FACTORS AFFECTING SUCCESSFUL DELIVERY OF INTERIOR DESIGN PROJECTS IN SRI LANKA

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Thesis / Dissertation submitted in partial fulfillment of the requirement for the degree of Master of Science in Project Management

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DECLARATION

I declare that this is my own work and this dissertation does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other university or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

Further I acknowledge the intellectual contribution of my research supervisor Dr. (Mrs.) Yasangika Sandanayake, Head of the Department of Building Economics for the successful completion of this research dissertation. I affirm that I will not make any publication from this research without the name(s) of my research supervisor(s) as contributing author(s) unless otherwise I have obtained written consent from my research supervisor(s).

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ABSTRACT

FACTORS AFFECTING SUCCESSFUL DELIVERY OF INTERIOR DESIGN PROJECTS IN SRI LANKA

Interior Design Projects (IDP) in Sri Lanka have changed dramatically over the years with the sustainable design revolution. An Interior Designer plans and organises the design of the space to produce creative, technical and construction solutions to achieve a perfect interior environment. The project lifecycle involvement by the Interior Designer needs to be executed through many work processes and phases. The success of the project is based on delivering the project within the required and specified timelines, cost, and quality. However, the failure of project deliveries is very common in Sri Lanka's interior design industry, and the industry faces difficulties in delivering projects successfully. Hence, this study aims to identify the factors affecting successful delivery in IDP in Sri Lanka.

In order to achieve the objective of the research, the literature synthesis was carried out to identify the factors affecting successful project deliveries. Further. semi-structured interviews were executed to identify the significant factors and to identify the contributor/stakeholder.

Poor communication, relationship with the client and lack of skills/low productivity of labour were identified as the most significant factors affecting successful project deliveries in IDP in Sri Lanka. The Interior designer and the contractor carries the same amount of responsibility throughout the project lifecycle to ensure successful deliveries in IDP. Mitigation measures identified through semi-structured interviews were suggested for future projects.

Keywords - *Interior design projects, successful project delivery, mitigation*

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Finally, I express my heartfelt gratitude to my beloved family members for giving me their utmost support, love and continuously motivating me to carry out the work successfully.

Ekanayake A. P.
January 2019

DEDICATION

To my beloved parents…

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LIST OF ABBREVIATIONS

Abbreviation		Description
CP	:	Construction Projects
ID	:	Interior Design
IDLNY	:	Interior Design for Legislation in New York
IDP	:	Interior Design Projects
PM	:	Project Management
PMBOK	:	Project Management Body of Knowledge
PS	:	Project Success

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CHAPTER 1

1 INTRODUCTION

1.1 Background

The construction industry has been widely criticised for its fragmented approach to project delivery and its failures, which lead to reduced project delivery efficiency (Baiden, Price, & Dainty, 2006). The industry is diverse than other industries as it is huge and complex (Subramani & Lishitha, 2014). Rameezdeen and Rathnasabapathy (2006) stated that products in the construction industry are unique in nature and characteristics vary from project to project.

Projects are characteristically defined by the need to complete a task on time, to a given budget with appropriate technical performance and to standard quality. (Atkinson, 1999) Chan & Chan (2004) has defined the project success (PS) as achieving goal and objectives as specified in the project plan. A project is considered a success when it is completed in prescribed time and cost (Desai & Desale, 2013). Cost and time are the two key parameters, which play a significant role in PS (Ramanathan, Narayanan, & Idrus, 2012). The time success criterion could be measured in terms of schedule over/underrun as a percentage of the initial plan. Cost success can be measured in terms of meeting the budget and could be measured in terms of cost over/underrun as a percentage of the initial budget. Quality can be measured in terms of functional and technical specifications. In other words, the project must produce what it said it would produce (Baccarini, 1999).

Over the last 50 years, measuring a PS has become inextricably linked with projects (Atkinson, 1999). Pinto and Selvin (1988) explained ten internal success factors for every project as project mission, top management support, project schedule/plan, client consultation, technology to support the project, client acceptance, monitoring and feedback, channels of communication, characteristics of project team leader, and environmental events. Projects have tended to become more time-constrained and the

ability to deliver a project on time is becoming an increasingly important element to attain customer satisfaction (Cooke & Williams, 2013). Customer satisfaction has become one of the key issues for companies in their effort to improve quality in the competitive marketplace. It can be seen either as a goal or as a measurement tool in the development of construction quality (Kärnä, 2004) . A construction project (CP) is commonly acknowledged as successful when it is completed on time, within budget, and in accordance with specifications and to stakeholders' satisfaction (Nguyen, Ogunlana, & Lan, 2004).

With the increasing demand in the construction sector, people are increasingly passionate and expect more from the designer to visualise their dream space (Mustapha, Mohammad, Noorhani, & Abidin, 2013). In this context, Interior Design Projects (IDP) have changed dramatically since the sustainable design revolution of the 1990's (Bruckner, 2009). Interior design (ID) is all about how we experience spaces. It is a powerful, essential part of our daily lives and affects how we live, work, play, and even heal (New York School of Interior Design, 2016). ID is the art of making a space both comfortable and aesthetically pleasing (Mohotti & Kulawansa, 2014). IDP draw on many skills. The project team may include designers, architects, quantity surveyors, mechanical, electrical, heating, air-conditioning and ventilation specialists and building contractors (Design Business Association, 2003).

The profession of ID is just over 100 years old. Throughout these years, what began as the art of decorating, embracing form and function, has evolved by leaps and bounds into today's world of highly specialised areas of ID that require years of study and experience (Interior Designers for Legislation in New York (IDLNY), 2016). Credit for the birth of ID is most often given to the Ancient Egyptians, who decorated their humble mud huts with simple furniture enhanced by animal skins or textiles, as well as murals, sculptures, and painted vases (Ferebee & Byles, 1970). However, in the early 1990s, the term "Interior Decorator" was first used in America. The term "Interior Designer" was coined in the 1930s, by a magazine called "Interior Design and Decoration" (IDLNY, 2016).

The ID industry is just about to rise from its past, with an increasing demand in the building sector and the advancement of technology (Mustapha et al., 2013). The popularity and importance of ID have increased because of the increasing awareness of the role played by interior designers. Designers plan and organise the design of space to produce creative, technical & construction solution to achieve a perfect interior environment (Mohotti and Kulawansa, 2004). Design and management are activities that need to work together at certain stages and processes. Project planning, organising, leading and controlling stages are important; however, the design phase needs to be closely coordinated. During the design phase, the Interior Designer assesses the quantitative and qualitative needs of the client (Coleman & Magazine, 2002).

It has become an issue whether design and designing are responsive to the process of the project delivery. In other words, how well do Interior Designers manage interior projects? Hence, it is a prerequisite for interior designers to acquire the knowledge and understanding of project management (PM), technical and systems of work for the successful delivery of projects. The project lifecycle involvement by the interior designers needs to be executed through a lot of work processed and phases (Abdullah, Beh, Tahir, Ani, & Tawil, 2011). There are high demands for interior design architectural works, yet, still issues especially in managing interior projects keeping occurring. Nevertheless, there is no evidence stating about the unsuccessful interior project deliveries. This is because ID has always been seen as a finishing work or rather treated as a problem solving for building or architectural works (Haddad, 2014).

