Project Management Approaches in Mega Construction Projects in Developing Countries:

Cases from Pakistan

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Abstract

Purpose – The purpose of this paper was to explore, using Critical Success Factors, project management approaches in successful Mega Construction Projects in developing countries.

Design/methodology/approach – The research was based on case study inquiry strategy comprising of three case studies, which incorporated interviews with project managers of the respective mega construction projects.

Findings – Two major findings were identified. Firstly, the project management approaches that contribute to the success of Mega Construction Projects in developing countries are similar to those outlined in the literature, including; Clear project objectives, Senior management support, Stakeholders involvement and consultation, and Competent Project Team. Secondly, more specific project management approaches and Critical Success Factors within the context of developing countries were identified from the findings of the thesis, including; outsourcing and collaboration, organizational culture, and the attitude of local stakeholders.

Research Delimitations – The research was limited to mega construction projects in developing countries, and successful Mega Construction Projects achieving at least one of three overall objectives; project objectives, business objectives, and social and environmental objectives.

Theoretical and Practical Implications – The study provided insight on effective project management approaches for Mega Construction Projects in developing countries. This would allow practitioners to get an insight on the Critical Success Factors which drives the Mega Construction Projects towards successful completion in developing countries. Moreover, the thesis would also support them in cross comparing Effective Project Management Approaches in different developing regions. Besides that, the generation of new sets of Critical Success Factors had contributed to the theoretical aspects of the study.

Keywords – Critical Success Factors, Project Management Approaches, Mega Construction Projects, Developing Countries

Paper Type – Master Thesis
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List of Abbreviations

The following table describes the various abbreviations and acronyms used throughout this thesis, along with the page numbers on which they were first introduced.

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<th>Abbreviation</th>
<th>Meaning</th>
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<tbody>
<tr>
<td>MCPs</td>
<td>Mega Construction Projects</td>
<td>1</td>
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<tr>
<td>MCP</td>
<td>Mega Construction Project</td>
<td>1</td>
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<tr>
<td>CSFs</td>
<td>Critical Success Factors</td>
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<td>PMAs</td>
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<td>EPMAs</td>
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<tr>
<td>PMBOK</td>
<td>Project Management Body of Knowledge</td>
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</tr>
<tr>
<td>PMI</td>
<td>Project Management Institute</td>
<td>5</td>
</tr>
<tr>
<td>GNI</td>
<td>Gross National Income</td>
<td>7</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
<td>7</td>
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<tr>
<td>ODA</td>
<td>Official Development Aid</td>
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<td>ATC</td>
<td>Air Traffic Control</td>
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<td>CAA</td>
<td>Civil Aviation Authority</td>
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<td>SEPCO 3</td>
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</tr>
<tr>
<td>SOPs</td>
<td>Standard Operating Procedures</td>
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The following table states the Mega Construction Projects selected for this study:

<table>
<thead>
<tr>
<th>Projects</th>
<th>Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case A</td>
<td>Islamabad International Airport</td>
<td>Islamabad, Pakistan</td>
</tr>
<tr>
<td>Case B</td>
<td>Bahria Icon Tower</td>
<td>Karachi, Pakistan</td>
</tr>
<tr>
<td>Case C</td>
<td>Bin Qasim Power Plant</td>
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Project Management Approaches in Mega Construction Projects in Developing Countries: Cases from Pakistan

1 Introduction

1.1 Background of the study

Mega construction projects (MCPs) such as, London Crossrail Project in London, Al Maktoum Airport in Dubai, and Beijing Airport in China will result in failure if ineffective project management approaches and methodologies are implemented for their development (Nguyen, 2007). Evidence of failures exists worldwide, where 9 out of 10 projects suffer from cost and time overruns (Flyvbjerg, Holm, and Buhl, 2004).

Moreover, MCPs failure is particularly severe in developing countries. While projects in general face complexities and challenges regarding execution and success, megaprojects development is a riskier process due to its long planning procedure and complex interfaces (Flyvbjerg, 2006). The development of megaprojects requires high technical and design skills, professional human resources, and large-scale investments (Sturup, 2009). Although developing countries rely on MCPs to achieve economic, social, and environmental objectives, they suffer from a shortage of the required skills and competencies (Othman 2013), lack of funding (Georgieva, 2012), and poor project management implementation (Hussein and Karimin, 2006). Such challenges in MCP management will influence the overall value and success of projects in developing countries. Nonetheless, MCPs are constantly growing in numbers and value (Flyvbjerg, 2014). According to the McKinsey Global Institute (2013), around USS 3.4 trillion will be spent on global infrastructure annually between 2013 and 2030. Moreover, The Economist (2008) estimated that $2.2 trillion would be invested by developing countries in infrastructure projects from 2009-2018. Therefore, in order to ensure success of MCPs, which is essential for the development of the recipient countries, an enriched understanding of critical factors that contribute to project success is necessary.

However, there is a disagreement and ambiguity on the understanding of project success, and success cannot be generic for all projects and could be measured according to different sets of objectives (Rolstadas et al., 2008). These objectives include:

- Project objectives (scope, cost, time also knows as the iron triangle)
- Business objectives (owner’s expectation)
- Social and environmental objectives (local community’s expectation)

Fulfilling project objectives is perceived as project management success, however fulfilling business, and social and environmental objectives for numerous stakeholders involved is perceived as project success (Rolstadas et al., 2014). In practice, megaprojects frequently fail in the view of the ‘iron triangle’ criteria of project management, of delivering the project in the constraints of time, budget and scope (Flyvbjerg et al., 2003), with few exceptions such as the empire state building (Jacobsson & Wilson, 2018). Flyvbjerg (2014), for instance, states that megaprojects may be considered as...
technological success, yet a financial failure. A further example, does the Sydney Opera House falls under the failed projects category or successful projects category? From a project point of view, the project team failed to deliver its objectives in meeting deadlines and went over budget, however from a business, social and environmental point of view, the opera house added great value to the city and benefited the community (Reichold and Graf, 2004).

Indeed, scholars have continuously strived to identify Critical Success Factors (CSFs) to improve the performance of megaprojects, because of what they hold of economic, political and social significance in communities (eg. Lewis and Jens, 1987; Bastani, 1988; Andersen et al., 2002; Fortune and White, 2006; Tabish and Jha, 2011; Ofori, 2013). Identified CSF are presented to be rather generic for all projects and contexts, and quite evident for competent project managers (Rolstadas et al., 2014).

In order to deal with challenges imposed on Mega Construction Projects (MCPs) in developing nations, countries such as Vietnam, have been recognizing the important role of project management necessary for successful project implementation (Nguyen, 2007). Furthermore, project management approaches changes with respect to the challenges posed by specific projects, and internal and external environments. Hence, the starting point that there is no standard project management approach of dealing with context, and they change with aspect to the different challenges imposed on megaprojects (Rolstadas et al., 2014). This thesis focus on project management approaches adopted in successful MCPs in developing countries using Critical Success Factors. This will further be elaborated later in this section.

The focus of the thesis is on MCPs success in developing countries using CSFs, measured against project objectives, business objectives, and social and environmental objectives. Therefore, the authors of the thesis select MCPs case studies based on the above mentioned success criteria.

It has been mentioned that local communities rely on MCPs to fulfill their social and environmental needs and requirements, therefore taking them into consideration is crucial to understand MCP success. Moreover, due to the unpredictability of the environment where MCPs are taking place in developing countries, economic crisis and political instability could affect the performance of the MCP development, and result in cost overruns, that the project management team could be fully unaware of. Although not all the project objectives are achieved, the client could still be satisfied with the outcome of the project. Therefore, meeting business objectives of a MCP should be taken into consideration as a success criterion.

Brockmann and Girmscheid, (2007) state that MCPs is a new research area in the construction and megaprojects literature. Furthermore, many research areas in megaproject management remain highly unexplored such as challenges facing megaprojects delivery in developing countries (Othaman, 2013). Developing countries are faced with numerous MCP management challenges. Essentially, there is a shortage of empirical studies on the project management approaches implemented in successful MCPs in developing countries, thus leaving limited records on the best approaches within that context.

Developing countries lack the necessary project management skills (Hussein and Karimin, 2006), where according to Procaccini, et al. (2012) inappropriate implementation of project management approaches are being adopted. Adopting effective project management approaches could enhance their performance during MCPs planning...
and execution. Transferring modern and effective project management approaches from developed countries face numerous challenges (Nguyen, 2007), however adopting project management approaches from successfully delivered MCPs in developing countries that fall under similar contexts, could be less challenging to achieve.

Research studies about exploring Effective Project Management Approaches (EPMAs) implemented in MCPs in developing countries, such as this thesis, are rare as not enough research studies have been done in the past to explore approaches adopted in MCPs in developed countries, and have a higher chance of contributing towards the existing knowledge. To sum up, understanding of effective project management approaches through identification of CSFs would improve the quality of project management, and we believe will contribute to project success.

1.2 Research objectives

Based on the background of the study, the main research question is as follows:

*Using CSFs, what are the project management approaches adopted in successful MCPs in developing countries?*

Due to the myriad of complexities facing the management and development of MCPs in developing countries, the general purpose of this thesis is to explore, using CSFs, project management approaches in successful MCPs in developing countries. The study is based on a fusion of CSFs and PMA related literature, as well as, an adapted conceptual model underpinned by Gudiene et al., (2013) on CSFs for construction projects. Gudiene et al., (2013) model has been chosen as it takes into account CSFs relevant to those outlined in the literature, as well as the fact that its purpose contributes to the purpose of this study.

Based on that, the specific objectives of this study are:

- To identify effective project management approaches adopted in successful MCPs in developing countries.
- To identify CSFs that are specific to MCPs within the context of developing countries, outside those outlined in the literature.

To achieve the objectives, the authors of this thesis have to undertake a study on three different MCPs successfully executed within the contexts of developing countries. The thesis is intended to assist the project management in future or in on-going MCPs development within similar contexts, moreover, for the academics and scholars researching topics related to PMAs and CSFs in MCPs in developing countries. In addition, it would provide insight on project management approaches in developing countries, and they could further build on that research in future to bring light on effective managerial approaches to different MCPs in developing countries.
2 Literature Review

2.1 An Overview on Projects, Megaprojects, and Project management

2.1.1 Projects

By definition, a project is a unique, temporary endeavor with a specific set of goals and objectives which should be achieved within the scheduled time, cost and scope, requiring the deployment of various stakeholders and organizations, lasting only the duration of the project (Wickesberg & Cronin, 1962). Al- Thani (2008), elaborates that a project is a particular investment of resources to achieve a specific set of objectives, by creating a product or a service, to serve to the community or to yield benefits.

According to the PMBOK, (2013);

‘Examples of projects include, but are not limited to:

- Developing a new product, service, or result;
- Effecting a change in the structure, processes, staffing, or style of an organization;
- Developing or acquiring a new or modified information system (hardware or software);
- Conducting a research effort whose outcome will be aptly recorded;
- Constructing a building, industrial plant, or infrastructure; or
- Implementing, improving, or enhancing existing business process and procedures’.

2.1.2 Project Management

According to practitioners, project management is ‘the application of knowledge, skills, tools, and techniques to project activities to meet the project requirement’ (PMBOK, 2013). Project management is achieved through the applicable implementation and integration of project management processes, classified under initiating, planning, executing, monitoring and controlling, and closing (PMBOK, 2013).

According to the PMBOK, (2013);

‘Managing a project typically includes, but is not limited to:

- Identifying requirement;
- Addressing the various needs, concerns, and expectation of the stakeholders in planning and executing the project;
- Setting up, maintaining, and carrying out communications among stakeholders that are active, effective, and collaborative in nature;
- Managing stakeholders towards meeting projects requirement and creating project deliverables;
- Balancing the competing project constraints, which include, but are not limited to:
  1- Scope,
  2- Quality,
  3- Schedule,'
4- Budget,  
5- Resources, and  
6- Risks  

The specified project characteristics and circumstances can influence the constraints on which the project management team needs to focus.’

A crucial significant player in projects is the project manager, who is central to the process of project management (Ofori, 2013). The project manager should require a specific set of project management skills, in planning, organizing, managing, and controlling and monitoring of resources and further motivate all associated parties to ensure project success, and to achieve the project objectives within the constraints of time, cost, scope (PMI, 1996). Moreover, Pinkerton (2003), indicates that to ensure the success of a project, project management merges project teams’ capabilities and competencies, enabling them to achieve the project objectives.

