important or very important in their projects.

Not Applicable (4%): Another small percentage of respondents indicated that the question was not applicable to them. This could be due to their specific roles or experiences where stakeholders' involvement and consultation may not be relevant.

Overall, the responses indicate a strong acknowledgment of the importance of stakeholders' involvement and consultation in project success, with a majority viewing it as critical. The varying percentages for very critical, critical, neutral, and not applicable responses provide insights into different perspectives within the surveyed group regarding the specific role and impact of stakeholders in project management.

Authority and Leadership of the Project Manager

Based on the responses to the question "How critical is the authority and leadership of the project manager in mega construction projects?", here is the interpretation:

How critical is the authority and leadership of the project manager in mega construction projects?

23 responses

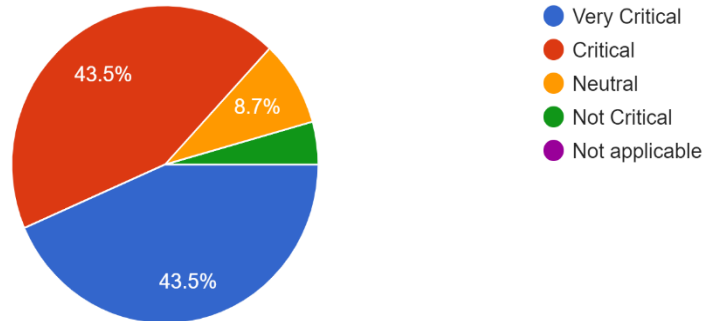


Figure 7. Authority and Leadership of the Project Manager

Very Critical (43.5%) and Critical (43.5%): An equal percentage of respondents believe that the authority and leadership of the project manager are critical or very critical in mega construction projects. This indicates a balanced perspective among participants that effective authority and strong leadership from the project manager are essential for guiding and coordinating project activities, managing teams, and ensuring project success.

Neutral (8.7%): A small percentage of respondents are neutral, indicating uncertainty or a lack of strong opinion regarding the criticality of the authority and leadership of the project manager. This could suggest varying levels of experience or perspectives on the impact of project manager authority and leadership in mega construction projects.

Not Critical (4%): A minority of respondents believe that the authority and leadership of the project manager are not critical in mega construction projects. This viewpoint suggests a divergence from the majority opinion, possibly reflecting different perspectives on the role and effectiveness of project manager authority and leadership.

Not Applicable: No respondents selected this option, indicating that all respondents found relevance in considering the authority and leadership of the project manager in mega construction projects.

Overall, the responses highlight a strong acknowledgment of the critical role played by the authority and leadership of the project manager in mega construction projects, with an equal split between those who view it as critical and very critical. The varying percentages for neutral and not critical responses provide insights into different perspectives within the surveyed group regarding the specific impact and importance of project manager authority and leadership in project management.

Competent Project Team

Based on the responses to the question "How important is having a competent project team in mega construction projects?" here is the interpretation:

How important is having a competent project team in mega construction projects?

23 responses

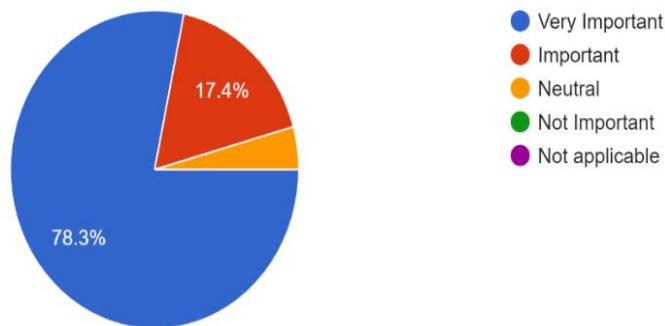


Figure 8. Competent Project Team

Very Important (78.3%): The majority of respondents believe that having a competent project team is highly important in mega construction projects. This indicates a strong consensus among participants that the skills, expertise, and effectiveness of the project team members play a crucial role in achieving project objectives, managing complexities, and ensuring overall project success.

Important (17.4%): A significant percentage of respondents also consider having a competent project team to be important, though perhaps not as overwhelmingly critical as those who chose "Very Important." This suggests a recognition that while essential, there may be varying degrees of emphasis on the importance of team competence among respondents.

Neutral (4%): A small percentage of respondents are neutral, indicating uncertainty or a lack of strong opinion regarding the importance of having a competent project team in mega construction projects. This could imply varying levels of experience or perspectives on the impact of team competence in project management.

Not Important: No respondents selected this option, suggesting consensus among participants that having a competent project team is indeed important or very important in mega construction projects.

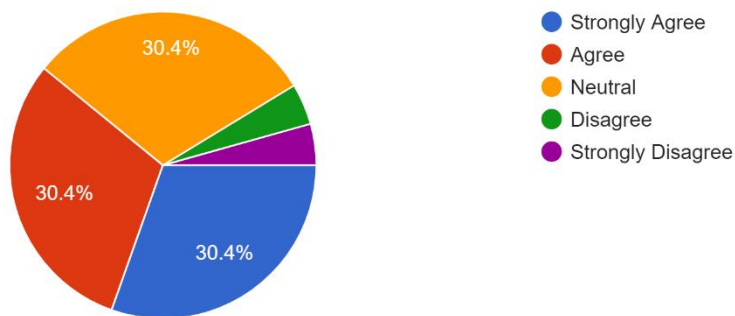
Not Applicable: No respondents selected this option, indicating that all respondents found relevance in considering the importance of team competence in mega construction projects.