There is a plenty of research from literature on design, the interior design profession and interior design education, but few speak of the design process. When exploring the interior industry, it discovers that there are many issues bottom up in the construction stages especially on the interior scope of work and on design issues (Mustapha, Mohammad, Noorhani, Abidin, 2001). As Mustapha, Mohommad, Noorhani and Abidin stated, there are no findings discussing real issues in the interior design industry. However, in IDP as it closely involves construction, in this research study the issues faced in the construction industry with regard to delivery of IDP were discussed to support the research.

Every client's vision is to get the unique, innovative, quality and cost-effective design to their space. The performance of project delivery by the interior design firms vary. Time, cost and quality overruns are usual and too many resources are used to rectify the defects. The poor performance has been partially attributed to the inability of project participants work together effectively (Baiden, Price and Dainty, 2006). Odeh & Battaineh (2002) disclosed that the problems of the construction industry in developing economies can be nested in three layers as the problem of shortage or inadequacies in industry infrastructure: supply of resources, problems caused by clients and consultants, and problems caused by the incompetence of contractors. From previous studies in construction industry, the factors affecting successful delivery are found as finance and payment, poor contract management, changes in site management, shortage of materials, improper planning, preparation and approval of drawings, design changes, conflicts in work schedule, slow decision making, design errors, labour shortage, inadequate labour skills, site condition, weather, economic conditions and increase quantities. These factors were categorised into the client, contractor, consultant, material, labour, and external factors.

1.2 Problem Statement

A construction project is commonly acknowledged as successful when it is completed on time, within budget, and in accordance with specifications and to stakeholders' satisfaction. With the increasing demand in the construction sector, people are increasingly passionate and expect more from the designer to visualise their dream space. In IDP's planning, organising, leading and controlling stages are important; however, the design phase needs to be closely coordinated. During the design phase, the interior designer assesses the quantitative and qualitative needs of the client. Interior designers are required to acquire the knowledge and understanding of project management (PM), technical, and systems of work for the successful delivery of projects. The project lifecycle involvement by the interior designers needs to be executed through a lot of work processes and phases. When exploring the interior industry, it discovered that there are many issues bottom up in the construction stages, especially on the interior scope of work and design issues.

Delivery problems occur in many design projects and the magnitude of these issues varies considerably from project to project. Some projects are only time overruns, some are both time and cost overruns, and some projects are delivered with bad quality. Gigado and Niazai (2012) have mentioned that delayed results to the client as a loss of income due to the rental, which should be paid for the delayed period or due to the lack of production facilities during that period. They further stated that to the contractor, the delay is a higher overhead, material and labour cost since the project proceeds for a longer period than it was planned. In addition to that, Assaf & Al-Hejji (2006) stated that the time and cost have a linear relationship in which increasing time will increase the cost.

Identification of factors affecting successful delivery will be helpful to future consultants/contractors and for project owners to take precautionary actions and proactive measures to mitigate the issues and will help to ensure successful delivery of projects and to attain customer satisfaction. Hence, the research problem emerged through this study is "what are the factors affecting the successful delivery of interior design projects in Sri Lanka?"

1.3 Aim and Objectives

1.3.1 Aim

The aim of this research is to develop a model to mitigate the factors affecting the successful delivery of interior design projects (IDPs) in Sri Lanka.

1.3.2 Objectives

To achieve the above aim, the following objectives were identified:

1. Review interior design projects, their delivery and management related issues and mitigation measures,
2. Investigate the factors affecting successful delivery of IDPs,
3. Investigate the stakeholders responsible for the successful delivery of IDPs,
4. Propose measures to mitigate the factors affecting the successful delivery IDPs.

1.4 Methodology

A qualitative research approach was followed in achieving the research aim which is to identify the factors affecting the successful delivery of Interior Design Projects in Sri Lanka. A thorough literature study has been carried out gathering the information.

Interviews with subject matter experts were carried out using semi-structured interview guideline as the data collection technique. Factors affecting the successful delivery of IDPs were investigated through this survey. Manual content analysis was used for data analysis in the research. The findings were validated by experts related to the field by means of interviews.

1.5 Scope and Limitations

The scope of this research was only limited to completed residential and commercial Interior Design projects. As discussed above, interior design is still rising from its past. Therefore, interior designers in Sri Lanka are still establishing themselves in the construction industry. Hence, it is a challenge to find substantial number of interior designers in the field to conduct quantitative investigation. Thus, the study was limited to qualitative approach.

1.6 Chapter Breakdown

Figure 1.1 presents the structure of the dissertation and it further elaborates how each chapter contributes to achieving the above-stated aim and objectives.