2.1.3 Megaprojects

According to Flyvbjerg (2014), megaprojects are an entirely different type of projects regarding their level of cost, stakeholders' involvement, complex boundaries, and long planning procedure, making their development a far riskier process. According to Flyvbjerg (2014), Dr. Patrick O'Connell, a practitioner director of Major Programme Management at Oxford University's Said Business School, states that 'if managers of conventional projects need the equivalent of a driver’s license to do what they do, then managers of megaprojects need the equivalent of a pilot’s jumbo jet license’. Flyvbjerg (2014) argues that governments shouldn’t depend on traditional project managers to manage megaprojects.

Flyvbjerg (2014) mentions that megaprojects usually cost $1 billion or more. However, the cost should not be a restraint for defining megaprojects. Warrack (1985) argues that projects with a smaller budget such as $100 million, could adopt a relative approach depending on the contexts. Fiori & Kovaka (2005) define megaprojects using five factors; excessive cost, high complexity, high risk, lofty principles and high visibility.

2.2 Drivers for Megaprojects’ Development

Megaprojects are vital drivers of economic growth. According to Hamdy (2010), MCPs are increasing in popularity within national and local governments. Capka (2004) mentions that MCPs are becoming more popular, because of their ability to attract political and public attention due to their significant cost, impact on the community and the environment. Governments perceive MCPs as a mean to achieve their sustainable development objectives (Othman, 2013). Global urbanization in the last couple of decades has fastened the investment in MCPs. According to World Bank (2010), in the last two decades, the population expanded at the rate of 2.2%. This growth increased demands for infrastructural, educational, medical, cultural and residential projects, such as; large-scale signature architecture, housing complexes, hospitals, airports, and wind farms (Flyvbjerg, 2014). Their implementation brings significant benefits and services to various industries within the country, including contractors, consultants, bankers, lawyers, and developers (Flyvbjerg, 2014).

Flyvbjerg (2014) proposed that this economic significance alongside with political, technological, and aesthetical are critical drivers for Megaproject development. Due to its extensive cost, and impact on the public, economy, and environment, megaprojects cause
a lot of media attention, which is appealing to politicians who usually seek it to help them get re-elected (Flyvbjerg, 2014). Furthermore, Capka (2004) states that megaprojects attract public and political attention due to their substantial impacts on communities, environment, and budgets. On a technological level, megaprojects with their numerous opportunities, allow engineers and technologists to push the boundary for what technology is capable of, such as the development of the longest bridge or the tallest building (Frick, 2008). On an aesthetic level, megaprojects also allow architects and designers to push the boundary in creating iconic monuments appealing to them and to the people and creating landmarks such as the Sydney Opera House (Flyvbjerg, 2014).

2.3 Performance of MCPs

When the four critical drivers for megaprojects development introduced by Flyvbjerg (2014) are being taken into consideration, significant characteristics of megaprojects are being overlooked. Glossing over the four key drivers has resulted in weak performance records regarding cost and benefits.

Flyvbjerg (2011) introduced ‘the iron law of Megaprojects’, Over budget, over time, over and over again, arguing that megaprojects are destined to fail in the light of ‘the iron triangle’ criteria; time, budget and scope. According to Flyvbjerg, Holm, and Buhl (2005), nine out of ten projects struggle from cost and time overruns.

The following characteristics are significant for megaproject development, however, are being overlooked and overshadowed by the four key drivers:

1- Megaprojects development is a risky process due to its long planning procedure and complex interfaces (Flyvbjerg, 2006).
2- Strong internal project management and leadership capabilities (Hamdy, 2010).
3- Project scope and ambitions will eventually change over time (Flyvbjerg, 2014).
4- Proper problem analysis to decide whether the proposed project is needed (Priemus, 2010).
5- Decision making, planning, and management are multi-actors involving stakeholders, both public and private, with conflicting interests (Aaltonen & Kujala, 2010).
6- Underestimating costs and overestimating benefits will result in cost and time overruns, and benefit shortfalls (Flyvbjerg, 2014).

Underestimation of cost and time is a method implemented by numerous megaprojects promoters and planners, with the belief that MCP development can only be initiated through this technique which is known as the Hiding Hand or the Creative Error. This problem however doesn’t only occur in developing countries, developed countries had their share of this unethical conduct. Such method leads to various problems, the two major problems that could arise are; developing a MCP that is economical and financially not feasible, or initiating a MCP instead of another MCP which could meet higher returns due to miscalculations (Flyvbjerg, 2014). Hirschman (1967) believes that if people knew the total cost of large projects in advance, these projects would never take place, this could be solved by hiding true costs, known, as ‘the principle of the Hiding Hand’. Furthermore, Sawyer (1953) argues that a similar work that he identified as ‘creative error’, miscalculating actual costs and benefits of projects in early stages, was vital for the development of several large projects. This will lead to the implementation of projects which are represented the best and look better on paper, with underestimated costs and overestimated benefits, and not the
projects that fit best. These projects will encounter numerous complexities and problems during execution regarding delays, costs overruns, and benefit shortfalls (Flyvbjerg, 2014).

2.4 MCPs and Project Management in Developing Countries

2.4.1 MCPs in Developing Countries

Developing countries and developed countries classification is based on various criteria such as the economic growth of the country, the education and training facilities, political stability, healthcare, and culture (Othman, 2013). Furthermore, World Bank, (2010), classified countries according to four economic groups based on their income and Gross National Income per capita:

Table.1 Economic groups based on income and gross national income per capita (World Bank, 2010)

<table>
<thead>
<tr>
<th>Gross National Income per capita</th>
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<tbody>
<tr>
<td>Low income countries GNI ≤ $US 1,025 per capita</td>
<td>Developing Countries</td>
</tr>
<tr>
<td>Lower middle income countries GNI = $US 1,026 - $US 4,035 per capita</td>
<td></td>
</tr>
<tr>
<td>Upper middle income countries GNI = $US 4,036 - $US 12,475 per capita</td>
<td></td>
</tr>
<tr>
<td>High-income countries GNI = $US 12,476 and above per capita</td>
<td>Developed Countries</td>
</tr>
</tbody>
</table>

The role of MCPs became more significant in developing countries where 80% of the total capital asset is accounted for significant construction activities which are 10% of their GDP (gross domestic product), and over 50% of the wealth invested in capital (Jekale, 2004). The studies further show that globally construction industry adds about 10% of the employment of all working population. The Economist (2008) estimated that $2.2 trillion would be invested by developing countries in infrastructure projects from 2009-2018.

Despite MCPs’ essential role in achieving developing countries’ social and economic sustainable development objectives, through major development projects such as infrastructural, residential, medical, educational, and cultural projects, where societies fulfill their needs and requirements (Othman, 2013), the performance remains poor. On the one hand, MCPs require a set of managerial and technical skills, highly qualified staff members, and large-scale investment (Sturup, 2009). On the other hand, developing countries lack the essential skills, competencies, and finance that challenges the development of these projects, and prevents nations from developing and progressing to a whole new level (Othman, 2013).
Developing countries occupies 85.4% of the world’s population (Human Development Report, 2011), and Flyvbjerg, Holm, and Buhl, 2004 mentioned that 9 out of 10 projects worldwide suffer for time and cost overruns leading to project failure. The adverse outcome causes a severe impact on local communities, especially in developing countries, demanding the development of educational, infrastructural, residential, medical, and cultural projects to fulfill their needs and requirement (Zeybek and Kaynak, 2008). Furthermore, MCPs are often funded by governments or public sector organizations such as the Official Development Aid (ODA) and the World Bank (WB) (Nguyen, 2007). Therefore, cost overruns have a more severe impact and could lead to the termination of the project where governments struggle from a ‘lack of financial resources, cost control, and venture capital’ (Georgieva, 2012), and donors are losing confidence due to the bad implementation of megaprojects (Nguyen, 2007).

In order to mitigate time and cost overruns, and to prevent project termination, it is crucial to understand project and project management success criteria. It has been mentioned that project success can be measured in terms of business objectives achieved (the owner's expectation), and social and environmental objectives achieved (the community's expectation). This paper will focus on the project organization and the management of the project regarding cost, time, and budget, which is critical for project management success, and on the business and social and environmental objectives regarding clients and local communities’ satisfaction which has been shown to be crucial for the development and survival of MCPs.

2.4.2 MCPs Challenges in Developing Countries

According to Jekale, (2004) and Abbasi & Al-Mharmah, (2000), MCPs in developing countries have been facing complex circumstances. Many projects are ending up being terminated, halted, and unsustainable (Sonuga, Aliboh, & Oloke, 2002) and (Andersen, 2008). Nigeria as an example has incurred an estimated loss of around US 12.65 billion for abandoned projects and now require twice the funds for their completion (Alutu & Udjawuwe, 2009). Ethical conduct such as corruption has become a menace complicating project management in these countries (Sonuga, Aliboh, & Oloke, 2002) and (Andersen, 2008). Likewise, Garzia-Borza, (1980) states that $40 billion has been yearly invested in developing countries, but the projects have failed in most of the world. Alone Sub-Saharan Africa had 54% of failed projects which were sponsored by World Bank during 1979 to 1983 (Kapur, 1984).

The characteristics and complexities of the construction industry and projects in developing countries are entirely different from the context of developed countries. According to Cusworth & Franks, (1993), Voropajev, (1998), and Jekale, (2004), the type and the context of the projects in which they are executed in the developing countries is different to that of developed countries which is the origin of the development of project management. Each project has its specific dynamics which is initiated and executed locally with the respective adaptation to the context, even if a widely accepted standard exists. Pilkaite & Chmieliuskas, (2015) points out that the dynamics of the project; its location, purpose, sponsor, stakeholders, timings, each has an essential impact on the project management approaches to be adopted. Although MCPs mostly function under a highly sophisticated and complicated context, the projects in developing countries face more unpredictability, instability and poor ethical conduct, due to numerous challenges.

Othman, (2013) classified these challenges under four categories; engineering challenges, human development challenges, managerial and political challenges, and sustainability
challenges. On an engineering level, Georgieva, (2012), and Kerzner, (2006) argue that lack of qualified scientific and technical practitioners and wrong decisions prevent the execution of MCPs in developing countries. On a human development level, there is a shortage of skilled staff who are up for critical roles, due to poor professional and quality training and education (Georgieva, 2012). On a managerial and political level, Al-Maghraby, (2012), and Georgieva, (2012) state that MCPs in developing countries are suffering from bureaucracy and corruption practices. Moreover, Hussein and Karimin, (2006) argue that MCPs lack efficient project management processes. Furthermore, political discontinuity is a significant challenge influencing the outcome of MCPs worldwide. According to Priemus, (2010), MCPs implementation last more than the lifespan of governments, and this change of governments (especially change of coalition party) could lead to the obstruction of objectives and changes in scope. On a sustainability level, Georgieva, (2012) states that MCPs in developing countries suffer from a ‘lack of financial resources, cost control, and venture capital’. These challenges cause numerous problems and pitfalls for the management and execution of these MCPs.

Hence, project management processes which are rigid in nature such as management of risk, contract, scope, communication, procurement are more significant in the cost of developing countries rather than in the context of developed countries (Voropajev, 1998). Therefore, it makes more challenging and complex for a project manager working in a developing country as compared to those working in developed countries (Cusworth & Franks, 1993) and (Jekale, 2004).

External complexity is one major obstacle in dealing with MCPs in developing countries which arises due to contextual uncertainties (Shehu and Akintoye, 2010). China, India, and Russia which are regarded as the fastest growing markets in MCPs, face a higher level of uncertainty regarding social and cultural issues. This degree of uncertainty makes it difficult in managing megaprojects, including temporal complexity (Remington and Pollack, 2007) and, social and cultural complexity (Brockmann and Girmscheid, 2007). Complexities and uncertainties have a direct impact on stakeholder management, project planning, monitoring, risk analysis, and management. This complexity impacts relevant topics, such as organization and stakeholder management, project planning and procurement, project monitoring and control, and risk analysis and management (Murithi & Crawford, 2003) and (Cusworth & Franks, 1993). In general, these complexities comprise of government regulations, lack of financial resources, withdrawal of donors due to political conflict, shortage of foreign exchange, contract conditions, political agendas, inflation, socio-cultural conditions, lack of interest by the end users and community, corruption, and occurrence of calamities such as war and draughts (Idoko, 2008), (Jekale, 2004), (Andersen, 2008).