Overall, the responses highlight a strong acknowledgment of the critical importance of having a competent project team in ensuring the success of mega construction projects, with a majority viewing it as very important. The varying percentages for important and neutral responses provide insights into different perspectives within the surveyed group regarding the specific impact and priority of team competence in project management.

4.2 Working in a Multi-Cultural Environment

Based on the responses to the statement "The diversity in our team has positively contributed to the project's success," here is the interpretation:

The diversity in our team has positively contributed to the project's success.
23 responses



Strongly Agree (30.4%) and Agree (30.4%): An equal percentage of respondents strongly agree and agree that diversity in their team has positively contributed to the project's success. This indicates a significant proportion of participants perceive diversity as a beneficial factor in enhancing project outcomes. They likely believe that diverse perspectives, backgrounds, and skills within the team have led to innovative solutions, improved decision-making, and overall project success.

Neutral (30.4%): A substantial percentage of respondents are neutral, indicating uncertainty or a lack of strong opinion regarding the impact of diversity on project success. This could suggest varying levels of awareness or experience with how diversity influences project dynamics and outcomes.

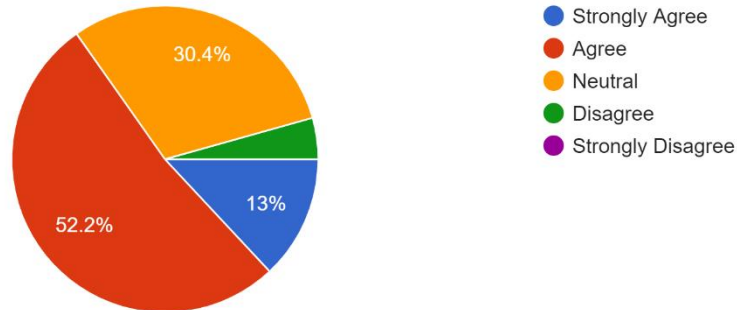
Disagree (4%) and Strongly Disagree (4%): A small percentage of respondents disagree or strongly disagree that diversity has positively contributed to the project's success. This minority viewpoint suggests a different perspective, potentially indicating challenges or negative experiences related to managing diversity in their project teams.

Overall, the responses suggest a mixed perception regarding the impact of diversity on project success. While a significant portion sees diversity as a positive contributor, there are also neutral and dissenting opinions, highlighting varying perspectives within the surveyed group regarding the specific effects of team diversity on project outcomes.

Based on the responses to the statement "Working in a multi-cultural team presents significant challenges," here is the interpretation:

Working in a multi-cultural team presents significant challenges.

23 responses



Strongly Agree (13%) and Agree (52.2%): A majority of respondents either strongly agree or agree that working in a multi-cultural team presents significant challenges. This indicates that a significant proportion of participants perceive cultural diversity as a factor that introduces complexities and difficulties in teamwork, communication, coordination, and overall project management.

Neutral (30.4%): A substantial percentage of respondents are neutral, indicating uncertainty or a lack of strong opinion regarding the challenges posed by working in a multi-cultural team. This could suggest varying levels of experience or exposure to multi-cultural team dynamics, or it could reflect a need for more understanding or exploration of the specific challenges involved.

Disagree (4%): A minority of respondents disagree that working in a multi-cultural team presents significant challenges. This viewpoint suggests a different perspective, potentially indicating positive experiences or effective strategies in managing and leveraging cultural diversity within their teams.

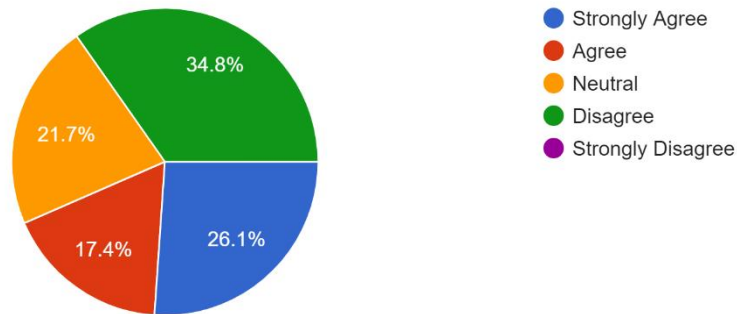
Strongly Disagree: No respondents selected this option, suggesting consensus among participants that there are at least some challenges associated with working in multi-cultural teams.

Overall, the responses indicate a mixed perception regarding the challenges posed by working in multi-cultural teams. While a majority sees it as presenting significant challenges, there are also neutral and dissenting opinions, highlighting varying perspectives within the surveyed group regarding the specific complexities and difficulties of multi-cultural team environments.

Based on the responses to the statement "Cultural misunderstandings have occasionally hindered our project progress," here is the interpretation:

Cultural misunderstandings have occasionally hindered our project progress.