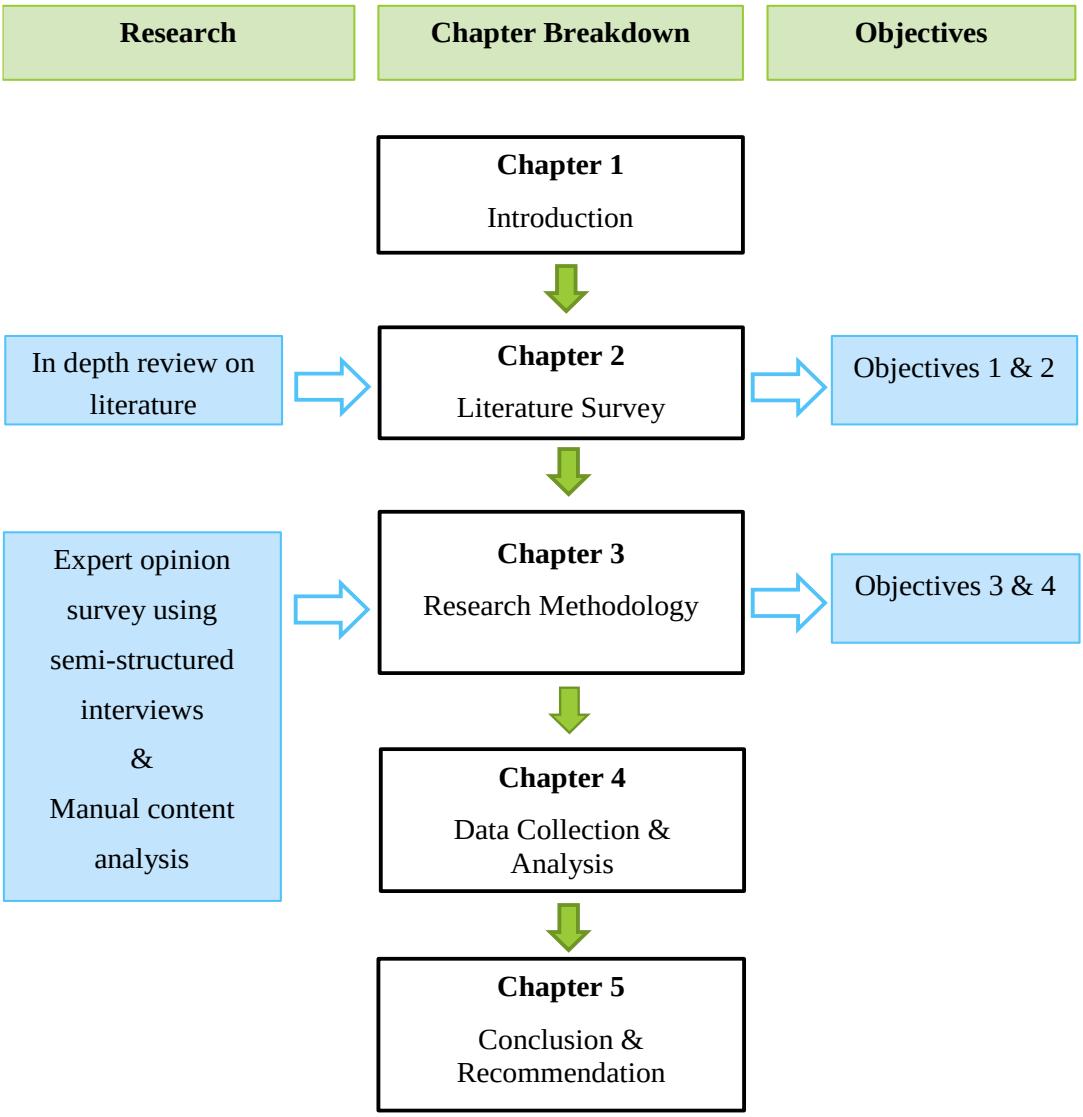

Figure 1.1: Chapter Breakdown

1.7 Chapter Summary

A brief background to the research topic, problem statement, aim and objectives of the research are stated in this chapter. Further, the research methodology, which was followed in achieving the aim and the objectives of the research and finally chapter breakdown of the research report is clearly described within the chapter.

CHAPTER 2

2 LITERATURE REVIEW

2.1 Introduction

The aim of this chapter is to explore the theoretical status and research issues through a comprehensive literature review to understand and establish the significance of the research problem. Firstly, the definition of the project, the concept of project success and construction lifecycle were discussed by illustrating project time, cost and quality management. Secondly, the history of interior design, the concept of interior design and their project management were discussed. Finally, factors affecting successful delivery of construction projects were identified through literature review to form a basis for empirical investigation on factors affecting successful delivery of IDPs in Sri Lanka.

2.2 Definition of Project

A project is a temporary endeavour to create its own output, service and results. The temporary nature of the project shows a clear start and end (Stojcetovic, Misic, & Sarkocevic, 2013). The end is reached when the project objectives have been achieved. Temporary does not mean that the period is short. Every project creates its own output. Repetitive elements may exist in project deliverables, but this repetition does not change the fundamental uniqueness of the project. A project can create a product that can be either a component of another item or its own end item, a function to perform services and produce results (PMBOK, 2004).

Turner (2009) has defined “a project as an endeavour in which human, financial and material resources are organised in a novel way to undertake a unique scope of work, of given specification, within constraints of cost and time, so as to achieve beneficial change defined by quantitative and qualitative objectives.”

As Jackson (2006) defined “construction project is a complex, unique and one-time effort, as numerous people, activities and requirements are involved to achieve the project goals”. It is considered an organised linear phenomenon, organising, planning, management can be done top down. However, if completing a construction project on budget and schedule frequently fails, it is possible that the process may not be predictable in order due to its nature. A more detailed study shows that construction is a complex, nonlinear and dynamic phenomenon, which often exists on the edge of chaos (Bertelsen & Koskela, 2002).

2.3 Concept of Project Success

Generally, project success can be referred to as the project accomplished by harmonising the triple constraints of time, cost and quality. According to the researcher Yeo (2002), project outcome has been divided into three statuses namely “Successful”, “Challenged” and “Impaired”. “Successful” projects are the ones completed on time, within the given budget with all required functions and features discussed and initially specified. “Challenged” projects through completed and operational, suffered budget overruns and/ or program slips and offered fewer functions and features than originally specified. The “impaired” projects are those cancelled or abandoned at some point during the development cycle.

In Belout and Gauvreau’s (2004) findings, they have considered that the project management triangle based on schedule, cost and technical performance is the most useful in determining the success or failure of a project. Apart from that, they added the notion of projects risk and the capacity to resolve problems encountered by the project team, which appear to be major elements in the evaluation of project success.

Similarly, Rosacker and Olson (2008) define the successful implementation of a project with three objective measures. First, the project was carried out in a timely manner. Second, the cost of the entire project was within the initial budget constraints. Third, the implemented solution includes functionality and is functionally requested by the client.

According to the study conducted by Whittaker (1999) project failure is defined as:

- The project budget was overrun by 30 percent or more; and or
- The project schedule was overrun by 30 percent or more; and or
- The project was cancelled or postponed because the planned benefit could not be demonstrated or delivered.

Turner (2004) has identified four necessary conditions for project success. Success criteria must be agreed with stakeholders prior to the start of the project and repeatedly at configuration review points throughout the project. A collaborative working relationship should be maintained between the project owner and the project manager. The project manager is empowered to give the project manager the flexibility to deal with unexpected situations while giving guidance on how the owner best accomplishes the project. Owners should be interested in project performance.

Belout and Gauvreau (2004) have proposed nine independent variables which affect the success of project namely, project mission, management support, project schedule, client acceptance, personnel, technical tasks, communication, monitoring and troubleshooting. The study states that although there was a link between project success and personnel factor, this factor did not have a significant impact on project success. They also confirm that the relationship between the independent variables and project success will be according to the lifecycle stage, project activity sector and the organisation structure.

Clarke (1999) has identified four factors as critical for the success of a project namely "communication throughout the project, clear objectives and scope, breaking the project in to bite size chunks and using project plans as working documents".

The lack of communication is cited as the greatest reason why many projects could not meet expectations. Successful communication helps to reduce unproductive effort, avoid duplication and eliminate mistakes. In addition, encourage teamwork, increase motivation, and ensure the involvement of all major players. As a result, it will be a project that is more likely to achieve the goal within the allocated time and resources.

According to the findings of Baccarini et al. (2004), risk management is an essential process of successful delivery. The study has identified 5 major risks which have an

influence in project outcome. The top 5 risks in order were personal shortfalls, unrealistic expectation, incomplete requirements, and the diminished window of opportunity due to late delivery. Other than that, the study has listed the following risks which have an influence on project outcome:

- Frequent changes requested by the client
- Poor production system performance
- Poor leadership
- Inadequate user documentation
- Lack of executive support
- Conflicts between client, contractor and poor quality of staff

The success of the project is widely discussed in PM literature. The best-known criteria for success criteria in project is the "Iron Triangle" which places cost, time, and quality at the center of project success. However, projects that are delivered within budget on time and meet scope specifications are not necessarily considered to be successful by key stakeholders (Shenhar & Dvir, 2007).