2.4.3 Project Management in Developing Countries

Project management is a relatively new practice implemented in MCPs to achieve their objectives within the constraints of time and cost through an effective use of resources. The implementation of project management concepts is an ideal tool for planning, organizing, managing, and controlling of work, which will influence project performance. However, it is still in its early phase of development in developing countries (Abbasi and Al-Mharmah, 2000). And due to numerous complexities facing developing countries, such as the socio-cultural conditions, political agendas, and financial resources, strategic project management should be implemented taking into consideration all these factors relative to the specific context (Abbasi and Al-Mharmah, 2000).
Project management implementation has increased in developing countries, as a tool to achieve not only business objectives, but also economic development agenda. In Ghana, MCPs significantly rely on the use of project management as a tool to increase the rate of success (Ofori, 2013). According to Chatfield, (2007) project management is the practice of planning, organizing, managing resources in order to successfully achieve project objectives. However, project management in developing countries is failing to meet the expected objectives and is faced with numerous problems, both technical and non-technical (Ofori, 2013).

2.5 Project Management Approaches - Critical Success Factors

Morris, (1986) believes that it is the effect of complexity, uncertainty, and risks on the managerial requirements of mega projects which influence project success. According to Cleland, (1985) successful megaproject management is characterized by:

1- The presence of strategic project management and effective leadership by the project organization, with a precise definition of project objectives.
2- Utility of project management practices and methodologies for applying strategy and management philosophy, through effective planning, organizing, and control of resources.

However, in developing countries, MCPs lack efficient project management processes (Hussein and Karimin, 2006). This challenges the success of the implementation of MCPs at each phase of their developments, from initiation to closure (Bastani, 1988).

2.5.1 Project Success and Project Success Criteria

Project success definition is another challenge in comprehending project management and subsequently evaluating its performance that holds a certain amount of ambiguity and disagreement. Shenhar et al., (2001) argues that various researchers on project success based studies perceive project success differently.

According to Pinto and Slevin, (1988), project success is not only delivering projects within the constraints of time, budget, and scope, rather it involves the satisfaction of associated stakeholders, such as client satisfaction. Cooke-Davies, (2001) argues that client satisfaction with the final outcome has a crucial impact on the perceived project success or failure. According to Rolstadas, (2014) the Boston Big Dig is one the most expensive infrastructure MCPs in the United States that suffered from a 190% of cost overruns, years of time overruns, design errors and corruption. However, it has met the social and environmental objectives of improving the traffic flow and also influenced a growth in property value.

As reinforced by de Wit, (1988) and Cooke-Davies, (2002), Rolstadas, (2008) list three different sets of objectives for success measurement:

- Project objectives (the iron triangle of scope, time, and scope)
- Business objectives (owner’s expectation)
- Social and environmental objectives (local community’s expectation)

The mentioned authors made a clear distinguishing between the three main objectives, where achieving the project objectives is perceived as project management success, and achieving the business, and social and environmental objectives are perceived as project success.
However, Pinto and Slevin (1987), argues that there shouldn’t be any distinguishing between project success and project management success, but project management success should be perceived as a contributor to project success.

Therefore, it is crucial to determine the success criteria taking into considerations all stakeholders involved, such as the project management team, project managers, client, contractors, and end-user, who have different expectations from the final outcome of the realization of the MCPS, and who perceive project success differently.

2.5.2 Critical Success Factor

Bullen and Rockart, (1981) state that CSFs are the limited vital areas where pleasing results will ensure competitive advantages for the project team and organizations. Moreover, Milosevic and Patanakul, (2005) add that from a project management point of view, CSFs are categorized as variables that if managed efficiently, can influence the success of a project. Previous attempts were made in order to integrate CSFs classifications and frameworks with project success criteria. Belassi and Tukel, (1996) developed a framework taking into consideration not only the project manager and the project organization as previous framework did, but also the project and the project team members, as well as, the external factors. This framework tends be rather generic for all industries and not industry focused.

An interesting more industry focused conceptual framework is developed by Gudiene et al., (2013). The conceptual critical success factor model takes into account all relevant factors in the construction projects; project related factors, project management team related factors, project managers related factors, client related factors, contractor related factors, as well as the external factors, such as the economic, social, technological, legal, political, and cultural environment.

Fortune and White, (2006) identified CSFs across 63 publications, which are believed to be the set of the most EPMAs that contribute to project success. That includes, Senior Management Support (the provision of the essential resources and consultancy for the success of the project) and Clarity of Project Management Objectives (clarity of project objectives and direction in the early stages, and during scope changes if existing), Client Involvement and Consultation (consultation and understanding of stakeholders needs and demands), Communication, coordination, and commitment (effective communication and availability of an information system accessible by all key players which facilitates communication and coordination and improve project planning which is critical for effective control). Researchers, such as Cleland, (1985) and Gareis, (2006) and Cooke-Davies (2001), have coincided that these approaches will surely influence successful project management (Rolstadas, et al., 2014).

2.5.3 Effective Project Management Approaches

The table below list the most cited CSFs across publications that the authors of this thesis came across. The generated list of CSFs takes into consideration all project success criteria and are believed to contribute to effective project management approaches.
Table 2. Summary of literature reviews on most cited Critical Success Factors.

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Project organization structure</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Adequate Planning</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Clear project objectives</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Communication, coordination, and commitment</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Resource Allocation</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Senior management support</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Stakeholders Involvement and Consultation</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Authority and leadership of Project Manager</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Competent Project Team</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

**Project Organization Structure**

The structuring of a project organization which sets the tasks, responsibilities, and authorities of the project team, as well as the communication and coordination between parties involved, is vital for an efficient project management system.

In the preliminary phases of the MCP development, the project manager centralizes the organization to adjust communications and responsibilities. As commitment of staff members to the project is being established, the project manager will continuously evaluate project team and management plan. When successful implementation of the plan is being achieved, and the project manager is satisfied with the progress, he will then decentralize, transferring responsibilities to managers and various locations. This approach can be adopted until completion of the project.

In developing countries, a poor organization structure due to the lack of managerial and technical skills, and numerous stakeholder involvement, as well as the provision of unclear and vague objectives, lead to ambiguous and confusing set of responsibilities and authorities of parties involved. Decision making will land only in the hand of few senior managers. The senior managers or top executives usually form committees responsible for decision making. However, communication and interaction between these committees and project members involved are often vague with little authority and responsibility leading to slow decision-making processes.

**Adequate Planning**

Overcoming challenges and mitigating risks during MCP development is most effective through sufficient planning. Researchers have confirmed that adequate planning is directly related to project success. The more uncertainties and complexities the project is facing, the more the sufficient and adequate planning of the project is needed. All relative
information are needed for this approach, as well as that it can be resources and time consuming.

Due to the high political influence in developing countries, and to the fact that the clients and funders of MCPs are usually governments, the megaproject development is often required to initiate as fast as possible, leaving no sufficient time for appropriate planning. This will lead for further vagueness of project scope that will eventually result in inaccuracy and overestimation of cost and time.

**Clear Project Objectives**

In order to facilitate resource allocation for project managers of those involved in the project, and leading them towards a common goal, project objectives must be clear and well defined, thus achieving project management success.

The initial objective of a MCP in developing countries is rarely clarified, leaving this to numerous parties involved with different phases of the development. Vagueness in project objectives will result in having different set of priorities, opening a door for proceeding with private interests.

**Communication, Coordination, and Commitment**

According to the PMI’s Pulse of the Profession In-Depth Report: The Essential Role of Communication, highly effective communication is a major contributor to delivering projects within the constraints of time, budget and meeting original goals.

In order to expedite communication and coordination between various parties involved in the development of MCPs, a management information system is required. The information system should be accessible to all project members in need to fulfill their responsibilities. The information system provides data related to time, budget, and resource allocation, therefore should be precise and updated on a daily basis.

Lack of communication, coordination, and commitment will eventually contribute to the rise of several problems facing project management and increase the chances of project failure. The Pulse communication report states that in 50% of failed projects, lack of effective communication was the main factor contributing to failure.

**Resource Allocation**

Usually, planned budgets and delivery deadlines are assigned to MCPs’ tasks. Nevertheless, completing these tasks can’t be achieved only by setting up a budget and a completion date to the task, it requires detailed task breakdowns, human resource allocation, and milestones to meet the delivery deadline and overall budget of the project. This approaches will result in achieving tasks control, where tasks are pursued in a studied and checked manner, resulting in meeting time and costs constraints.

**Senior Management Support**

Senior management support is about the provision of essential resources, such as financial resources and high qualified human resources, and consultation and authority for the success of the project.

Provision of the required resources and consultancy is crucial for the survival and success of the MCP development. However, in developing countries, MCP could suffer from a shortage in funding, mainly for two reasons. The clients for MCP in developing are in most cases governments or public donors such as the World Bank or the Official
Development Aid (ODA). Governments in developing countries suffer from a ‘lack of financial resources, cost control, and venture capital’ (Georgieva, 2012), and the public sector organizations are losing confidence in funding the MCPs due to their bad implementation (Nguyen, 2007).

**Stakeholders Involvement and Consultation**

Effective communication and coordination between various project associates is vital for the success of the project, however a very important stakeholder that should be taken into consideration is the end-user of MCPs, which is in this case the community where the project is being developed. The end-user should take part of decision-making process during MCP planning and execution. The community’s participation in decision-making helps to ensure the community’s approval and support to the MCP development. In the end, the community’s satisfaction means project success.

In developing countries, proliferation of organizations and practitioners of various specialties such architects, lawyers, bankers, engineers, consultants, contractors are involved in the development of MCPs. However, inappropriate allocation and integration of the numerous stakeholders’ parties occurs at early stages of MCPs.

**Authority and Leadership of Project Manager**

Economic, political, and socio-cultural factors are vital for the development of MCP and can be uncertain; however human resource allocation and project organization structure lie in the hand of the project manager. The project manager and team members will be the management core during the whole process of MCP development. The whole mood and management of the project depend on the leadership of the assigned project manager. Effective leadership is essential for the successful management of projects and organizations.

**Competent Project Team**

While the authority and leadership of project managers is necessary for successful MCP management, his competencies should match those he leads. The responsibility for delivering project quality lies in the hand of the project manager and the project team who should attempt to adopt the best approaches to guarantee project management success.

**Developing countries** usually fail in attracting and developing talents which is crucial for project success. There is a lack of high-quality education and training that is affecting the outcome of MCPs. The negative impact of having a shortage of highly trained and qualified staff members can be seen from the construction of the FIFA 2010 World Cup stadiums in South Africa (Othman, 2013). According to Baloyi and Bekker, (2011) who identified nine causes for cost overruns, and for time overruns, the shortage of professional and quality staff members lies third in terms of cost overruns, and second in terms of time overruns.
3 Methodology

Leedy and Ormrod, (2001), addressed research as a process of acquiring, examining and interpreting data beneficial to understanding a subject. The research is methodical in explaining the objective while conveying the findings taking place within established frameworks (Williams, 2007). Besides, it assists researchers in framing up the research agenda, in particular: how to perform the research, and what types of considerations are rational (Williams, 2007).

3.1 Research Setting

This chapter discussed the methodologies, and in specific, the orientations, strategies, and approach in accordance with the adopted research philosophy. Furthermore, these philosophies and strategies had been exercised to gather data from the following case studies.

3.1.1 Selection of Case Studies:

The three case studies had been selected on the premises of project objectives (scope, quality, cost, and time), business objectives, and the social and environmental objectives, as they are the benchmarks of a successful project. Furthermore, given the purpose, it was highly imperative to choose MCPs case study from developing countries. For this reason and due to research limitations, all the three case studies had been selected from Pakistan. Moreover, respondents from the case studies were inquired about the various critical factors that contributed to the successful implementation of the selected MCPs. Case A had been fully executed and shall be operational by March 2018, Case B and Case C are in the last phase of their completion and expected to be operational by mid-2018. The table below provides an overview of the success of the selected MCPs against the three main project success criteria.