23 responses



Strongly Agree (26.1%) and Agree (17.4%): A combined 43.5% of respondents either strongly agree or agree that cultural misunderstandings have occasionally hindered their project progress. This indicates that a significant proportion of participants perceive cultural differences as occasionally causing issues that impact project timelines, communication, coordination, or team dynamics.

Neutral (21.7%): A notable percentage of respondents are neutral, indicating uncertainty or a lack of strong opinion regarding the impact of cultural misunderstandings on project progress. This could suggest varying levels of experience with managing cultural diversity or a need for more understanding of the specific challenges posed by cultural differences.

Disagree (34.8%): A considerable minority of respondents disagree that cultural misunderstandings have hindered their project progress. This viewpoint suggests a different perspective, potentially indicating effective strategies or positive experiences in mitigating and resolving cultural misunderstandings within their project teams.

Strongly Disagree: No respondents selected this option, suggesting consensus among participants that cultural misunderstandings have at least occasionally posed challenges to project progress.

Overall, the responses indicate a mixed perception regarding the impact of cultural misunderstandings on project progress. While a significant portion acknowledges occasional hindrances due to cultural differences, there are also neutral and dissenting opinions, highlighting varying perspectives within the surveyed group regarding the specific challenges and impacts of cultural diversity on project dynamics.

4.3 Working in the Norwegian Market

Based on the responses to the statement "The business environment in Norway is different from that of my home country," here is the interpretation:

The business (Construction) environment in Norway is different from that of my home country.
23 responses

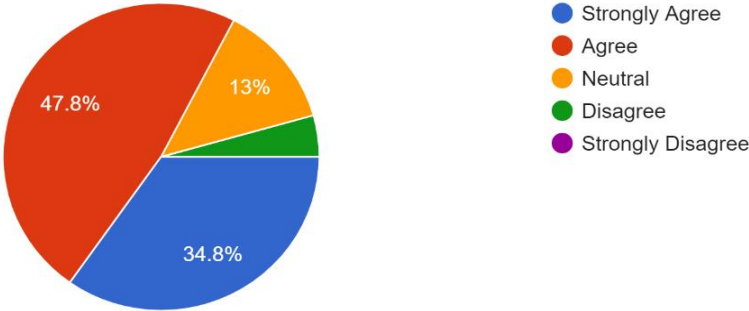


Figure 9. Business Construction Environment

Strongly Agree (34.8%) and Agree (47.8%): A combined 82.6% of respondents either strongly agree or agree that the business environment in Norway differs from that of their home country. This indicates that a significant majority of participants perceive notable differences in business practices, regulations, cultural norms, or other factors between Norway and their home countries.

Neutral (13%): A small percentage of respondents are neutral, indicating uncertainty or a lack of strong opinion regarding the differences in the business environment between Norway and their home country. This could suggest varying levels of experience or exposure to the business practices of both countries.

Disagree (4%): A minority of respondents disagree that the business environment in Norway is different from that of their home country. This viewpoint suggests a different perspective, potentially indicating similarities or shared practices between Norway and their home country's business environments.

Strongly Disagree: No respondents selected this option, suggesting consensus among participants that there are at least some differences between the business environment in Norway and that of their home country.

Overall, the responses highlight a strong acknowledgment among the majority of respondents that the business environment in Norway differs from that of their home country. The varying percentages for strongly agree, agree, neutral, and disagree responses provide insights into different perspectives within the surveyed group regarding the specific aspects and impacts of these differences on their professional experiences and perceptions.

Based on the responses to the statement "I have encountered specific challenges working in the Norwegian market," here is the interpretation:

I have encountered specific challenges working in the Norwegian market.

23 responses

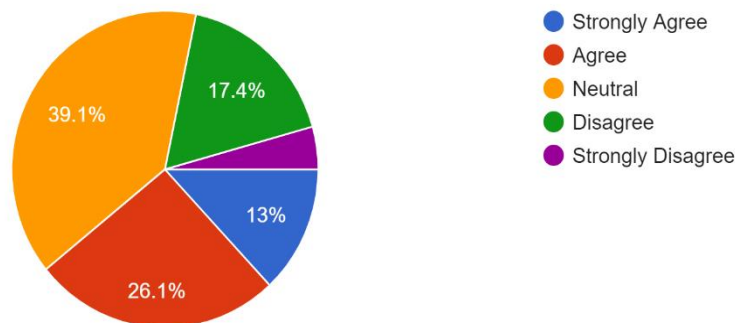


Figure 10. Encounter specific challenges

Strongly Agree (13%) and Agree (26.1%): A combined 39.1% of respondents either strongly agree or agree that they have encountered specific challenges while working in the Norwegian market. This indicates that a significant minority of participants perceive encountering difficulties or obstacles in their professional endeavors within Norway.

Neutral (39.1%): An equal percentage of respondents are neutral, indicating uncertainty or a lack of strong opinion regarding encountering challenges in the Norwegian market. This suggests varying levels of experience or exposure to challenges specific to the Norwegian market, or it could reflect a need for more understanding or exploration of these challenges.

Disagree (17.4%) and Strongly Disagree (4%): A combined 21.4% of respondents disagree or strongly disagree that they have encountered specific challenges in the Norwegian market. This minority viewpoint suggests a different perspective, potentially indicating positive experiences or effective strategies in navigating the Norwegian market without significant obstacles.