The triangle was named the 'Iron Triangle' because although the sides can shorten or lengthen, they are unbreakable (Stojcetovic et al., 2013). Centre to the concept of the 'Iron Triangle' is the mutual dependency between the three constraints: increasing quality will increase the amount of time needed, which will also lead to an increase in cost. A tight time schedule could lead to a decrease in quality and subsequent increase in cost (Morris & Sember, 2008).

To explore this further, the below study further discusses the time, cost, and quality aspects in projects.

2.3.1 Time Management

Duncan (1996) defines project time management as follows: "Project Time Management incorporates the procedures required to deal with the timely fulfilment of the project."

Project managers with the mission of administrating the project from start to finish will take benefit of time management skills and complete the work in the most efficient and cost-effective manner. The seven processes in the project time management knowledge area according to the PMBOK Guide area are, plan schedule management, define activities, sequence activities, estimate activity resources, estimate activity durations, develop a schedule and finally control schedule. The first six activities should be done during the planning stage of the project and the last activity is the responsibility of the project manager involved in the construction phase of the project.

Project time management is based mainly on planning, and then it's all control and execution. Planning for project schedules may stem from deadlines, customer demands, hard and soft logic, and a bit of prediction. Time management is often important for successful projects. (Atkinson, 1999). The most common cause of huge project budget is lack of schedule management. To determine the time required for a project, first define the time required to implement each activity of the project All projects can be broken down into several tasks. To prepare a project schedule, the project manager needs to know the task contents, the time required, necessary resources, and the order of execution. If time is essential, quality and cost should be harmonised. If project completion is accelerated, more resources will be used in the project and the cost will rise. Sometimes changing of time (schedule) will affect both, cost and quality (Morris & Sember, 2008). If a project must meet specific deadline quality could be cut to meet the accelerated time frame. When project duration is compressed there is a need for an increase in labour and more productive equipment which lead to the cost increasing (Stojcetovic et al., 2013).

2.3.2 Cost Management

According to the PMBOK "Project Cost Management incorporates the procedures required in arranging, assessing, planning, financing, subsidising, overseeing, and controlling costs so that the project can be finished inside the endorsed spending plan".

In addition, project cost management is a process of planning, estimation, budgeting, and controlling cost, so that the project can be completed within the approved budget to reduce the possibility of budget overrun (Saputra & Ladamay, 2011). There are

four processes in this knowledge area: planned cost management, cost estimate, budget decision and cost management. Cost management include: estimate costs (approximation of the monetary resources needed to complete project activities), determine budget (aggregating the estimated costs to establish cost baseline) and control (monitoring the status of the project and managing changes to the cost baseline) (Stojcetovic et al., 2013). Cost is important from an organisational and competitive point of view. All organisations are trying to maintain and improve quality and reduce costs. But this is very difficult to achieve at the same time. Quality and cost are related. For example, if you need to provide the highest quality products that define the characteristics, you need to invest a lot in every process that creates the product. Quality ideas, quality design, quality materials, and everything else need to create top products. There is a need for top process, materials, and cost, as can be seen at every stage of highest quality creation (Rezaian, 2011).

2.3.3 Quality Management

"Project Quality Management includes the processes and activities of the performing organisation that determine quality policies, objectives, and responsibilities so that the project will satisfy the needs for which it was undertaken. Project Quality Management works to ensure that the project requirements, including product requirements, are met and validated." (Rose, 2005)

Project quality management is all the processes and activities necessary to determine and achieve project quality. If the quality of the deliverables is bad, even the projects delivered within the budget or time will not succeed. Quality control is to identify the quality requirements that control quality and, accordingly, recommend changing the project as necessary. Piroozfar, Larsen, & Altan (2010) and Pan, Gibb, & Dainty (2007) highlighted that as the basis of construction being the design and specifications, quality of construction deliverables / delivery is essential, meeting the client's expectation of quality standards. Willborn & Cheng (1994) explained as "quality cannot be defined, if you try to define it, you capture less than quality and quality concept is beautiful. If it worked; it was that mysterious, individual, internal goal of each creative person". Moreover, as there are different cultures and different origins

of people around the world their perspective towards the life is different hence their understanding of quality and quality assurance is different from one another.

Powell & Brandon (1984) agreed with Willborn and Cheng's (1994) moving target definition on quality and further described the quality in relation to the time as following; "Building quality is not a thing which is judged at a single point in time and thereafter accepted without challenge as it is continually under review throughout its lifespan and so far every unit of time in a statement of building quality is extremely difficult index." However, Brandon and Powell disagree with the Willborn and Cheng's cost relatively and mention quality as a thing that cannot be measured or priced.

2.4 Construction Lifecycle

The common phases of the lifecycle of the project consist of four phases: conceptual planning and feasibility study, design and engineering, construction, operation and maintenance (Kartam, 1996).

Besides that, Alshubbak, Pellicer, & Catalá (2009) classified the project lifecycle into five stages of feasibility stage, design stage, construction stage, development stage, dismantling stage. The first phase is a feasibility phase consisting of economic, worker safety accompanying construction work, technical aspects, basic information at all stages of construction. The second stage is not only focused on the design but also in the design phase, including project details, initial test suggestions, calculation of each element of the structure, drawings, specifications and estimated cost. The third is the construction phase, which includes two sub-phases of execution and inspection. During the execution phase, construction activities are included until the project is completed. Although inspection is required at the inspection stage, there are also operations that are continuously performed to ensure that the construction work is performed properly and guarantees safety and environmental quality. The next phase is the development phase consisting of the use and maintenance activities after completion of the evaluation phase. The demolition phase is the last phase of the

service lifecycle and the activities of dismantling and removing facilities from services depend on their use and expected lifespan.

In another survey conducted by Saad & Engineers (2011), the project lifecycle is divided into five stages, consists conceptual planning and economics phase, engineering and functional design phase, construction and completion of the project phase, and operation and utilisation phase. Concept planning and feasibility studies include several factors, such as analysing the concept of a project, investigating relevant technical and economic issues, and identifying the environmental impact. The second stage is engineering and design, divided into two main stages: preliminary engineering and design, detailed engineering and design. However, both of these stages are emphasised in relation to architectural concepts and structural analysis, which guarantees that each structure follows the actual specification. In phase three, it is necessary for all design documents submitted to the contractor by the designer to be prepared. Next, at the construction stage, execution of the project began until the project was completed with the specified time, cost and quality. At the final stage, since the project concept has developed, the operational lifetime is determined at the start of the project. Occasionally, the owner may perform periodic maintenance of the project. However, this study has four stages in the project lifecycle consisting of planning, design, construction and finishing as shown in Figure 2.1 (Rahman, Karim, & Tarmizi, 2013).