<table>
<thead>
<tr>
<th>Projects</th>
<th>Project Objectives</th>
<th>Business Objectives</th>
<th>Social and Environmental Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time</td>
<td>Budget</td>
<td>Scope</td>
</tr>
<tr>
<td>Case A The Islamabad Airport</td>
<td>X</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Case B Bahria Icon Tower</td>
<td>X</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Case C Bin Qasim Coal Power Plant</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
Case A (Islamabad International Airport):

Islamabad International Airport is planned to be the largest airport in Pakistan, which would accommodate around 11 million passengers/annum. The initial concepts for development were decided in 2005 by Civil Aviation Authority Pakistan (CAA) which is a governmental body in Pakistan. The contracts were awarded in 2007, and the construction of the airport started in 2009. The project was scheduled to be completed in 2012, however faced some time overruns, and was later completed in July 2017. However, the airport is expected to be operating in March of 2018, due to the construction of the road network leading to the premises. The initial budget of the MCP was around $350 million, however due to scope changes and other identified factors, the budget was increased to reach around $900 million. The project suffered from cost and time overruns, however it was completed according to scope and benefits adequacy.

The airport consists of several building blocks, the ATC (Air Traffic Control) tower, the main terminal, the outhouse, etc. The main terminal was initially designed for 9 million passengers per annum, and the work went underway accordingly, however in 2014, the scope went through some changes, and the amount of passengers increased to 11 million passengers per annum. This airport was initiated by the previous Pakistani government. The current government launched lots of financial projects, one of them is CPEC (China Pakistan Economic Corridor), which is a $46 billion investment by China into Pakistan. It was assumed that this heavy Chinese investment will attract investors from all around the globe, and since Islamabad is the capital, there would be more people coming in, and the requirement would be increased. Therefore, the government decided to accommodate the increase immediately and leave it for the next 30-35 years, rather than upgrading it again in few years’ time.

As mentioned in the previous chapter, the case study had to satisfy at least one aspect of the iron triangle, meet the client’s criteria of satisfaction (business objectives), and achieve the projects’ social and environmental objectives through the satisfaction of local community. Since this project has been executed with respect to the predefined scope, which was to build the largest airport of Pakistan. Therefore, it meets project objectives criteria. The project accomplished its business objectives by satisfying the clients with state of the art airport for the next 30 years. Moreover, the ever-growing demand of the locality of a larger airport was also met. Hence the project also complied with the social and environmental objectives.

Case B (Bahria Icon Tower Karachi):

Bahria town, one of the largest estate developers in Asia initiated a project of building the tallest structure in Pakistan to show their grandeur. The Bahria Icon Tower Project is located in Karachi, Pakistan, on the coast of the Arabian Sea. Being both the client and the sponsor, Bahria had a clear objective of building the tallest tower in Pakistan, therefore there wasn’t any actual cost benefit analysis. The contracts were awarded in 2008, and the construction of the tower started in 2010. The project was scheduled to be completed in 2015, however faced some time overruns, and is expected to be delivered in 2019. The first phase of the project will be made public in early 2018. The initial budget of the MCP was estimated to be around $90.6 million, however due to scope changes and other identified factors, the budget increased to reach around $162.5 million.
The Bahria Icon Tower Project was initially funded and developed by Bahria, who had a very clear objective, ‘building the tallest building in Pakistan’. Therefore, the developers weren’t limited by the constraints of time and budget to achieve the primary objective. However, in 2015, when Bahria took the public on board, a third party interference was influential in decision making. A delivery deadline was set in early 2018.

The project suffered from cost and time overruns, however the first phase was completed according to scope and benefits adequacy. After third party interference, the second phase is expected to be completed within the constraints of time, scope, and client expectations.

Project objectives criteria had been met by persisting with the preplanned objective of building the tallest structure in Pakistan. Furthermore, both the clients (public and Bahria Town) were satisfied as public got their share in the biggest project of the city, while Bahria Town showed their dominance through the structure’s magnitude. By involving local community to the project, and coping up with the civil issues related to traffic flows and heritage preservation, the project had also achieved its social and environmental objectives.

*Case C (Pakistan Port Qasim Power Project):*

Bin Qasim Coal Power Plant is located in Karachi, Pakistan, at Port Qasim. The initial concepts for development were decided in 2013 by Al-Mirqab Capital, a Qatar based governmental company, and SEPCO 3, a Chinese based governmental company. The contracts were awarded in early 2015, and the construction of the power plant started in June 2015. The MCP comprises of two phases as there are two plans of 660MW each. The first plant was scheduled to be completed in December 2017, and the second plant is scheduled to be completed in June 2018. The first plant was completed, and started operating a week prior to the scheduled plan in early December 2017, and the second is progressing according to schedule. The initial budget of the MCP was around $2.11 billion, and development is proceeding according to planned budget.

The main drivers for the power plant construction was to add 1320 MW to Pakistan electric grid as there is an imbalance between the supply and demand of electricity. Political drivers were also present during project implementation, where the current government supported the MCP to attract a significant amount of vote bank for the next elections in 2018.

Current project satisfied the 3 benchmarks set for the success of MCPs. The project is executed with the pre-planned budget, time and predefined scope, with no scope changes in any phase of the project. Moreover, the clients (Qatar and China) were gratified by accomplishing the project according to their initially planned objectives. Moreover, social and environmental objectives had also been attained, as the project had the public support due to the ever-growing energy shortfalls in Pakistan.
Table 4. Summarized details of the selected MCPS.

<table>
<thead>
<tr>
<th>No.</th>
<th>Cases</th>
<th>Initial Budget</th>
<th>Expected Budget</th>
<th>Initial Deadline</th>
<th>Expected Deadline</th>
<th>Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>The Islamabad Airport</td>
<td>$350 million</td>
<td>$900 million</td>
<td>2012</td>
<td>March 2018</td>
<td>Civil Aviation Authority (CAA)</td>
</tr>
<tr>
<td>B</td>
<td>Bahria Icon Tower</td>
<td>$90.6 million</td>
<td>$162.5 million</td>
<td>2015</td>
<td>March 2019</td>
<td>Bahria Town Real Estate Developers</td>
</tr>
<tr>
<td>C</td>
<td>Bin Qasim Coal Power Plant</td>
<td>$2.1 billion</td>
<td>$2.1 billion</td>
<td>June 2018</td>
<td>June 2018</td>
<td>SEPCO 3-Al-Mirqab Capital</td>
</tr>
</tbody>
</table>

Table 4. provides a brief summary of primary details of the selected cases. Following the research setting, we had discussed methodologies, orientation, and inquiry strategies adopted to acquire data from the above stated case studies.

3.2 Research Philosophy

Research philosophy relates to the development, and nature of knowledge, facilitating researchers in formulating the research strategy and its methods (Saunders, 2009). Additionally, it assists the researchers and readers to obtain a distinct idea about the phenomenon and supports them to define a clear purpose within the study (Carson et al., 2001).

3.2.1 Ontology

Ontology, ‘the study of being’, is connected with the kind of world we are examining, and the structure of reality (Crotty, 1998). According to Guba and Lincoln (1989), Ontology questions the existence of a phenomenon, ‘What is there that can be known?’ It benefits the researcher to ponder around issues, such as: whether the world exists autonomously of their understanding of it (Greener, 2011). Based on Sikes (2004) understanding, researchers can quantify and observe the knowledge, if it is objective and to be captured. Conversely, if the knowledge appears to be subjective and conceptual, they will have to take into consideration the people involved. Bryman & Bell (2015), indicate that there are two distinct views; Objectivism and Subjectivism. The former discusses the existence of reality independent of social actors, while the later perceives reality as dependent upon social actors, and on the context of the study. (Carson et al., 2001). For this reason, the authors’ ontological standpoint is directly linked to their method of acquiring the research data (Oliver, 2010).

The thesis focused on identifying effective project management approaches adopted in successful MCPs in developing countries. Furthermore, it identified other CSFs that are specific to MCPs within developing countries. As there are no standard CSFs for every context, consequently project management approaches also change with respect to different challenges facing megaprojects (Rolstadas et al., 2014). Accordingly, acknowledging the existence of project management approaches, evolving with respect to the context, culture, people’s behavior and perspectives, allowed us to give subjectivist
view to our research. Furthermore, it also helped us in choosing the methodologies, and formulate the way to interpret the data (Ratner, 2002). In light of this, answers to the research questions were grounded on the opinion of the project managers involved in the MCPs. It helped us in identifying effective project management approaches adopted in successful MCPs in developing countries. Moreover, it assisted us in identifying other CSFs that are specific to MCPs within that context.

3.2.2 Epistemology

As specified by Fayolle et al. (2006), ontology is the comprehensive and most profound level, succeeded by epistemology which is deduced from ontology itself. Crotty (1998), defines Epistemology as a way of understanding and interpreting. It addresses how we know what we know’ (Ahmed, 2008). Furthermore, Cohen et al. (2007), argues that Epistemology is concerned with the nature and forms of knowledge. In addition, the researcher's epistemological stance viewpoint is essential for selection of methodology in terms of its purpose and goals (Snape and Spencer, 2003). Moreover, the ways in which that knowledge is formulated is reliant on the methodology. As a consequence, authors prefers a subjectivist epistemology where ‘the investigator and the investigated object are assumed to be interactively linked, with the values of the investigator . . . inevitably influencing the inquiry’ (Guba and Lincoln, 1994).

Positivism and Interpretivism are regarded as the two dominant epistemological ideologies, however, Gephart (1999) also classifies critical postmodernism as the third research paradigm underlying epistemology.

The positivist epistemology is interlinked with objectivism; a Positivist approach would focus on discovering about an objective reality (Scotland, 2012). Moreover, it is based on description and facts as scientific principles (House, 1991). Additionally, positivistic approach rests detached from personal experience and values, as they inquire for subjectivity and rationale for research (Carson et al. 2001; Hudson and Ozanne 1988).

Interpretivist paradigm aims to understand people (Babbie & Mouton, 2008). The purpose is to understand and decipher experiences, social structures, and values people attach to them (Collis & Hussey, 2009) and (Rubin & Babbie, 2010). Moreover, Gephart (1999) narrates interpretivism as an approach to understand the social interactions between humans. Fouché and Schurink (2011) adhere to Gephart (1999) by rejecting the narrative that the social sciences should follow the same principles endorsed by natural sciences. Schwandt (2007) also stresses that meanings can only be observed through social interaction, rather than through facts and data.

The interpretivist approach is suitable to this thesis, as the answers can only be formulated by taking into consideration the viewpoint of the project managers, rather than studying the facts and data about the successfully completed MCPs in developing countries. Thereby, the relevant information had been accumulated and deduced through interaction with project managers of MCPs.

3.2.3 Axiology

Saunders et al. (2012) explain axiology as a branch of philosophy that studies judgements about personal values. Furthermore, it assesses the value of the researchers, such as biases in all phases of the research process (Li, 2016).
The authors of this thesis are architects with a prior experience in their relative developing countries. As a result, it became a common ground for choosing ‘MCPs in developing countries.’ Moreover, the paper benefitted the authors in linking the project management program with their architectural background.

Bryman & Bell (2015) underlines that the previous experience and knowledge about the topic affect the research in several phases, such as; research methodologies, objectives, data collection, analysis, and the final outcome. Hence to evade biasness, and to create a sense of value in the research, it is beneficial to scrutinize ourselves (Bryman & Bell, 2015).

In our thesis, the authors possess prior educational background in architecture, therefore had a consistent stance of working on MCPs, in an effort to bridge their bachelor’s knowledge with master’s learning. Furthermore, in the initial phase of the project, the authors had a preconception that the political influence on MCPs in developing country is the major reason of the projects failure, and that there hasn’t been much research conducted on this topic. But, however, undertaking a thorough literature review, and using multiple source of evidences for the collection of data, and triangulation of evidence allowed the authors to negate the aspects of biasness from the thesis. Besides that, we had addressed value factor by maintaining a comprehensive database of the research procedures in the form of transcripts, documentation, discussion with external auditor (advisor), and recording of the interviews with the respondents for the analysis in order to ensure that we relied on them instead of relying on our interpretation.