Overall, the responses indicate a mixed perception regarding encountering challenges in the Norwegian market. While a significant minority acknowledges specific challenges, there is also a notable portion that is neutral or disagrees with this statement, highlighting varying perspectives within the surveyed group regarding their experiences and perceptions of working in Norway.

4.4 Collaboration and Conflict Resolution

Based on the responses to the statement "Different companies on the project collaborate effectively," here is the interpretation:

Different companies on the project collaborate effectively.
23 responses

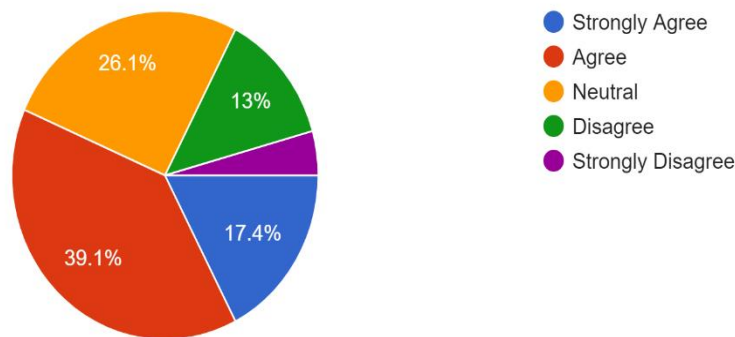


Figure 11. Project collaboration efficiency

Strongly Agree (17.4%) and Agree (39.1%): A combined 56.5% of respondents either strongly agree or agree that different companies involved in the project collaborate effectively. This

indicates that a majority of participants perceive effective collaboration among various companies working together on projects.

Neutral (26.1%): A notable percentage of respondents are neutral, indicating uncertainty or a lack of strong opinion regarding the effectiveness of collaboration among different companies on projects. This suggests varying levels of experience or exposure to collaborative efforts across companies in project settings.

Disagree (13%) and Strongly Disagree (3%): A combined 16% of respondents disagree or strongly disagree that different companies collaborate effectively on projects. This minority viewpoint suggests a different perspective, potentially indicating challenges or perceived inefficiencies in collaborative efforts among companies.

Overall, the responses indicate a generally positive perception of collaboration effectiveness among different companies on projects, with a majority seeing effective collaboration. However, there are also neutral and dissenting opinions, highlighting varying perspectives within the surveyed group regarding the specific effectiveness and challenges of inter-company collaboration in project environments.

Based on the responses to the statement "Conflicts due to cultural differences significantly impact the project," here is the interpretation:

Conflicts due to cultural differences significantly impact the project.
23 responses

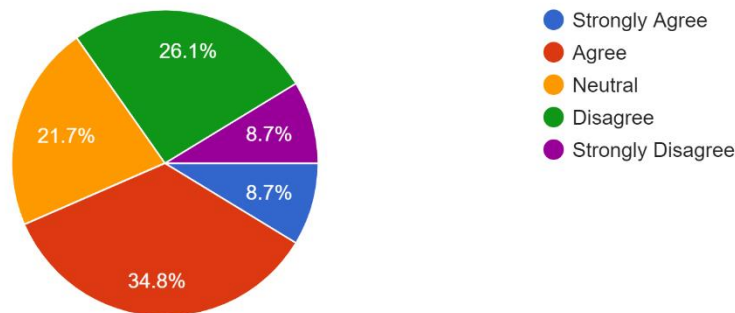


Figure 12. Cultural differences conflicts.

Strongly Agree (8.7%) and Agree (34.8%): A combined 43.5% of respondents either strongly agree or agree that conflicts due to cultural differences significantly impact the project. This indicates that a notable portion of participants perceive cultural differences as a significant factor contributing to conflicts that affect project outcomes.

Neutral (21.7%): A significant percentage of respondents are neutral, indicating uncertainty or a lack of strong opinion regarding the impact of cultural differences on project conflicts. This could suggest varying levels of experience or exposure to cultural diversity challenges in project settings.

Disagree (26.1%) and Strongly Disagree (8.7%): A combined 34.8% of respondents disagree or strongly disagree that conflicts due to cultural differences significantly impact the project. This minority viewpoint suggests a different perspective, potentially indicating experiences or beliefs that cultural differences have minimal impact on project conflicts.

Overall, the responses indicate a mixed perception regarding the impact of cultural differences on project conflicts. While a significant portion perceives cultural differences as impactful, there are also neutral and dissenting opinions, highlighting varying perspectives within the surveyed group regarding the specific effects and importance of managing cultural diversity in project environments.

Based on the responses to the statement "Differences in work practices are well managed within the project," here is the interpretation:

Differences in work practices are well managed within the project.