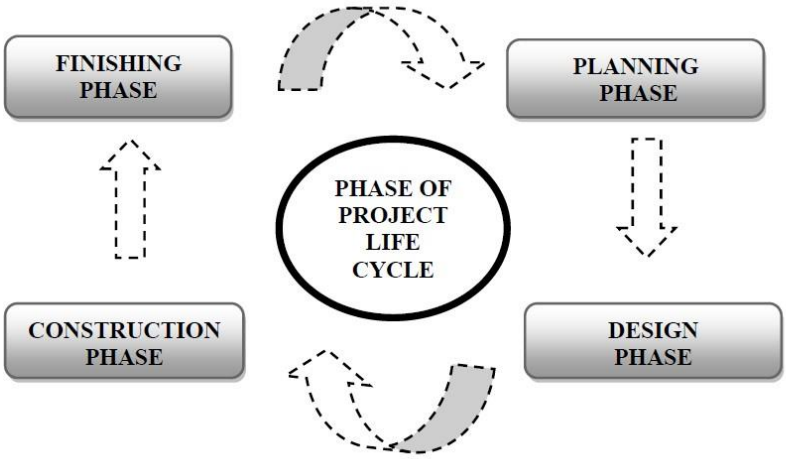

Figure 2.1: Construction Lifecycle

(Abdul Rahman et al., 2013).

- Planning phase: During the planning phase, emphasise a few clear approaches, such as project scope, objectives, objectives, resources, time and cost estimates, and deliverables. This is to ensure that project execution is within plan, schedule, and budget.
- Design phase: At this stage, detailed planning and drawing of the entire project are required. Designers are responsible for providing drawings according to the requirements of the owner and can change before the change is approved.
- Construction phase: Most of the project work is done at the construction stage. This phase consists of executing the project plan, communicating among other parties, reporting the progress of the project, and controlling time, cost and quality of work.
- Finishing stage: The finishing stage is the final stage of construction work. Finishing work of the entire building and finishing work to enhance the appearance of the building and the aesthetic appearance of the interior are necessary. Types of finishing work include plaster, flooring, painting, wallpaper, and glazing

2.5 History of Interior Design

The profession of ID runs back to a history of more than 100 years. During this period there had been a rapid change in the interior design, which it has become a highly specialised area within the years of study and experience of the basics of decorating, embracing form and function of ID. (Interior Designers for legislation in New York, 2016).

The Ancient Egyptians gain the merit for giving birth to the concept of Interior design. They ornamented their mud huts with basic furniture covered with animal skins, murals, sculptures and painted vases. The stunning gold ornaments found from the Egyptians displayed the exclusive decorations used by the powerful Egyptians.

Influence of Egyptian art of interior decorating and accessorising took place with the civilisations of Roman and Greek, and as a result, both Roman and Greek celebrated their pride with their developments of domed roof public buildings. Greeks ornamented their wooden furniture ivory and silver ornamentation, whereas the Romans gave special focus on combining beauty and comfort, which home interiors brought wealth and status of Greeks. The Romans used exclusive furniture from the finish of stone, wood or bronze which was accentuated with cushions and tapestries. On the other hand, both the Romans and Greeks made use of vases, mosaic floors and wall paintings or frescoes to keep the beauty of the Interior spaces. (Interior Design School, 2002).

In the early 1900s, the term "Interior Decorator" was first used in the United States (Ireland, 2018). Most of the decorators at the time did not have an academic background, but the best among them is a combination of elegance, common sense, and natural talent to interpret and solve problems such as size and ratio (Wealleans, 2006). In 1913 Elsie de Wolfe published the first interior design book "The House in Good Taste". Dorothy Draper was the first documented commercial interior decorator, founded her design company in 1923. The magazine was not printed between 1943 and 1952, but the competing magazine "Interiors" claimed to use only the term "interior designer" rather than "decorator". It also recognized the work of architects and engineers as well as designers. "Interior" announced more contract work than housing construction. When the magazine "Interior Design and Decoration" resumed publishing, it deleted the term "and Decoration" from that name (Pile, 2005).

The history of interior design is becoming increasing globally, and at the same time, it continues to evolve rapidly in the world that requires the detailed focus of specialised fields of important knowledge. Interior design specialties are widely accepted as a part of the standard of the building environment where public health, safety, welfare is regarded as the most important. This includes aging in place, universal design, healthcare design, education and institutional design, professional workplace design and many more (Ferebee & Byles, 1970).

2.6 Interior design projects and their management

Today people are conscious of the surrounding space. Sometimes it is very sensitive to the needs of their space. In the development of unique skills and knowledge in design, the work of professional interior designers is said to be sensitive to people and their environment (Ulrich, 1991). However, it is a question whether design and design correspond to the project implementation process. In other words, how well do interior designers manage interior projects? Since the core business of the interior designer is in the design, construction and management of the project, it is important to master knowledge and understanding about the project management, technology and working system in order to make the project management successful. In addition, the involvement of the interior designer in the project lifecycle must be carried out through many work processes and phases (Mustapha et al., 2013).

Project management for interior projects demands full commitment, knowledge and skilful understanding of the process to achieve the project's objectives. Although interior designer must have a skill in design, they should not be left behind in the technical skills and requirement of projects while interpersonal communication and management strategies are a must (Noorhani & Hassan, 2009). However, interior designer's job scope not limited mealy to design; hence it involves a complexity of tasks and processes of work similar to architecture, and yet it limited to the enclosed space.

The scope of the interior design work also includes construction and completion of the finishing stage of the project. At this stage, highly fragmented interdisciplinary activities are carried out. Therefore, it is important to have appropriate project management knowledge and understanding so that the interior designer can manage the process accordingly (Harwood, 1991). The process can only be successfully conducted through planning, executing, monitoring and controlling the project till the end. Having the right and expected level of knowledge and understanding on project management and technical is a must. Thus, the coordination system between the work, parties involved and also integration system amongst them can be at least established by having an appropriate scope of work. Therefore, interior design scope of work is

imperative as a fundamental framework or guideline for interior design practitioners successfully to convey and deliver the project to meet the client's needs and requirements (Mustapha et al., 2013).

Nevertheless, the scope of the interior design work also involves construction and completion of the project's completion stage. This phase is accompanied by multiple fragmented, multiple disciplinary activities. Therefore, the interior designer is important to understand the appropriate project management knowledge and processes so that they can be properly managed. This process will only succeed until the planning, execution, monitoring and termination of the project. It is important to have the correct level and expected level of knowledge and understanding of project management and technology (L. Jones, 2008). Consequently, the coordination system between the operations, stakeholders and the integrated system between them can at least be established by having an appropriate working scope. Therefore, the scope of interior design is essential for communicating and succeeding projects to meet client needs and requirements as a basic framework or guidelines for practitioners of interior design (Mustapha, Mohammad, Noorhani & Abidin, 2013).

2.7 Design concept and process of interior design projects

Good design starts with a good design concept. The design concept is an idea behind the design. It is how the designer solves the design problem. The concept leads to "colour" and "type" choices. Choose an aesthetic one and decide the grid. All design decisions revert to the directional concept. The design concept is the framework of all design decisions. Developing a design is something of an individual process. There's no one right way to generate an idea and what works for one project won't necessarily work for another (Lee & Kim, 2010). How long the design process takes? This is a question every client asks. We live in a society that has come to expect that everything is available immediately. Quality design not only takes time, but it also requires time. It requires thoughtfulness, it requires skills that take a year to develop. Real listening involves more than being in the same room while a client is talking. It requires absorbing more than words being spoken. Knowing how to elicit the right information

from right people at the right time and effective communication is critical, not just with clients but also with architects, contractors, sub-contractors, landscape architects, furniture builders and with artisans (Jones, 1992).