3.3 Research Orientation

Research orientation act as a bridge between the philosophies adopted previously (Subjectivist Approach) and linking that to the research approach and research design. Creswell (2014), explains that the choice of an appropriate orientation relies upon the prevalent academic literature, and what is needed to be answered. In addition, it is affected by the philosophy adopted, assumptions of the authors, and their conception of the phenomenon (Ghauri & Gronhaug, 2010). Furthermore, an objectivist view drives the research towards a quantitative design while subjectivist view aligns with qualitative design. As mentioned earlier, in our thesis we took into consideration subjectivist viewpoint, therefore it was based on qualitative research using inductive reasoning. This will further be elaborated in the next section:

3.3.1 Research Approach

According to Trochim (2006), the two broad methods of reasoning are inductive and deductive approaches; Induction is referred as being moving from specific to general, while deduction begins from general to specific. Moreover, induction deals with information based on experience and observations while deductive is based on objectivist philosophy, based on laws, numbers or generalized principles. Ghauri & Gronhaug, (2010) indicates that deductive approach builds a hypothesis from existing knowledge and draws upon a conclusion by validating the supposition. Given that, in inductive approach, the researcher works from ‘bottom-up’ using people’s opinion to generate broader view, and to expand the theory connecting those viewpoints (Creswell, 2007). Besides, it commences with a well-defined problem, which is explored through academic literature, participants’ opinion, case studies to generate a new theory (Ghauri & Gronhaug, 2010).
A comprehensive literature review facilitated the authors of this thesis in identifying the connection between project management approaches and the success factors in developing countries. However, the CSFs in MCPs in developing countries haven’t been considerably developed in the previous studies. Consequently, inductive approach was more suitable and sufficient to contribute towards a new theory, established upon project managers’ observation and practical experience from working in MCPs in developing countries.

3.3.2 Research Purpose

Research can be categorized into several types, depending on the nature of research problem, such as; exploratory (ambiguous problem), descriptive (understanding of the problem), or explanatory (clearly defined problem), (Yin, 1994) and (Zikmund, 2000). Though Yin (1994) argues that there is a fine line between these categories, and the research problem, purpose of the research, and research questions guide the researchers’ towards an appropriate identification of their research category.

The thesis aims to identify effective project management approaches adopted in successful MCPs in developing countries. Besides, it will also help us to identify other CSFs that are specific to MCPs within that context. In the light of the topic not being inquired significantly in the previous research studies, exploratory research was the most suitable and effective method, as it generated an understanding under a new perspective (Saunders et al., 2009).

3.3.3 Research Strategy

Qualitative and quantitative are the two most commonly used strategies. The significant difference being that quantitative research is grounded on numbers, facts that are quantifiable, as opposed to qualitative research that is more subjective and deals with words, feelings and their meanings (Ghauri & Gronhaug, 2010). Similarly, Creswell (2003) emphasizes that quantitative research involves the accumulation of data to quantify the information, in an effort to support or refute "alternate knowledge claims." Qualitative research frames its premises on inductive-objectivist reasoning instead of deductive reasoning. Moreover, the researchers endeavor to clarify the questions raised by the observational elements (Williams, 2007).

The theme of the thesis had been established on subjectivist-inductive approach, which is directly aligned with the qualitative research. Additionally, Bryman (2016) also highlights qualitative strategy as being parallel to the inductive approach, focusing on generating a theory established on the interpretations of the society (Ghauri & Gronhaug, 2010). Qualitative data collection assisted the authors to understand the phenomenon by analyzing the observations of the project managers through case study methods. The nature of qualitative data collection will be discussed in the later section, based upon interviews, grounded theory, and exploratory case studies.
3.4 Research Design

3.4.1 Research Inquiry Strategies

There are several research inquiry strategies to gather data to magnify the strength and credibility of the research (Yin, 2009,). However, most of the inquiry strategies have their premises on the selected deductive/quantitative, or inductive/qualitative approach, adopted by the researchers (Saunders et al., 2009). Inductive/qualitative approaches, usually include, grounded theory, case studies, and ethnography as their inquiry strategies. However, for our thesis we had exercised case study inquiry strategy, as it investigates an issue within a real-life context; where there are no real boundaries between the issue and its setting, through the help of multiple sources of evidence (Yin, 2009). Moreover, Yin (2009) states that case study methodologies are mostly related to the exploratory research studies. However, Saunders (2009) disagreed with Yin and emphasized that they are both used in exploratory and explanatory researches.

For the current thesis, case study inquiry strategy had been pursued, which has been stated as an effective method to deal with exploratory problems (Hartley, 2004). The thesis is directed towards project managers in construction companies, who contributed to the successful implementation of MCPs in a developing country: Pakistan. Given that, it assisted researchers to validate the project management approaches they have mentioned in the literature review to the real-life context. Besides that, it also benefitted them in exploring various CSFs from developing countries. Case study methodology provided an extra cushion as it expands the tools for collecting qualitative data, through interviews, project documentation, and news articles. As the information is inadequate, multiple exploratory case studies had also helped in cross checking the findings, and generating a pattern to be used during the analysis.

3.4.2 Data Collection Methods

Case studies allow researchers to incorporate data from multiple informatory sources in order to have an in-depth picture. The data collection tools can be observation, participation, records, documentation, and interviews. However, they may also include photographs, videos and life histories (Yin, 2009). The current thesis focused on the interviews as the primary source of gathering information. Besides, it also took assistance from the journal articles, relevant websites, newspaper blogs, and project documentation. Nevertheless, all the gathered data was validated through the interview with the Project Managers.

Interviews has several forms, such as; open ended (participants’ opinions), focused (short interviews), and structured/semi structured interviews (formal survey) (Tellis, 1997). However, due to thesis being of exploratory nature, semi-structured interviews had been exercised, which allowed more data to emerge as the questions were not fixed, and an answer from the respondent led to further queries on the same issue. This will be further discussed in the interview framework (3.4.3).

The Participants:

The objective of a qualitative study is to get in-depth information from the respondents, rather than making statistical generalization (Johannessen, Kristoffersen and Tufte,
Accordingly, it is important to decide the target group for the research to gather necessary data. As previously mentioned, the thesis focuses on identifying effective project management approaches adopted in successful MCPs in developing countries that affect the project objectives, business objectives, and social and environmental objectives. Consequently, we conducted the interviews of project managers as they are crucial significant players in projects, central to the process of project management (Ofri, 2013).

Interviews were conducted with three project managers, one from each of the case study. The only criteria that was set for choosing project managers was that they had worked on their respective cases from the beginning and had been involved in its execution. All of them were working full time with the projects from the beginning and had an accurate idea about what has been happening in the project from scratch till date. Project managers from Case A and Case B had more than 10 years of working as project managers in construction industry. While the project manager from Case C was comparatively new and had 3 years of experience working in the construction industry.

3.4.3 Interview Framework:

A semi-structured interview framework was formulated based on the research questions and objectives, in such a way that there is a consistency in each interview and the same questions are asked to generate a pattern in all interviews. The semi-structured interviews can be referred as ‘Theme Interviews’, as one element stays constant in the interview, ‘Theme’ (Hirsjarvi and Hurme, 2008). According to Kananen (2014), the theme is decided by the researcher beforehand. Furthermore, it helps in understanding the investigated phenomenon, establishing an understanding of the topic (Kananen, 2014). Additionally, the researchers were free to ask more unprepared questions to have more clarity regarding the topics. Therefore, the interview was in-depth and conducted in a way to allow more additional information to emerge. Besides, the framework devised ensured that we do not go outside our targeted objectives and also helped us in minimizing the time loss.

The structure of the interview was based on Gudiene et al. (2013) conceptual critical factor model for construction projects that takes into account different parameters to examine the performance of any construction project. Structurally the interview comprises of 6 segments, such as; Project related factors, project management/team members related factors, contractor related factors, client related factors, project manager related factors, and external factors (political, economic, social, physical, and cultural).

Semi structured face-to-face skype interview was employed for the Case A (Islamabad Airport), while for the Case B (Bahria Town), and Case C (Bin Qasim Coal Power Plant) semi structured interviews were conducted via telephone call because of the participants’ unavailability to connect via skype. In all the three cases, the project managers were contacted through one of the author’s personal links, as the projects were based in his country.

Once the connection was established with them, an initial telephonic conversation was made in order to brief them about the thesis, and to schedule the time and date for the interview. The interview for Case A was conducted in a mix medium of Urdu and English. However, for the Case B, and Case C, the whole interview was conducted in the native
language Urdu, which was later translated in a dialogue form into English. Though the interviews were conducted in one of the author’s native language, however, the presence of another author ensured the quality and content of the interview.

The project managers were extremely cooperative and the date and time was mutually decided. The interviews were conducted by both the researchers, and extra notes were taken for the discussion in all three cases. The participants were made aware about the interview recording through laptop and they gave us full consent to do so. However, for the Case A, the project manager asked for the anonymity of his name as it was a Governmental project, and he conveyed us his reservation that he might not be able to inform us about the inside stories. This was carefully taken into consideration by both researchers’ and full anonymity was promised to the project manager. For the Case B and Case C, the project manager did not ask for the anonymity and were keen to make as much contribution as they can for the thesis. During the interviews, the participants were given freedom to enlighten us with every possible relevant project information.

3.5 Ethical Concerns

Ethics is a branch of philosophy that takes into perspective human behaviors, originally introduced by Aristotle (Seale et al., 2004). Moreover, Cooper and Schindler (2006) term ethics as standards that drives our attitude and relationship with others. For this reason, Berg (2010) stresses researchers to define for themselves what is ethical in research.

Research ethics addresses the rightness of the authors’ attitude with regards to the rights of those participants who are influenced by their work (Saunders et al., 2009). This paper carefully considered all ethical aspects such as: data collection, data analysis, approaching interview respondents, interviews, and communicating final conclusions. The issues related to the ethicality of the report are being discussed in detail in the next chapter. However, this section deals with the rights of the participants involved in the work.

One of the respondent interviewed was a mutual friend of one of the author (Bin Qasim coal power plant), hence sufficient measures were taken to avoid favorable findings, and to negate conflict of interest (Bryman and Bell, 2015). This was done by triangulation of data from multiple sources.

For all the interviews, the respondents were contacted through personal links, and a brief about the project was communicated to them in an effort to ensure that the participants had enough knowledge about the topic. Moreover, this provided them the time to decide whether they are willing to contribute to our research, or keen to withdraw from the research (Saunders et al., 2009). Once they confirmed their willingness to facilitate us with their knowledge, they were provided with further relevant details.

In each of the interview, consent from the participants was taken in order to record the proceedings as it would allow the researchers to improve the quality of the work. Furthermore, consent was taken to ensure the privacy of the participant (Saunders et al., 2009). Whereas in one project (Islamabad Airport) the respondent had a fear of facing the backlash in case of his name being made public, hence full anonymity was given to him. Moreover, a sense of trust should prevail between the researcher and the respondent (Bryman and Bell, 2015).
3.6 Research Quality

Aforementioned, the qualitative research exercises an interpretive approach to its observed phenomenon. Golafashani (2003) further echoes the previous narrative and describes it as a naturalistic method to comprehend the subject in a real world setting. Furthermore, Creswell (1998) adds that the researcher generates the comprehensive picture by carrying the investigation that explore a social problem.

However, as the qualitative research uses an interpretive approach, it is repeatedly blamed for being a narrowed approach unable to be generalized in a wider perspective (Pandey and Patnaik, 2014). Consequently, the qualitative study confronts challenges such as: biasness, and lack of validity and credibility (Brink, 1993). Furthermore, it becomes increasingly difficult to modulate quality check criteria due to extensive range of qualitative philosophical approaches (Meyrick, 2006; Tracy, 2010). However, several studies have discussed the criteria for assessing the quality of qualitative research. Reliability and validity are identified by several researchers as the critical factors influencing the research quality (Bryman and Bell, 2015; Saunders et al., 2009; Guba and Lincoln, 1994). Additionally, Saunders et al. identifies reliability, and validity as the tools for enhancing the quality of the research, as it helps to correlate the findings with the objectives of the study by curtailing the possibility of ineffective research.

Yin (2009) puts forward four quality assessments tests which are an elaboration of the previous tools, and assists in identifying trustworthiness, confirmability, credibility and data dependability. The assessment tests include: Construct validity, Internal Validity, External validity, and Reliability. In addition, he describes case studies as empirical inquiries that explore the subject in a real life setting. Accordingly, above mentioned quality assessments test were exercised to improve the standard of the empirical social research. Other than that Lincoln and Guba (1985) establish sets of factors that increase the trustworthiness of the qualitative study, such as: Credibility, transferability, dependability, and conformability. These were also taken into consideration for assessing general aspects of the research.