22 responses

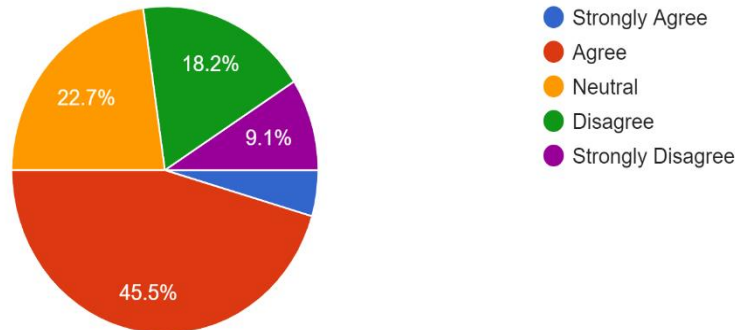


Figure 13. Differences in work practices

- **Agreement:** A majority of respondents (45.5%) agree that differences in work practices are well managed within the project. This suggests that many stakeholders perceive that the project manages cultural and work practice differences effectively.
- **Neutral:** A significant portion of respondents (22.7%) are neutral or undecided about whether differences in work practices are well managed. This could indicate uncertainty or a lack of strong opinion among these respondents.
- **Disagreement:** A notable minority (18.2%) disagree that differences in work practices are well managed within the project. This indicates that there is a substantial proportion of stakeholders who perceive shortcomings or challenges in managing these differences.
- **Strong Disagreement:** A smaller minority (9.1%) strongly disagree that differences in work practices are well managed. This suggests that a smaller but significant group of stakeholders believe there are serious issues in managing cultural and work practice differences within the project.

4.5 Personal and Organizational Adaptation

Based on the responses to the statement "My company has adapted its practices to fit the Norwegian market effectively," here is the interpretation:

My company has adapted its practices to fit the Norwegian market effectively.

23 responses

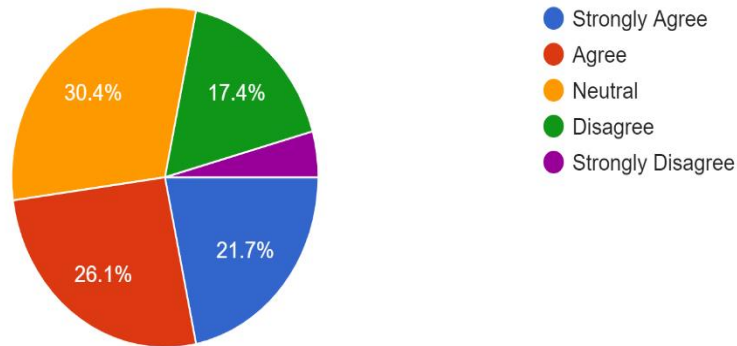


Figure 14. Norwegian market practices adaptation.

- **Agreement:** A combined total of 47.8% (21.7% strongly agree + 26.1% agree) of respondents agree that their company has adapted its practices to fit the Norwegian market effectively. This indicates a moderate level of agreement among respondents that adaptations have been made.
- **Neutral:** A significant portion of respondents (30.4%) are neutral or undecided about whether their company has adapted its practices effectively. This suggests a lack of strong opinion or uncertainty among these respondents.
- **Disagreement:** A notable minority (17.4%) disagree that their company has adapted its practices effectively to fit the Norwegian market. This indicates that there is a portion of respondents who perceive that their company's practices may not align well with the local market.
- **Strong Disagreement:** A small minority (4.4%) strongly disagree that their company has adapted its practices effectively. This suggests that a very small percentage of respondents believe there have been significant failures or inadequacies in adapting to the Norwegian market.

Based on the responses to the statement " I have personally adapted well to the multi-cultural project environment," here is the interpretation:

I have personally adapted well to the multi-cultural project environment.

23 responses

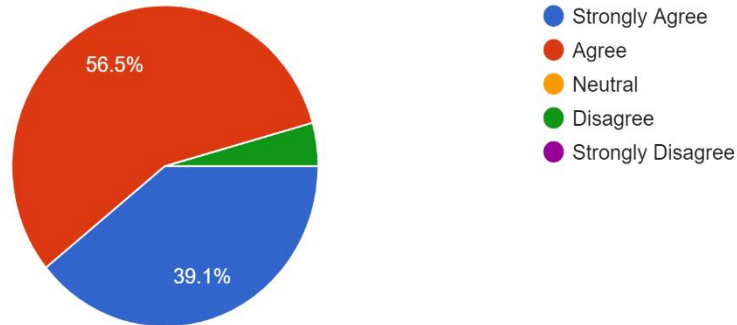


Figure 15. Multi-culture project environment adaptation

- **Agreement:** A majority of respondents agree that they have personally adapted well to the multi-cultural project environment. Specifically, 39.1% strongly agree and 56.5% agree. This combined total of 95.6% indicates a very strong positive perception among respondents regarding their personal adaptation.
- **Neutral:** A small percentage (4.5%) are neutral or undecided about their personal adaptation to the multi-cultural project environment. This suggests that a minority of respondents are uncertain about their own adaptation.
- **Disagreement:** There are no percentages provided for disagreement or strongly disagree, which might mean that none of the respondents strongly disagreed or disagreed with the statement.

4.6 Overall Project Impact

Based on the responses to the statement " The multi-cultural collaboration has positively impacted the project's progress," here is the interpretation:

The multi-cultural collaboration has positively impacted the project's progress.