In average turnkey interior design project from inception to completion takes 10-12 months and that is most everything goes as planned. There are many variables that affect the time required to complete a project. Below are the phases of the design process (Mustapha et al., 2013).

2.7.1 Phase I - Meeting/Planning the project

Discuss in confidence the client's requirements. This is where the designer knows about customers and their desire for the new space. At this stage, the designer listens to the number of related questions and discusses the project budget and the project duration (Dvir, Raz, & Shenhar, 2003).

In this phase, the designer's duty is to describe and collect all the services, required data and information's to determine the project is feasible or not and then, to begin with preliminary conceptual planning and specifications. The planning of a project starts after stakeholders discussed what must be done, who will do it, how long will it take and how much will it cost.

Robichaud & Anantatmula (2010) defines the planning phase as follows: "Planning is establishing priorities. Planning provides a map and direction for the activities that lead us to achieve our goals, planning makes decision making simpler because it provides a yardstick to measure against. Without a plan, it is easier to fall into the habit of making no decision".

The Planning phase is also called a responsibility-centre management that acts towards setting the goals, objectives and strategies. It is also advisable to set the location of the initial interview on the job site if possible so that the designer can see some of the particulars and assess them and gathering all the visual clues possible (Forcada, Fuertes, Gangolells, Casals, & Macarulla, 2013).

2.7.2 Phase II - Design Development

Propose a summary of the design style of the project and propose several design solutions for client review based on budget. This includes new interior finishes such as new space plan, furniture plan, colour palette, painting, wall hanging, flooring, ceiling, window treatment, moulding, cabinet and countertop. This is also space custom-designed pieces or treatments is selected for the client's review. After the designer finishes sourcing the job, meet with the client to review plans and finish selections and make any refinements needed. Then finalise design drawings and meet once more before starting the final detailing of plans and ordering or making furniture/equipment (L. Jones, 2008).

2.7.3 Phase III - Construction documents and Administration

This phase is all about details. Designer detail out all the drawings to contractors know exactly what design intend is and has accurate drawings to price out the job. After receiving several contractor's bids and their proposed timelines, designer together with client assist in reviewing each to ensure accuracy and fair pricing. Also, in this stage designer draft and submit a purchase order for all equipment's, interior solutions and furniture. One other important thing in this stage is signing the contract or agreement before commencing the work and to prepare a work schedule to monitor the project timelines (Goedert & Meadati, 2008).

2.7.4 Phase IV - Construction/Installation

Constriction phase is all about waiting to see the actual image. The designer is waiting for all pieces to arrive and to do an inspection, monitoring and repair. In addition to the time required for normal production and shipping, in order to ensure that each work arrives as intended. Damage to cargo is common and must be properly handled from minor repairs to complete replacement. Sometimes it is manufactured incorrectly, or the order is incorrect and corrections have to be made (Goedert & Meadati, 2008). There are also more ways, but it is a designer's job to eventually handle everything to experience what customers think seems to be a seamless and effective process.

Designers are living for the construction phase. They see their ideas lively. The designer should frequently visit the site to oversee subcontractors and ensure that the work is on schedule as planned. It is also important to meet customers at the construction stage and update them. Project supervision is mandatory at this stage. The project not only requires the supervision of the site to ensure proper follow up of drawings and specifications but also unexpected problems that may occur. At the final stage where you need to check the colour of the paint, when the furniture is being delivered, and when small details need constant attention (Rieger, Stanley, & Traynor, 2014).

2.7.5 Phase V - Project Completion

Before concluding the time together, designer to do a final walk through with the client and prepare a list of any remaining small items needing attention. Also, designer discusses and advice the care and maintenance of new finishes/furnishings and equipments. It's the time to settle all payments and close the project (Design Council of United Kingdom, 2010)

2.8 Project Management for Interior Design

The Design Council of the United Kingdom (2010), outlined the interior design process as winning a project brief, research, creative design, building a team, specifications and completion. To achieve the project activities, project management for interior projects demands full commitment, knowledge and skilful understanding.

Project management refers to the discipline of organising, planning, motivating as well as controlling resources to achieve specific goals. It's considered as a temporary effort with a defined beginning and end. This is a technical definition of project management and applies to interior design project management (Gorb, 1990). Interior design is considered one of the most challenging and innovative challenges for designers, depending on the specific needs and requirements of the client (Anderson, Barbara, Peggy & Dudek, 2007). However, interior designer's job scope not limited only to design, it involves the complexity of tasks and processes of work similar to architecture, and yet limited to the surrounded space. Just like the architecture, interior

design job scope also involves with construction and finishing phases of the projects. These phases involve very much fragmented and multi-disciplinary activities, therefore for interior designers also it's very crucial to have appropriate knowledge and understanding of managing a project through the different stages accordingly. It could be successful only by managing the planning, executing, monitoring and controlling stages properly until the end. Therefore, interior design scope of work is imperative as a fundamental framework of guideline for interior design practitioners successfully to convey and deliver the project to meet the clients need and requirements (Mustapha, Mohomad, Noorhani and Abidin, 2013)

Also, Noorhani 2009 stated that interior designers need to execute work systematically and to make the job coordinate easily also to learn to manage issue-less projects. Problems and issues always arise mainly during the construction stage. It may arise due to many reasons such as the contractor's defective work, client changes or designer's inaccurate details. Therefore, interior designers must get the knowledge and skills of project management.

2.9 Factors affecting successful delivery in construction projects

"A project is a temporary endeavour undertaken to create a unique product, service or result" (PMBOK, 2008). One of the biggest problems of project managers is to harmonise project cost, time and quality. It is difficult to achieve this in every project because cost, time and quality are related to how one influence changes to the other two. Project managers usually try to balance the three when achieving the project goal, but they may make trade-offs among the three during project implementation in order to meet objectives and satisfy customers (Saputra & Ladamay, 2011).

There are many examples in practice that projects were delivered on time and within budget but failed to meet the expectations of end users. In every project, the quality of the deliverables is expected. Depending on the details and specifications set by the customer, the level of quality expected is determined. A project is a one-time task that is constrained by time, cost and quality, and its success depends on how well these

constraints are balanced. Very often project managers try to maximise project quality within a given deadline and budget (Stojcetovic et al., 2013).

Chan and Kumaraswamy (1997) emphasised that delivering the project timely to the level of the quality standard specified by the client within the budget is an indicator of the success of the project delivery. Failure to achieve target time, budget cost, and specified quality will cause various unexpected adverse effects on the project. Normally, if the project is delayed, the project will be extended or accelerated, resulting in additional costs.

Moore et al. (1992) stated that a construction project involves so many parties such as owners (client), designers, construction main contractors, subcontractors, maintenance contractors, and material suppliers, that some interface problems can arise, for example, the lack of cooperation, limited trust and ineffective communication leading to an adversarial relationship among all these project stakeholders. Likewise, Odeh and Battaineh (1997) identified eight (8) major groups and their factors which affect the successful project delivery:

1. Customer related factors: financing and payment of finished work, owner interference, slow decision making, and unrealistic contract period by the owner.