Contruct validity is described by Yin (2009) as structuring of operational measures that are linked with the objectives of the study, and how does a research question drives the study towards the objectives. Theoretical framework of the current study assisted in establishing the measures that will lead towards the objectives. Study of project management practices in MCPs in developing countries by adopting literature reviews, and the case studies helped to develop a framework that would help us in construct validity. Construct validity was refined by collecting information from multiple sources, such as: Journal articles, webpages, project documentation, interviews, and news articles etc. furthermore, the data from the sources were compared to each other to triangulate the evidences found in the interviews. Additionally, transcripts, raw notes, lectures, and interviews have been recorded to maintain a database which allow us to link the findings with the research objectives (Yin, 2009). The transcripts were then sent to the respondents to check for any discrepancy that occurred while translating from Urdu to English.

Internal validity seeks to establish casual relationships and deals with explanatory case studies (Yin, 2009). Hence, this was not considered as we are dealing with exploratory case study.

Generalizability is regarded as a weakness in case study research as it aims to generalize the findings to theoretical propositions rather than to the broader society (Yin, 2009).
Moreover, qualitative inquiries are often targeted for a specific setting or individuals, which makes it hard to externally validate the findings (Merriam, 1998; Bryman and Bell, 2015). However, it is highly significant for a researcher to define a boundary of the study to the audience, to convey the extent of the transferability of the study (Cole and Gardner, 1979; Marchionini and Teague, 1987). The phenomenon of inadequate project management practices in MCPs in developing countries had been described thoroughly in the theoretical framework, whereas the boundary of the study had been framed by specifically considering the projects in developing countries. This would allow the reader to evaluate the magnitude of the external validity (Lincoln and Guba, 1985).

Reliability or as Lincoln and Guba (1985) puts them Dependability, refers to the operations of the study, primarily the data collection procedures. Whether the produced outcome can be repeated by applying the same data collection procedures (Rowley, 2002). Moreover, the consistency of the research process across time and methods is also addressed as a reliability factor (Miles and Huberman, 1994). There are 4 factors which are identified as the major threats to reliability: Participant error, participant bias, observer error, and observer bias (Robson, 2002; Saunders et al., 2009). The current paper has addressed all of the above factors by maintaining a comprehensive database of the research procedures in the form of transcripts, minutes of the meeting, documentation, discussion with external auditor (advisor), and recording of the interviews with the respondents etc. Accordingly, all of these have been mentioned previously to make the reader aware of the reliability of the work. However, the threat of biasness was mitigated by cross checking the findings from the interview with the project documentation available. Additionally, the answers from the respondents were re-confirmed by reframing the same questions in a repetitive way. By doing this, it allowed the researcher to cross-check the interpretation of the participant.

Lincoln and Guba (1985) states credibility as the factor for improving the trustworthiness of a research. The present research used triangulation as the method to deal with credibility. Merriam (1995) defines triangulation as a method to generate a deeper understanding. Denzin (1978) and Tracy (2010) reverberates the previous narrative by stating that, if data from multiple resources, theoretical frameworks, interviews, or the researchers extract a similar outcome, then it is bound to be higher in credibility.

Transferability deals with the generalization of the study to a broader society as explained under generalizability. It is enhanced by clearly defining the limitations of the study and the desired audience (Cole and Gardner, 1979; Marchionini and Teague, 1987). Besides that, thick description of the phenomenon, and its application in the context of MCPs in developing countries also allows the reader to grasp the extent of transferability in similar contexts (Pandey and Patnaik, 2014).

Conformability is linked with reliability of the research. It refers to the quality of the outcomes which are dependent on the researchers’ involved in the study: their interpretations and biases (Lincoln and Guba, 1989). The increase in the consistency of the outcomes, and furthermore, by documenting the process of data collection procedures, data gathering, and analysis allows the report to increase its conformability (Tasic et al. 2012).

Malterud (2001) narrates that researchers’ biasness will influence every aspect of the work, such as: selection of the topic, methodological procedures adopted to investigate the phenomenon, findings, and the framing up of conclusion. However, Pandey and Patnaik (2014) term reflexivity as an attitude of the researcher towards knowledge
construction while collecting and analyzing the data. In the current work, the researchers justified the selection through thorough investigation of literature, and clearly justified the adopted methods which are been mentioned in this chapter. Moreover, weekly discussion with the advisor also allowed us to negate the aspect of biasness in our study.

4 Findings.

The aim of the thesis was to identify effective project management approaches adopted in successful MCPs in developing countries using CSFs. In addition, identifying other CSFs and EPMAs that were specific to MCPs within that context using Gudiene, (2013) Conceptual Critical Factor Model for Construction Projects. The study also aimed to test the compliance of the identified Effective Project Management Approaches and CSFs with the CSFs outlined in the literature. Thus, the structuring of this chapter is as follows:

- Conceptual Framework
- Finding from Case A, Case B, and Case C.
  - The External Context of the Selected MCPs
  - Project Management Challenges.
  - Critical Success Factors / Effective Project Management Approaches.

4.1 Conceptual Framework

From the literature review, we acquired the critical variables that influences project success. Therefore, we acquired a conceptual model for the purpose of identifying the critical success factors, and challenges in MCPs in developing countries. As previously mentioned, Gudiene et al. (2013), introduced a conceptual critical success factor model (fig.1) for construction projects that takes into account different parameters to examine the performance of any construction project. Moreover, the conceptual framework considers all critical factors that influence the performance of MCPs, as outlined in the literature.

The model takes into perspective factors related to the project management team as well as stakeholders. However, the model had to be adapted to our criteria to explore and map the critical factors collected from the interviews. The model assists in identifying the overall pivotal factors in terms of project objectives, business objectives, and environmental and social objectives, as previously defined in our literature review. Consequently, the structure of the interview is based upon the adopted conceptual framework, which would allow us to explore influential factors prevalent in MCPs in developing countries.

The structure of the model embodies six sets of critical factors that influences each other during a project. These include: project related factors, project management related factors, contractor related factors, client related factors, project manager related factors, and external factors.

Project related factors influences the success of the project at the very beginning. It discusses the size, type and complexity of the project. Moreover, planning, procurement, objectives, risk, and budget also constitute this set.
A competent project management team enhances the probability of a project success. An effective team with minimal coordination and communication issues contributes towards the success. Moreover, previous experience, soft skills, leadership qualities, and motivation within a project management team also adds to the success factors. However, they are linked to the organizational structure, decision making and the allocation of resources.

Contractor is a key factor to deliver the project successfully within the predefined time and cost. The previous experience of contractors in a similar kind of project also adds to the success factors. Besides that, this group also considers professional capability of the company, support of top management, quality issues, work conditions, and economic and financial position of the company.

For any mega project to be successful, client has an important role to play, from past experience to have the ability to take timely decisions. Additionally, setting up clear objectives and scope in the beginning, along with engagement in each phase of the project are also vital for achieving success.

Project manager drives the project to success with its leadership, vision, communication and motivation skills within the team. A competent project manager persuades the planning and execution of the project through delegation of roles and authority to its team. Lastly, the influence of external factors has a major role to play in the success or failure of any project. These factors do not depend on the type or scale of the projects, and moreover, most of the times they are beyond project management's control. However, they are extremely important to consider in order to access the market, cultural, social and political dynamics. The MCPs are affected by several external factors, which includes: social, economic, political, environmental, technological, physical, legal and cultural aspects.
Fig. 1. Conceptual Critical Success Factor Model for Construction Projects. (Gudiene et al., 2013)
4.2 Conceptual Critical Factor Model – The Islamabad Airport

Fig 2. Adapted conceptual critical factor model for Case A.  
(Source: Gudiene et.al., 2013)
4.3 Conceptual Critical Factor Model – Bahria Icon Tower

Fig 3. Adapted conceptual critical factor model for Case B. (Source: Gudiene et.al., 2013)
4.4 Conceptual Critical Factor Model– Bin Qasim Coal Power Plant

Fig 4. Adapted conceptual critical factor model for Case C. (Source: Gudiene et al., 2013)
4.5 The External Context of the Selected MCPs

To better understand the managerial performance of the MCP, it was essential to define what challenges and external factors were influencing the performance of the MCP and what impact they had on the project success. External factors were derived from available project documentation and validated with project managers during interviews. The following were the main external factors identified in the case studies. The seven main external factors are as follows:

1. **Political Discontinuity**: In Case A, the airport was initiated by the previous government, but the client now is the current Pakistani government which saw new opportunities and progressed with scope changes.

2. **Changes in Associated Parties**: Case A witnessed the replacement of the initial project management team with a new team. This led to time overruns, as associated parties had to communicate all relevant information to the new project organization.

3. **Economic Unpredictability**: Inflation and currency decline occurred during project development in all the three cases. However, since the funding was entirely done by China in Case C, so it didn’t affect the estimated cost of the project.

4. **Financial Discrepancies**: In Case A, the audit committee report found discrepancies in the estimated cost and the flow of money inside the project.

5. **Lack of Essential Skills**: This was an external factor affecting all the three cases. During the realization of the MCPs, the projects’ organizations outsourced consultancy, managerial skills, and technologies.

6. **Third Party Interference**: During the implementation of Case B, the initial client took public onboard as another client for the project. By doing so, it resulted in time overruns as they had to pass on all the information to the new client and additionally the changes in the design also increased the time duration of the project.

7. **Political Interference**: Case A and Case B did not face any major political interference, but during the execution of Case C, local political party held several protest as the 1320MW of electricity was added into the federal grid, and provincial grid was totally neglected during the project.

Five of the seven external factors identified were not specific to MCPs in developing countries and could negatively influence the performance of MCPs worldwide, therefore although it is important to understand what factors effected the final outcome of the MCPs, **Political Discontinuity, Changes in Associated Parties, Economic Unpredictability, Third party interference, and Political Interference** mentioned was not part of the discussion as the main focus of the thesis is on factors strictly related to developing countries.

The **Lack of Essential Skills**, although severe in developing countries, was handled by the project organizations by outsourcing external competencies and capabilities at an early phase. In addition, the political interference in Case C was handled in a professional manner through negotiation at an early phase.

However, **Corruption** and **Financial Discrepancies** were discovered in the development of Case A at a very late stage of the project, which is the same period of this thesis work,
therefore, not enough information was gathered by the authors of the thesis to analyze the issue.

4.6 Project Management Challenges

In order to explore the project management approaches in developing countries to further assist the management of future MCPs, it was important to not only identify CSFs for the identification of EPMAs, but also for the identification of bad project management implementation. However, in the Case C, no major problems facing project management implementation were found. There were few communication gaps because of language barriers, as outsourced companies from China didn’t know English. This was quickly handled by assigning interpreters to each team. Afterwards, the project manager states that ‘there wasn’t any lack of coordination between the team which resulted in the project being completed within time and cost’.

A list of ineffective project management approaches was generated from the conceptual model for the Case A and Case B, which were confirmed with the project managers. Four main project management problems were identified:

1- Lack of Risk Mitigation Plan: There was no sufficient planning in Case A due to the lack of professionalism, problems were resolved as they occurred with time. According to the interviewee, ‘These companies (the outsourced companies) had the habit of working in a professional environment so they weren’t used to the lack of professionalism. So unfortunately there was a huge gap between the approach and professionalism and they were resolved as they occurred with time’. Case B suffered from lack of sufficient planning, and risks were tackled as they came along. There was no benefit cost analysis either. As stated by the respondent, ‘Honestly system in Pakistan isn’t that advanced to plan for risk mitigations or contingency. So in this project we tackled the risk, as they came along during the entire phase of the project’.

2- Project Objectives Changes: Project objectives in Case A were clear throughout project execution, however suffered from constant modifications due to the client and the change in government.

3- Ineffective Use of the Information System: Case A encountered lack of coordination with regards to informing the respective person about updated documentation. The respondent stated that ‘There was a server and each stakeholder has its own document server department from where they can have access to every data which is available. But having said that, even if there is a server, there should be a coordination to inform the respective person to have a look at it. As there are hundreds of documents so it’s humanly impossible to check each of them on daily bases if not informed.’