23 responses

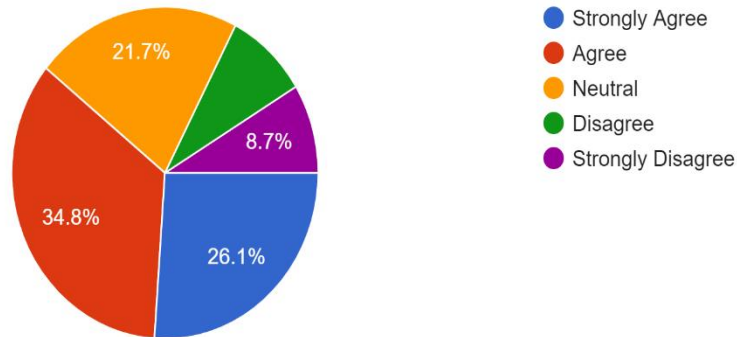


Figure 16. Multi-cultural collaboration

- **Agreement:** A combined total of 61.9% (26.1% strongly agree + 34.8% agree) of respondents agree that multi-cultural collaboration has positively impacted the project's progress. This indicates a majority of respondents perceive a positive influence from multicultural collaboration.
- **Neutral:** 21.7% of respondents are neutral or undecided about whether multicultural collaboration has positively impacted the project's progress. This suggests a significant portion of respondents are unsure or have mixed views on the impact.
- **Disagreement:** A combined total of 17.4% (8.7% disagree + 8.7% strongly disagree) of respondents disagree that multicultural collaboration has positively impacted the project's progress. This indicates a minority of respondents perceive either no positive impact or a negative impact from multicultural collaboration.

Based on the responses to the statement " Lessons learned from this project will benefit future multi-cultural collaborations," here is the interpretation:

Lessons learned from this project will benefit future multi-cultural collaborations.

23 responses

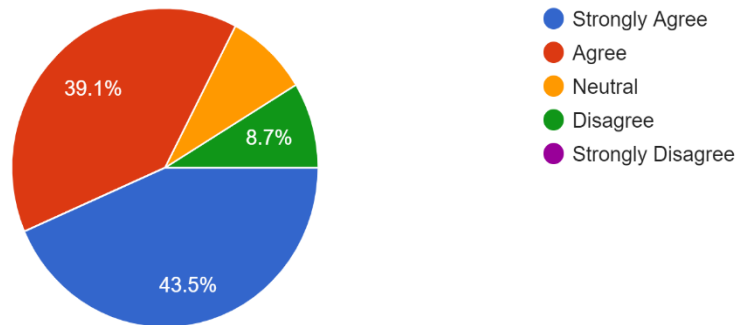


Figure 17. Lessons learned from this project.

- **Agreement:** A combined total of 82.6% (43.5% strongly agree + 39.1% agree) of respondents agree that lessons learned from this project will benefit future multicultural collaborations. This indicates a strong majority perceive value in the lessons derived from the project.
- **Neutral:** 8.7% of respondents are neutral or undecided about whether lessons learned will benefit future multicultural collaborations. This suggests a small portion of respondents are uncertain about the potential transferability of lessons.
- **Disagreement:** 8.7% of respondents disagree that lessons learned from this project will benefit future multicultural collaborations. This indicates a minority perceive limited or no value in applying project lessons to future multicultural endeavors.

Chapter 5

5.1 Discussions

This section discusses findings from Sotra Link in relation to the existing literature

5.2 CSFs and EPMA's within the Specific Context

Outsourcing and collaborating

As stated in the literature, a significant cause of MCPs failure is the lack of a complete and competent team of managers and technical staff members (Nguyen, 2007). In the chosen MCPs, it was found that the local staff members lacked the necessary knowledge to handle large-scale projects. They therefore required aid from competent practitioners with prior MCP expertise.

However, based on the analysis of the three chosen situations, the severity of the issue indicated in the literature was mitigated by outsourcing the necessary competencies and capabilities. The local staff members' lack of communication with one another who had certain managerial deficiencies as a result of their lack of previous expertise with the competent staff members and technology that were outsourced. The respondents reported that Language barriers were a serious barrier to interacting with others, and inadequate preparation by the locals resulted in delays in the deployment of the MCPs. The partnership among corporations from industrialized nations such as Italy, Spain, and England yielded significant advantages for the local employees. This added to the learning experience of the local workers.

Othman (2013) suggests that in order to address human development challenges, governments in developing countries should recognize that offering high-quality education and professional training is essential for achieving sustainable development and prosperity. A greater proportion of a country's Gross Domestic Product (GDP) must be allocated towards enhancing sustainable development and prosperity. Nevertheless, the shortage of excellent education and training may impede the timely achievement of this goal (Othman, 2013). In particular, in certain developing nations like South Africa, In terms of excess expenses and time delays the lack of qualified and experienced staff came in third and second, respectively during the construction of FIFA World Cup Stadiums, as reported by Baloyi and Bekker (2011).

Project management practitioners should place a high priority on working with local professionals and outsourcing experienced professionals to guarantee the successful implementation of these

MCPs. This approach will greatly benefit the local community and help them develop the necessary skills and capabilities for future MCPs development. Although there may be certain obstacles, if well handled, this technique would greatly enhance the skill set of the local staff members for current and future advancements.

Examining the Organizational Culture

Organizational culture refers to the collective attitudes and beliefs within a company that develop over time and shape the behavioral norms used to solve problems (Schein, 1990). According to Zbiegien-Maciag (1994), organizational culture refers to the collective way in which employees of a company identify, think, and behave. This behavior is deeply ingrained in the subconscious of the employees. The employees who work locally have gradually formed unfavorable attitudes and practices over time when it comes to the planning and execution of MCPs.