2. Contractor-related factors: delay due to subcontractors, site management, inadequate construction methods, inappropriate planning and construction error, and inappropriate contract experience.

3. Consultant related factors: contract management, drawing creation and approval, quality assurance, waiting time for testing and inspection approval.

4. Material related factors: lack of material quality and materials

5. Labor and equipment related factors: labor supply, labor productivity and equipment availability and failure.

6. Factors related to the contract: mistakes, mistakes, or inconsistencies in the order contents of the contract.

7. Factors related to contractual relationships: major disputes and negotiations under construction, inappropriate overall organizational structure linked to the project, and lack of communication between the parties.

8. External factors: weather conditions, changes in regulations, problems with neighboring residents and unexpected location conditions.

Studies have been carried out by various authors considering above mentioned eight major groups and have identified factors affecting successful construction project delivery. Factors identified by such authors are mapped & given in Table 2.1.

Table 2.1: Summary of factors affecting successful project delivery

		Author																							
#	**Factors**	**[1]**	**[2]**	**[3]**	**[4]**	**[5]**	**[6]**	**[7]**	**[8]**	**[9]**	**[10]**	**[11]**	**[12]**	**[13]**	**[14]**	**[15]**	**[16]**	**[17]**	**[18]**	**[19]**	**[20]**	**[21]**	**[22]**	**[23]**	**[24]**
1	Poor Communication	x	x			x		x			x				x	x		x			x		x		
2	Payment Problems	x	x		x			x		x	x			x	x	x		x	x		x		x	x	
3	Lack of experience/ Skills/ low productivity of labour	x	x	x							x					x			x				x	x	x
4	Shortage of materials in the market	x	x								x					x			x		x		x	x	x
5	Delays and incomplete drawings or specifications	x	x	x			x	x			x					x					x		x	x	x

		Author																							
#	**Factors**	**[1]**	**[2]**	**[3]**	**[4]**	**[5]**	**[6]**	**[7]**	**[8]**	**[9]**	**[10]**	**[11]**	**[12]**	**[13]**	**[14]**	**[15]**	**[16]**	**[17]**	**[18]**	**[19]**	**[20]**	**[21]**	**[22]**	**[23]**	**[24]**
6	Delays in approving samples/ materials	x	x					x								x				x			x	x	
7	Changes in the design frequently	x	x	x					x		x					x			x		x		x	x	
8	Construction mistakes/ defect work/ lack of quality	x	x	x		x		x			x		x			x		x					x		x
9	Shortage of site labour	x	x								x					x			x				x	x	
10	Project Planning	x	x									x			x	x					x		x	x	
11	Unrealistic delivery dates	x	x	x												x					x				
12	Poor site condition	x	x								x					x					x		x		

		Author																						
#	**Factors**	**[1]**	**[2]**	**[3]**	**[4]**	**[5]**	**[6]**	**[7]**	**[8]**	**[9]**	**[10]**	**[11]**	**[12]**	**[13]**	**[14]**	**[15]**	**[16]**	**[17]**	**[18]**	**[19]**	**[20]**	**[21]**	**[22]**	**[23]**	**[24]**
13	Weather Condition	x	x					x			x					x			x				x	x	
14	Contract modifications or mistakes	x	x								x					x					x				
15	Claims and disputes	x	x	x												x								x	
16	Top management support																				x	x			
17	Relationship with client	x	x																		x		x		

[1] Odeh and Battaineh (2002) ; [2] Sambasivan, Yau Wen Soon (2006) ; [3] Mahdi and Alreshaid (2005) ; [4] McCord,Ms and Gunderson (2013) ; [5] Hinze and Tracey (1994) ; [6] (Wang & Huang, 2006) ; [7] Al,Hazmi (1987) ; [8] Williams (2003) ; [9] Arditi, Chotibhongs (2005) ; [10] Alaghbari, & Ernawati (2007) ; [11] Zeng, An, & Smith (2007) ; [12] Yang & Peng (2008) ; [13] Cheah & Chew (2005) ; [14] Othman & Ahmed (2013) ; [15] Assaf and AL-Hejji (2006) ; [16] Cook and Williams (2004) ; [17] Sandun KK (2009) ; [18] Koushki, Al-Rashid (2005) ; [19] AL-Hammad (1993) ; [20] Toor & Ogunlana (2008) ; [21] Muller and Jugdev (2012) ; [22] Sweis, Hammad and Shboul (2008) ; [23] Jayawardena and Pandita (2003) ; [24] Algabari et al. (2007)

2.9.1 Poor communication

“Ineffective communications are the primary contributor to project failure one-third of the time and had a negative impact on project success more than half the time.” (PMBOK, 2004)

Communication is the process of flowing information from one to another. Communication among the project stakeholders could be any of modes such as verbal i.e. face to face or by phone calls or written such as normal mail, facsimile or other means (Tayeh, 2009). Since there are many parties involved in a project such as a client, designer, contractor, sub-contractor, the communication between the parties is very crucial for the success of the project. Proper communication channels between various parties must be established during the planning stage. Any problems with communication can lead to severe misunderstanding and therefore, delays in execution of the project (Sambasivan and Soon, 2007).

Haddad (2013) explained communication is an important element of the overall design process, especially at the rough design stage or the so-called comprehensive stage, since the design concept is related to the first client interview that described quantitative and qualitative goals , The success of the project is directly related to the ability to listen to the established objectives of the designer and respond to it.

2.9.2 Payment Problems

“Payment problems have continually raised grave concerns in construction industries throughout the world” (Wu, Kumaraswamy & Soo, 2008). Construction work costs a lot of money, and most of contractors are very difficult to bear the daily construction costs when payment is delayed. Particularly for financially unsound contractors, due to insufficient cash flows to support construction costs, delay in payment from customers may delay the progress of work (Sambasivan & Soon, 2007).

2.9.3 Lack of skills/ Low productivity of labour

In a construction project, the main contractor’s superintendent is in charge of all job site operations. He is responsible for scheduling subcontractors, control, quality check-

up and safety control matters, working hours, job site access, inspections (McCord and Gunderson, 2013). According to the subcontractor's success heavily depend on the capabilities of the particular project manager. Odeh and Battaineh (2002) indicated that a contractor with insufficient experience cannot plan and manage the projects properly and this can lead to unsuccessful project delivery. Therefore, it's mandatory to check their past experiences and skills before awarding the project.

2.9.4 Shortage of materials in the market

Materials on time with the right quantity and right quality is essential for the construction process. Shortage of material during the construction period was highlighted as the most critical factor affecting productivity. Shortage of material at the site could happen mainly due to contractors' liquidity problems, where many contractors have the insufficient finance to procure the necessary materials. In addition, when suppliers have previously experienced a lack of payment, they may hold delivery until payment has been made. Also, lack of material may be due to an incompetent project manager who gives inadequate priority to material procurement and has insufficient knowledge of materials, including appropriate substitutes. Other causes were imported material and poor coordination between site and office (Makulsawatudom and Emsley, 2001).