4- Communication Gaps: Lack of professionalism resulted in a communication gap between all stakeholders involved in Case A, as mentioned in the previous paragraph as well. The interviewee mentioned that ‘Different companies, different contractors and different teams within a project management team handling their respective departments, there were communication gaps between every stakeholders of the project. The reason was the general attitude of the individual, lack of professionalism of not reporting the changes done on site.’
4.7 Critical Success Factors / Effective Project Management Approaches

The authors of the thesis generated a list of effective project management approaches that contributed to project success, which were reviewed with the project managers of the selected MCPs. The generated list was mapped by the authors according to the conceptual critical factors model for construction projects. Figures 2, 3 and 4 shows the mapping of critical factors on the conceptual framework of respective MCPs.

This generated list below will present a brief explanation of the effective project management approaches identified in all three cases:

1- Centralized Organization: In all three cases, the project organizations had a centralized structure. In addition, all department were free to take their decisions, and major implications required approval from senior management. In Case C, the department heads were asked not to consult with top management for every approval.

2- Balanced Resource Allocation: In Case A, and Case B, allocation of man power, technology, and finances was well balanced during project planning and execution. While in Case C, procurement department handled the resource allocations. The department was linked with the planning department, so as soon as decisions were being made, it was well conveyed immediately to the procurement department. Hence, there was a balanced allocation of fund, technology, and human resources.

3- Senior Management Support: In all the three cases we found strong senior management with strong leadership and authority. It also facilitated in providing the sufficient resources on time. Moreover, in Case C, the Chinese top management provided the necessary fund, machines, and the majority of the managerial staff.

4- Interaction with Stakeholders: In Case A, Stakeholders were part of the decision making project during all phases of the project. While in Case B, the owner was also the client, so there wasn’t any issue while executing the feedbacks. Moreover, the clients, and the majority of stakeholders were Chinese in Case C, so interaction and consultation between associated parties went efficiently.

5- Knowledgeable Project Team: In all the three cases the project teams were skilled and knowledgeable of their SOPs (Standard Operating Procedures) and their roles. However, in Case B, the team didn’t have any prior experience of working in such a huge project. Therefore, associated parties were all outsourced, based on their competency and previous experience. The Case B respondent mentioned in the interview, ‘Competency was an issue from day one, as there wasn’t any precedence in the country for this kind of a project. Nobody had been a part of a project of such huge scale, but people developed competencies while working on the project with the help from the parties outsourced for the project’. Project team in Case C was competent as the majority was outsourced from China, with previous experience on MCP in Asia and the Middle East. This also contributed to the learning process of the local staff.

6- Well defined Objectives: In Case B, the project organization wanted to show its power, and building the tallest tower in Pakistan. The objectives were well defined from the initiation of project. Similarly, in Case C, objectives were clearly defined since the start of the project, and there was no deviation from project scope.
7- Efficient Planning: Unlike Case A and Case B, Case C had well defined time, budget, and scope. Planning took into account political risks through a contingency plan against militant organizations attacks.

8- Effective Communication, Coordination, and Commitment: Case C had an effective information system followed with regular checks of the web server for updates. It also assisted the project organization in negating any coordination issues. The communication gaps were arising due to language barriers. The provision of an interpreter to tackle the gap resulted in effective coordination.

9- Strong Project Leader: Project director had previous relevant experience and was involved in the project on a daily basis in the entire execution of Case C.
5 Discussions

This section discusses findings from the three MCPs; The Islamabad Airport (Case A), The Bahria Icon Tower (Case B), and Bin Qasim Coal Power Plant (Case C) in relation to the existing literature.

5.1 CSFs and EPMAs within the Specific Context

Outsourcing and Collaborating

As outlined in the literature, one severe reason for MCPs failure is the shortage in providing a fully developed set of managerial and technical staff members (Nguyen, 2007). This was also the case in the selected MCPs, where according to the interviewees, local staff members didn’t have the valid experience to handle projects of that magnitude, and therefore, required assistance from quality practitioners with previous experience in MCPs. However, considering the three selected cases, this wasn’t as severe as mentioned in the literature, due to the outsourcing of the required competencies and capabilities.

The lack of collaboration between the local staff members having no prior experience with the outsourced competent staff members and technologies created few managerial gaps. According to the interviewees, communication was a major gap due to language barriers, and insufficient planning from the locals’ side caused setbacks in the implementation of the MCPs. However, these setbacks were partially handled in Case A and professionally handled in Case B and Case C. The collaboration between companies from developed countries such as China, Singapore, and England showed great benefits to the local staff members. For instance, in Case C, due to the competency factor, the majority of the team was outsourced from China having prior experience of working in developing countries, which contributed to the learning experience of the local staff.

As an attempt to overcome human development challenges, Othman, (2013) recommends strategies for education and training, and states that ‘Governments in developing countries have to perceive that providing quality education and professional training is a key driver towards sustainable development and prosperity. Higher percentage of the countries’ (GDP) has to be spent to improve sustainable development and prosperity’. However, this could be a long a process to achieve due to the shortage in providing quality education and training (Othman, 2013). Especially in certain developing countries such as South Africa, where according to Baloyi and Bekker, (2011) the lack of professional and qualified staff members lied third in terms of cost overruns, and second in terms of time overruns in the construction of FIFA World Cup Stadiums.

Due to the urgent need for the successful implementation of these MCPs, project management practitioners should consider outsourcing competent man power, and collaborating with local practitioners which will be highly beneficial for the locals, and would assist them in developing the essential skills and capabilities for future MCPs development. This approach will suffer from some setbacks, however, if managed properly, it would be highly beneficial for the local staff members’ skill set for ongoing and future developments.
Addressing the Organizational Culture

Organizational culture is defined as patterns of shared values and beliefs that over time produce behavioral norms that are adopted in solving problems (Schein, 1990). According to Zbiegien-Maciag, (1994) organizational culture is a shared method of identifying, thinking, reacting by organizations’ staff members, of which implementation is in the subconscious of the employees. Local staff members developed some negative habits and practices over time regarding the planning and execution of MCPs. This was another major pitfall that occurred during the development of Case A and Case B, and caused delays and overruns.

During the management of both Cases, the projects faced insufficient planning of cost, time, and risk. As outlined in the literature, overcoming challenges and mitigating risks is most effective through sufficient planning. And the more uncertainties and complexities the project is facing, the more the adequate planning is needed. Due to the fact, that a MCP is already a riskier process than a conventional project due to its long planning procedure and complex interfaces (Flyvbjerg, 2006), adding the complexities and challenges that arise in developing countries, there is an urgent need for sufficient planning. And researchers outlined in the literature such as Bastani, (1988), Fortune and White, (2006), and Tabish and Jha, (2011) have confirmed that adequate planning is a major contributor to project success.

Case A and Case B didn’t have a risk mitigation plan, moreover, Case B had no planned schedule nor a cost benefit analysis. As stated by the respondent of Case A, the project faced time overruns due to the lack of professionalism shown by the local staff in terms of coordination with the outsourced company. While for Case B, as mentioned in the previous chapter, the lack of seriousness in the process of risk mitigation, reflects norms and habits in the culture of the relevant organizations. Therefore, the presence of competent staff members, locals or foreigners, isn’t enough for achieving the project objectives, if the culture of the organization isn’t addressed in such a manner, and the way they initiate a project and solve problems is changed.

Attitude of Local Stakeholders

Carrol, (1982) argues that organizational culture, such as laws and practices, shape the behavior of employees, which is passed down from generation to another. This was perceived to have affected the behavior of associated local parties in Case A. According to the interviewee from Case A, communication gaps between stakeholders involved have arisen due to the attitude of the project participants and due to lack of professionalism.

Moreover, the importance and benefits of the availability of an information system accessible by all associated parties is outlined in the literature, however it is not enough for effective communication and coordination. This was emphasized by the interviewees, as according to them due to the magnitude of the project, the presence of several stakeholders created gaps within the coordination between the teams, and their lack of professionalism made the information system ineffective. Similar to what was mentioned about the organizational structure, and referring to what was stated by the project manager in Case A, the presence of a project team capable of planning and managing the complexity of the MCP is not enough for project success, although vital. It is also the commitment of team members, their attitude towards each other and towards the projects. Therefore, project managers should address this issue by holding professional awareness seminars, discussing the importance of professionalism in handling tasks, and its relation to the final outcome of the project.
5.2 Compliances of the EPMAs with the literature

The following table 5 shows the compliance of identified EPMAs with those outlined in the literature review:
### Critical Success Factors

#### Project Management Approaches

<table>
<thead>
<tr>
<th>Critical Success Factors</th>
<th>Project Organization Structure</th>
<th>Project Planning</th>
<th>Clear Project Objectives</th>
<th>Communication, Coordination, and Commitment</th>
<th>Resource Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Case A &amp; Case B, the project organizations had a centralized structure. Besides, departments were free to take their decisions, major implications required approval from senior management. However, the department were asked not to consult with top management for every approval in case C.</td>
<td>The literature mentions that more the uncertainties &amp; complexities appear, the more the adequate planning is needed. However, in Case A and Case B there was lack of risk mitigation which occurred due to lack of professionalism. However, Case C took into account political risks through a contingency plan against militant organizations attacks.</td>
<td>Project objectives should be clear &amp; well defined for achieving project management success from start to finish. However, in Case A, although it had clear objectives in the beginning, it kept on changing with time. While in Case B, all associated parties agreed on a well-defined objective which was to build the tallest building in Pakistan. In Case C, objectives were defined since the project start, and there was no deviation in any phase.</td>
<td>The benefits of an information system are outlined in the literature. However, judging from Case A, the availability of an information system is not enough for effective communication and coordination of data. It is the commitment of team members, their attitude towards each other and the projects, and their ability to inform the respective party to access relevant data when needed, is what produces results. Similarly, Case B also faced several communication gaps within the team, however, it didn’t hamper the progress of the project. Furthermore, the information system was effective, and updated regularly. While in Case C possessed effective information system where there were regular checks of the web server for updates. It also assisted the project organization in negating any coordination issues. Communication gaps due to language barriers were handled at an early stage of the project by assigning interpreters.</td>
<td>Resource allocation is vital for completing MCPs tasks such as planning, budgets, &amp; deadlines. In Case A &amp; Case B, allocation of man power, technology, &amp; finances were well balanced during project planning &amp; execution. In Case C, procurement department handled the resource allocations. The department was linked with the planning department, so as soon as decisions were being made, it was well conveyed immediately to the procurement department. Hence, there was a balanced allocation of fund, technology, and human resources.</td>
<td></td>
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</table>

### Table 5. Compliance of EPMAs with the literature

<table>
<thead>
<tr>
<th>Case A-Comply</th>
<th>Case B-Comply</th>
<th>Case C-Comply</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>✓</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>X</td>
<td>✓</td>
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<tr>
<td>X</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Critical Factors</td>
<td>Success</td>
<td>Case A</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td><strong>Senior Management Support</strong></td>
<td>In all the three cases we found strong senior management with strong leadership and authority. It also facilitated in providing the sufficient resources on time. Moreover in Case C, the Chinese top management provided the necessary fund, machines, and the majority of the managerial staff.</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Stakeholders Involvement and Consultation.</strong></td>
<td>In Case A, project management was the mediator between contractors, designer, and consultants. They consulted with everyone, however only feedbacks that were compliant with the project objectives were incorporated. While in Case B, the owner was also the client, so there wasn’t any issue while executing the feedbacks. Moreover, the clients, and the majority of stakeholders were Chinese in Case C, so interaction and consultation between associated parties went efficiently.</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Authority and Leadership of Project Manager</strong></td>
<td>The senior management of Case A and Case B showed authority and leadership, however there was no sense of leadership from the project managers’ side. Unlike the previous cases, in Case C, project director had relevant prior experience and was involved in the project on daily basis in the entire execution.</td>
<td>X</td>
</tr>
<tr>
<td><strong>Competent Project Team</strong></td>
<td>In all the three cases the project teams were skilled and knowledgeable of their SOPs and their roles. In Case A, project teams were outsourced from Singapore, France and Britain. Similarly, in Case B, the team didn’t have any prior experience of working in such a huge project. Therefore, associated parties were all outsourced, based on their competency and previous experience. The Case B respondent mentioned in the interview, ‘Competency was an issue from day one, as there wasn’t any precedence in the country for this kind of a project. Nobody had been a part of a project of such huge scale, but people developed competencies while working on the project with the help from the parties outsourced for the project’. Furthermore, project team in Case C was competent as the majority was outsourced from China, with previous experience on MCP in Asia and the Middle East. This also contributed to the learning process of the local staff.</td>
<td>✓</td>
</tr>
</tbody>
</table>
The project management approaches believed to contribute to project and project management success adopted for the realization of the selected MCPs in developing countries are similar to those utilized by Lewis and Jens, (1987), Andersen et Al., (2002), Fortune and White, (2006), etc., as outlined in the literature, discussion and findings of the study. Comparing the number of the EPMAs identified from the cases against the objectives of each MCPs, could furthermore emphasis on the importance of these project management approaches. Case A adopted five of the nine EPMAs, and suffered from cost and time overruns, however met scope requirement, and business, and social and environmental objectives. Case B adopted seven of the nine EPMAs, and had similar results to Case A. Case C adopted all nine EPMAs, and was able to meet project objectives, meeting budget, time, and scope, as well as, business, and social and environmental objectives. However, all interviewees agreed that the identified CSFs from the literature are desirable for achieving the overall objectives of the MCPs. Furthermore, three new CSFs were identified and discussed through analysis of findings, that could be perceived as specific to this context, which are as follows; Outsourcing and Collaborating, Organizational Culture, and Attitude of Local Stakeholders.