Throughout the administration of Sotra link, the project encountered inadequate planning in terms of cost, time, and risk. According to the research, the most efficient way to overcome obstacles and reduce risks is through thorough planning. The greater the number of variables and complexities that a project is encountering, the more essential it becomes to have thorough planning in place. Given that an MCP is inherently more risky than a traditional project due to its lengthy planning process and intricate interfaces (Flyvbjerg, 2006), it is imperative to have enough planning in order to address the additional complexities and issues that arise in developing countries. Various studies, including Bastani (1988), Fortune and White (2006), and Tabish and Jha (2011), have established that sufficient preparation plays a significant role in the success of a project.

Sotra Link project did not have a scheduled timetable or a cost benefit analysis. According to the respondent, the project experienced delays because the local workforce did not demonstrate professionalism in coordinating with the outsourced company. This project demonstrates a lack of seriousness in the risk mitigation process, which is indicative of the cultural norms and habits among the relevant businesses. Hence, the mere presence of skilled personnel, whether they are local or foreign, is insufficient to accomplish the project goals if the organizational culture is not adequately addressed and if the approach to project initiation and problem-solving is not altered.

Perception and disposition of individuals and groups within the community

According to Carrol (1982), organizational culture, including regulations and procedures, affects how employees behave, which is transmitted from one generation to another. The behavior of local parties was believed to have been influenced by this. As per the respondents, the communication gaps between stakeholders have emerged as a result of the the participants' mindset in the project and their lack of professionalism.

Furthermore, the literature highlights the significance and advantages of having an information system that can be accessed by all relevant stakeholders. However, it is insufficient for achieving efficient communication and coordination. The interviewees underlined that the scope of the project resulted in coordination gaps between teams due to the involvement of multiple stakeholders. Additionally, they noted that the lack of professionalism across the teams rendered the information system inefficient. In line with the discussion on the organizational structure, and in reference to the project manager's statement, it is crucial to have a project team that is capable of effectively planning and managing the intricacies of the MCP. However, it should be noted that the mere presence of such a team is not sufficient for ensuring project success. Additionally, the devotion of team members, as well as their attitude towards one another and the projects, is crucial.

Hence, project managers ought to tackle this matter by conducting professional awareness workshops, deliberating on the significance of professionalism in managing tasks, and its correlation with the ultimate result of the project.

Chapter 6

6. Conclusion

A brief synopsis of the author's research is given in this portion of the master's thesis. This paragraph defines the limits and constraints of the research along with suggestions for further research initiatives. The critical success factors and effective project management techniques of MCPs in underdeveloped countries are the subject of very little research. In order to validate the chosen MCPs and ascertain their effectiveness, the literature starts with the establishment of standard project success criteria. This criterion assesses the accomplishment of the following objectives: social and environmental (community expectations), commercial (owner expectations), and project (cost, schedule, and scope) objectives (Rolstadas et al., 2014). Considering the significant influence that MCP implementation has on all parties involved, including clients and end users, the study incorporates all three indicators of project success. Project management techniques are well known in the literature to be important elements that affect a project's global performance.

These strategies guide the MCPs towards achieving project success, while efficiently reducing potential risks. Developed nations have made significant progress in adopting contemporary project management methodologies in multi-country projects (MCPs). However, MCPs in underdeveloped nations have not yet effectively pursued those measures. The lack of success in achieving targeted outcomes is primarily attributed to the majority of MCPs in poor nations. Moreover, emerging nations face a distinct array of obstacles that intensify the want for appropriate project management methodologies. This thesis aims to investigate the effective project management methodologies used in the establishment of successful MCPs in developing nations, employing important success factors.

The study provides insights into the efficient project management strategies for MCPs in emerging nations. Furthermore, Upon doing an unbiased comparison of the case studies, it was found that the successful implementation of MCPs in developing nations is possible when all the EPMAs are effectively implemented, as evidenced in Case C. This will enable practitioners to explore additional critical success factors (CSFs) that were not addressed in the existing literature. These factors would provide extra support in effectively guiding the multi-country projects (MCPs) to successful completion in developing nations. Furthermore, the thesis would facilitate the comparison of EPMAs in different under developed countries by utilizing a conceptual critical variable model to identify key features in construction projects.

The alignment of the critical success factors (CSFs) and environmental performance measurement attributes (EPMAs) established for marine conservation projects (MCPs) in Norway with those discovered in the literature review will enhance the significance of the study. Furthermore,

generating new sets of Critical Success Factors (CSFs) and External Project Management Assessments (EPMAs) for Multiple Component Projects (MCPs) Within this particular context, the utilization of this approach will empower professionals to enhance the efficiency and effectiveness of their current projects.

6.1. Study boundaries

There are numerous theoretical and methodological boundaries that can be applied to the research. Every restriction that was present in this investigation will be covered in this section. The study's primary theoretical focus is on megaprojects, namely megabuilding projects. As a result, MCPs will be used in the findings and literature.