The table below provides an overview for the research objectives, where the compliance of CSF’s and EPMAs identified in the selected MCPs with the literature is outlined, and the three new CSF’s specific within the selected context is also outlined.

<table>
<thead>
<tr>
<th>N.</th>
<th>MCPs’ CSFs within the context of developing countries</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Project Organization Structure</td>
<td>Comply</td>
</tr>
<tr>
<td>2</td>
<td>Adequate Planning</td>
<td>Comply</td>
</tr>
<tr>
<td>3</td>
<td>Clear Project Objectives</td>
<td>Comply</td>
</tr>
<tr>
<td>4</td>
<td>Communication, Coordination, and Commitment</td>
<td>Comply</td>
</tr>
<tr>
<td>5</td>
<td>Resources Allocation</td>
<td>Comply</td>
</tr>
<tr>
<td>6</td>
<td>Senior Management Support</td>
<td>Comply</td>
</tr>
<tr>
<td>7</td>
<td>Stakeholders Involvement and Consultation</td>
<td>Comply</td>
</tr>
<tr>
<td>8</td>
<td>Authority and leadership of Project Manager</td>
<td>Comply</td>
</tr>
<tr>
<td>9</td>
<td>Competent Project Team</td>
<td>Comply</td>
</tr>
<tr>
<td>10</td>
<td>Outsourcing and Collaborating</td>
<td>Specific</td>
</tr>
<tr>
<td>11</td>
<td>Organizational Culture</td>
<td>Specific</td>
</tr>
<tr>
<td>12</td>
<td>Attitude of Local Stakeholders</td>
<td>Specific</td>
</tr>
</tbody>
</table>

The findings and the discussion gives an understanding of the effective project management approaches for MCPs in the context of developing country; Pakistan. The compliance of the CSFs and EPMAs identified for MCPs in the three cases against those identified in the literature review shows that project management team confronted different sets of challenges as compared to the project management teams in developed countries. For instance, lack of risk mitigation plan was a result of the ineffective organizational culture, which was one of the major reason of the cost and time overruns in Case A and Case B. Furthermore, the findings from the conceptual critical framework validates the project management approaches that contributes to the success of MCPs in developing countries, outlined in the literature review, such as; project organization structure, adequate planning, clear project objectives, senior management support, stakeholders’ involvement and consultation, competent project manager and team and balanced resource allocation. However, by cross comparing the three cases it was found that Case A and Case B did not comply with all the identified PMAs, and resulted in cost.
and time overruns. While, Case C complied with all the identified PMAs, and hence it is on track to be completed within the initially planned budget and deadline.

The findings and the discussion reveals that more specific PMAs within the context of developing countries exists in the selected MCPs that influences the performance of the project. These approaches included; outsourcing and collaboration, organizational culture, and the attitude of local stakeholders. However, these approaches have been dealt differently in the three cases leading to different outcomes. In case A and case B, lack of professionalism, and insufficient risk planning led the MCP to an increased budget and severe delays. While in Case C, these PMAs were pursued effectively in terms of risk mitigation plan, and outsourcing the interpreters to negate communication gaps. By doing this, the project management team was able to complete the first phase of the project well within time and cost.

To summarize, two major findings were identified. Firstly, the project management approaches that contribute to the success of MCPs in developing countries are similar to those outlined in the literature, including; Clear project objectives, senior management support, Stakeholders involvement and consultation, and Competent Project Team. Secondly, more specific project management approaches and CSFs within the context of developing countries were identified from the findings of the thesis, including; outsourcing and collaboration, organizational culture, and the attitude of local stakeholders.
6 Conclusion

In this final section of the master thesis, a brief conclusion of the author’s research is presented. The authors of this thesis will also present the delimitation and the limitation of the research and propose recommendations for future research studies.

The literature on critical success factors and effective project management approaches of MCPs in developing countries is limited to few studies. The literature starts by setting up standard project success criteria that will act as a validation tool to identify the success of the selected MCPs. This criteria measures success against the project objectives (cost, time, and scope), the business objectives (owner’s expectations), and the social and environmental objectives (Local community’s expectation) (Rolstadas et al., 2014). The study takes into consideration all three project success criteria, due the strong impact of the development of MCPs on all stakeholders involved including clients and end-users. According to literature, project management approaches have been acknowledged globally as pivotal aspects in influencing the performance of a project. These approaches drive the MCPs towards project success, while effectively mitigating upcoming risks. Developed countries have gone far ahead in implementing modern project management approaches in MCPs. However, MCPs in developing countries are yet to efficiently pursue those approaches. As a reason, most MCPs in developing countries are unable to achieve the desired success. Furthermore, developing countries confront different set of challenges which amplifies the need of adequate project management approaches. The Therefore, this thesis aimed to explore, using critical success factors, effective project management approaches adopted in the development of successful MCPs in developing countries.

The MCPs in the study gives an understanding of the effective project management approaches for MCPs in developing countries. Moreover, cross comparison between the case studies identified that MCPs can still be successfully executed in developing countries if all the EPMAs are exercised which was demonstrated in Case C. This would allow the practitioners to consider other specific CSFs that were not mentioned in the literature, and that would further assist them in driving the MCPs towards successful completion in developing countries. Moreover, the thesis would also support them in cross comparing EPMAs in different developing regions on the bases of critical factors identified through conceptual critical factor model for construction projects.

The compliance of the CSFs and EPMAs identified for MCPs in Pakistan against those identified in the literature review will contribute to the value of the study. Moreover, the generation of the new sets of CSFs and EPMAs for MCPs in this context will allow practitioners to enhance the performance of their projects.

6.1 Delimitation of the study

The research is subjected to several delimitations that can be characterized as theoretical and methodological. In this section we will discuss all the delimitations that were a part of this study.
From a theoretical perspective, the first delimitation of the study is megaprojects, and in particular mega construction projects. Therefore, the literature and the findings will be based upon MCPs.

The second delimitation is the context where these megaprojects are being executed; developing countries. Due to the fact that the authors come from developing countries, Lebanon and Pakistan, they showed interest in identifying effective project management approaches adopted in successful MCPs in developing countries. Furthermore, identifying other CSFs that are specific to MCPs within that context. This is highly critical, mainly due to the fact that the developing countries rely on these projects to fulfill their economic, environmental, infrastructural, residential, educational requirements and to achieve much more benefits.

The focus on MCP and not generally megaprojects is due to the fact that the construction industry in developing countries accounts roughly 80% of the total capital assets, 10% of their Gross Domestic Product, and over 50% of the wealth invested in fixed assets (Jakale, 2004). Furthermore, the construction industry provides significant employment opportunities, right under agriculture (Ofori, 2006). Moreover, the authors come from an architecture background and have previous experience in the construction industry in developing countries.

The third limitation is the project success criteria. It has been mentioned that project success can be measured against a different set of objectives; project objectives, business objectives, and social and environmental objectives. Several authors, such as Wit, (1998), and Cooke-Davies, (2001), made a clear distinction between project success (which is measured according to the overall objectives of the project, business objective), and project management success (which is measured according to the traditional criteria of performance measurement, time, cost, and scope, also known as the ‘Iron Triangle’, project objective). Since the objective of the thesis is to identify effective project management approaches adopted in successful MCPs in developing countries, project management success will be perceived as the first success criteria (delivering megaproject on time, cost, and scope). However, due the magnitude and impact of MCPs on communities and governments, business objectives and social and environmental objectives were also taken into consideration, when selecting successful MCPs for the case study.

On a methodological perspective, three successful MCPs executed in developing countries were selected for data collection and analysis. However, Flybjerg, (2014) argues that it is much easier to generate a list of worldwide failed projects in terms of cost and time overruns, and benefits shortfall, than it is to generate a list of successful projects, eventually, making it even harder, to generate it only in developing countries, since the challenges and complexities in developing countries are more severe than those imposed in developed countries. Therefore, to serve the purpose of the thesis, the MCPs selected to be considered a successful project should have had at least achieved one success criteria from the project objectives whether it was cost, time, or scope, and one of the other success measurement, business objectives and social and environmental objectives.

6.2 Research Limitations

This section outlines the limitations that were faced by the authors during the period of study. There were several factors that were influential in the process of extracting the data, and affected the outcome of the study.
The thesis was initiated with a clear intent of focusing the research towards MCPs in developing countries, which was later on supported by the literature as it showed that limited research has been conducted in the area of project management approaches in developing countries. Therefore, we decided to use case study inquiry strategy as it allows us to gather data from multiple sources. Taking into consideration that we only had 2 months to complete our thesis, this became a reason for choosing case study strategy. As the case study strategy focuses on small samples so it was difficult to transfer the findings of the thesis onto a broader area.

Initially, we had an objective of undertaking minimum of five to ten case studies of MCPs in developing countries, to allow us to come to a transferable conclusion. However, due to the shortage of time, unavailability of project managers, and difficulty in getting engaged with project managers working in projects of over $100million forced us to take three case studies as our research samples. Besides that, we contacted several project managers of MCPs from India as well in order to broaden our sampling, but due to the respondents disinterest we were unable to pursue case studies from any other country except Pakistan. Hence, it affected the extent to which the outcome of the study can be transferable to other developing countries.

Furthermore, project managers were selected as the respondents for the interviews. This lead to the possible inclusion of biasness from their side, as they might hide certain information which they feel would bring defame to their organization or project. However, this was overcome through triangulating the information from multiple sources. Lastly, one of the project being a governmental project, the interviewee informed us in the beginning that he might not be able to tell us the inside stories as it may affect his position within that organization.

6.3 Recommendations for Future Research

The following section provides a list of future research studies on CSFs, EPMAs, and MCPs.

Organizational culture and MCPs management performance

Findings showed that the organizational culture of the project organization had a negative impact on the performance of two of the three selected MCPs, however due to time constraints, the authors of the thesis couldn’t elaborate more on the topic. The values and habits the organizations developed, such as initiating a project with no risk mitigation plan, should be addressed. A further research could explore different aspects of the organizational culture of project organization in developing countries and investigate its impact on the performance of MCPs.

The selection of another developing country context

Due to time constraints, the authors of the thesis were only unable to pursue case studies from other countries except Pakistan, this is due to the difficulty of finding a MCPs in developing countries which is considered a success and due to the respondents’ disinterest in sharing information, primarily because main clients of MCPs are generally the governments. Future studies will support the findings of this thesis and could identify other PMAs and CSFs specific to the context of developing countries that have not yet been mentioned.
Different research approach for data collection

Due to time constraints, the authors of the thesis were only satisfied with three cases and data were collected through available project documentation and through conducting interviews with project managers contributed in the initiation and closing of the selected MCPs. Future studies should consider interviewing more managers involved in the MCP development to gather different perception of CSFs and EPMAs on the same MCP. Furthermore, utilize a survey method to collect data on CSFs and EPMAs adopted by developing countries organizations that contributed to the implementation of successful MCPs.
7 References