The second distinction relates to the particular conditions, particularly in developing nations, in which these massive undertakings are being carried out. The authors were interested in learning about successful project management techniques utilized in developing country MCPs because they are from developing countries, namely Pakistan and Lebanon. Finding extra Critical Success Factors (CSFs) that are especially pertinent to the Managed Care Programs (MCPs) in that particular context is also crucial. This is crucial since developing nations rely on these programs to meet their needs in terms of housing, education, the environment, infrastructure, and economics, among other benefits.

The emphasis on MCP, rather than megaprojects in general, is justified by the fact that the construction sector in underdeveloped nations represents approximately 80% of the overall capital assets, 10% of their Gross Domestic Product, and more than 50% of the wealth allocated to fixed assets (Jakale, 2004). In addition, the building industry offers substantial employment prospects, ranking only below agriculture (Ofori, 2006). Furthermore, the authors has a background in architecture and have prior expertise in the building business specifically in poor nations. The third constraint concerns the criteria used to evaluate the project's success. Project success can be assessed by considering many sets of targets, such as the goal of the project, business goals, and social and environmental goals. Multiple authors, including Wit (1998) and Cooke-Davies (2001), have clearly differentiated between project successThe evaluation of a project's success is determined by its overall goal and business objectives, whereas project management success is measured using traditional performance measures such as time, cost, and scope., also known as the 'Iron Triangle' or project objectives. The thesis aims to discover effective project management practices used in successful MCPs in developing nations. The main criterion for success will be the capacity to complete the megaproject within the specified timeframe and financial limits. and within the defined scope. Nevertheless, the selection of successful MCPs for the case study took into account not just their influence on communities and governments, but also their alignment with economic aims and social and environmental goals, given the significant magnitude of MCPs. From a methodological standpoint, three highly effective Microcredit Programs (MCPs) were

chosen in developing countries for the purpose of gathering and analyzing data. According to Flybjerg (2014), it is simpler to compile a list of global projects that have failed due to cost and time overruns and a lack of expected benefits, compared to creating a list of successful projects. This task becomes even more difficult when focusing solely on developing countries, as the challenges and complications encountered in these countries are more pronounced than those in wealthy nations. Thus, in order to fulfil the thesis's objective, the chosen MCPs must have accomplished at least one success criterion related to project objectives, such as cost, time, or scope, as well as one success measurement pertaining to Corporate goals encompass both business aims and social and environmental purposes.

6.2 Constraints of the Study

This section delineates the constraints encountered by the writers over the duration of the investigation. Multiple relevant factors impacted the data extraction method and influenced the study's outcome.

The thesis was initially designed to concentrate the research on MCPs in developed nations, particularly in Norway. This choice was further substantiated by the literature, which revealed a scarcity of research on project management approaches in developed countries. Due to the limited sample size, the conclusions of the thesis were challenging to generalize to a larger population. Our initial goal was to conduct a minimum of three to five case studies of MCPs in industrialized nations in order to reach a generalizable conclusion. Nevertheless, the constraints of limited time, the absence of project managers, and the challenges in connecting with project managers involved in projects above \$100 million compelled us to select only one case study as our research sample. In addition, we reached out to multiple project managers of MCPs in India to expand our sample. However, due to the lack of enthusiasm from the responders I could only carry out case studies in Norway and not in any other country. As a result, it impacted the extent to which the study's conclusions can be generalized to other emergent situations.

Moreover, the participants selected for the questionnaire were employees of Sotra link. This could potentially result in the inclusion of bias on their part, as they may choose to conceal specific information that they believe will tarnish their company or initiative. Nevertheless, this obstacle was surmounted by cross-referencing the data obtained from other sources.

6.3 Suggestions for Future Research

The following section provides a collection of upcoming research studies on Critical Success Factors (CSFs), Enterprise Project Management Applications (EPMAs), and Multi-Cloud Platforms (MCPs). The correlation between the organizational culture and managerial performance of MCPs. The results suggested that the project organization's organizational culture had a positive impact on the performance of two out of the three selected MCPs. Nevertheless, the writers of the thesis were unable to provide additional information on this topic due to time constraints. Organizations should explicitly address the principles and practices they have established, including the act of initiating a project without a risk mitigation plan. Additional research could examine various facets of the corporate culture inside project organizations in developing countries and assess its influence on the performance of MCPs. Choosing an additional context in an underdeveloped country

Due to time constraints, the writers of the thesis were unable to carry out case studies in countries other than Norway. The difficulty in locating effective Mobile Cellular Providers (MCPs) in developing nations stemmed from the reluctance of respondents to disclose information, primarily due to the fact that MCPs typically cater to government clientele. Future study will validate the findings of this thesis and maybe reveal additional Project Management Approaches (PMAs) and Critical Success Factors (CSFs) that are applicable to developing nations, which have not yet been addressed.

Alternative research approaches for data collection due to time constraints, I settled for only one scenario. The study entailed gathering data from project documentation and conducting interviews with project managers who were actively engaged in the initiation and conclusion of the chosen MCPs. Further research should focus on conducting interviews with a greater number of managers who were involved in the development of the MCP. This will enable a more diverse set of viewpoints on the crucial elements that determine success (CSFs) and the anticipated benefits in project management (EPMAs) related to the MCP.

Furthermore, employ a survey methodology to gather data. on the crucial variables that have led to the successful adoption of MCPs in developed nations, including critical success factors (CSFs) and enterprise project management approaches (EPMAs) employed by organizations.

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