2.9.5 Delays and incomplete drawings or specifications

One of the most common issues impacting construction projects is inadequate or incomplete design documents (Interface Consulting, 2009). Clear work-drawings and specifications are more important for the effective execution of the construction work because it provides exactly what need to be done. If the work-drawings are incomplete or unclear it will create problems during the construction stage and will affect cost, rime and quality of the project. Alinaitwe et al. (2007) cited that incomplete drawing affecting construction productivity. Huang et al. (2008) mentioned unclear details in the drawings will lead to conflicts between designer and contractors.

2.9.6 Delays in approving samples/ materials

Approving the samples/materials should be done either by designer or client. The contractor, due to poor arrangement efficiency may delay the providing samples to the designer or to the client for approval. In some cases, it gets a delay in approving by designer or owner of the project. In such case, problems may arise between parties and it affects the delivery of the project on time (Al-Hammad, 1993).

Al-Hazmi (1987) stated that when the subcontractor finishes a section of his work, he should submit it to the approval of designer. If the designer accepts the work, in retune designer will submit it to the owner. The owner must approve the work before commencing the remaining portion of work.

2.9.7 Changes in the design frequently

The design process is a process that performed a series of interactive steps to consider, describe and justify increasingly detailed solutions to meet the needs of the clients. Choy and Sidwell (1991) cited design change is defined as any change to the scope of work which is descriptively listed in the contract document before instigation the project. “In the construction industry, a change refers to an alternative or a modification to pre-existing conditions, assumptions and basic information, or requirements. It includes work, time cost and method of performance” (Gharaee, 2012).

Suleiman and Luvara (2016) cited different stakeholders requesting changes during the construction stage due to different reasons. Those changes are categorised into 7 major groups as owner factors, design consultant factors, managing consultant factors, contractors factors, political and economic factors, environmental factors and third party factors.

2.9.8 Construction mistakes/ defect work/ lack of quality

The mistakes during the construction stage can be due to accidents, inadequate planning or miscommunication between parties. Whatever the reason, it can have a huge impact on the progress of the project (Sambasivan & Soon, 2007).

2.9.9 Weather Condition

Incidents known as Acts-of-Gods are natural reasons, which cannot control by human beings such as weather problems, geological problems (Huang et al 2008). Severe weather conditions may make it difficult to perform certain construction activities as planned. As a result, quality of the work or duration may get delay due to this reason.

2.9.10 Claims and disputes

As cited by Xiao et al. (2009), identification of the main source of problems in the construction relationship, which are likely to result in disagreements or disputes between two parties is vital. Sambasivan & Soon (2007) cited "client related, contract related, contract relationship related, and external factors have an impact on the disputes that arise during the course of the project. Factors such as delay in the payment, frequent owner interference, changing requirements, lack of communication between the various parties, problems with neighbours and unforeseen site conditions give rise to disputes between various parties. The disputes, if not resolved amicably, can lead to arbitration or litigation."

2.9.10.1 Arbitration

"Client-related and contract relationship-related factors escalate disputes to be settled by the arbitration process. A competent third-party can settle the disputes amicably without going to the court" (Sambasivan & Soon, 2007).

2.9.10.2 Litigation

"Client-related, labour-related, contract-related, contract relationship-related, and external factors escalate disputes to be settled by the litigation process. The parties involved in the process use litigation as a last resort to settle disputes" (Sambasivan & Soon, 2007).

2.9.11 Top management support

Top management support is essential for achieving the desired quality in projects. It is the top management's prerogative to set all the policy issues and control resources. In

addition, top management arranges training of human resources involved in the project and they have a big role to play in (Jha & Iyer, 2006). Also, Zwikae (2008) cited top management support is considered to be among project management critical success factors (CSFs). This means that the more top management processes are practised in organisations, the higher the level of project success is.

2.10 Mitigation Measures

The mitigation measures for the above identified factors were reviewed through literature and summarised in Table 2.2.

Table 2.2: Factors and Proposed Mitigation Measures

Factors affecting success of project deliveries	**Mitigation Measure**	**Author**
Poor Communication	Proper communication channels between various parties must be established during the planning stage.	Sambasivan and Soon (2007)
	Avoid delays in responding to contractor's queries as well as the approval the submitted submittals and shop drawings.	Marzouk & Rasas (2014)
Relationship with client	Formal relationships among project parties should be clearly identified, as well as roles and responsibilities.	Assaf & Al-Hejji (2006)
Lack of experience/skills/low productivity of labour	To check their past experiences and skills before awarding the project.	Odeh and Battaineh (2002)
Delays and incomplete drawings or specification	Making sure documents are complete, clear and free of errors and/or contradiction.	Tayeh (2009)
Construction mistakes/ defect work/ lack of quality	Choosing a consultant to the project with sufficient experience in the field of work and has a good reputation.	Chan & Kumaraswamy (1997)

Factors affecting success of project deliveries	Mitigation Measure	Author
Poor site condition	Development of a good system for site management and supervision also develops effective planning and scheduling for the project.	Assaf & Al-Hejji (2006)
Payment problems	Ensure the funds are available or adequate arrangements for funds are made before projects are started.	Fugar and Adwoa B. Agyakwah-Baah (2010)
Project Planning	Obtaining the required approvals for the project from the relevant authorities and ensure the availability of the necessary funding.	Mansfield,Ogwa & Doran (1994)
Unrealistic delivery dates	Specification of a realistic duration in the contract for the contractor to execute the project.	Marzouk & Rasas (2014)

According to the literature review findings, proper communication, avoiding delays, establishing formal relationships, checking past experience and skills, documentation, choosing experienced consultants, developing proper systems for site management, ensuring funds are available, and obtaining required approval before starting the projects were identified as mitigation measures for future projects.

2.11 Summary

This chapter was mainly focused on identifying the current knowledge on the research areas and defined the gap between the current literature and subject to be researched. The literature was gathered through local and foreign researches, journal articles, conference papers, books and other reliable sources.

First identified the definition of the project, the concept of project success and construction lifecycle were discussed by illustrating project time, cost and quality

management. Secondly, history of Interior design, Interior design and their management and project management for Interior design were discussed. Finally, factors affecting successful delivery of projects were identified from the literature review.

CHAPTER 3

3 RESEARCH METHODOLOGY

3.1 Introduction

Research Methodology refers to the principles and procedures of logical thought processes which are applied to a scientific investigation. It is the entire process ranging from theoretical underpinning to the collection and analysis of data (Fellows & Liu,2008). This research methodology was initiated with the identification of the research problem and subsequently the aim and objectives.

This chapter commences by depicting the research design, which concentrates on research design, research approach and research techniques. Research technique conceives both data collection and data analysis techniques. Following is the discussion on the research process that has been adopted.

3.2 Research Design

The research design is the fundamental plan for the research which links research problem with data (Punch, 2005). The author further mentioned that the strategy, framework, entity which should gather data and method of collecting data should be addressed in a research design. Moreover, Bean (2011) has stated that research design depends on what to be studied and what the researcher wants to observe. Further, Maxwell (2004) declared that in order to attain the aim and objectives of a research through the design, research approach and techniques are to collaborate.

The design of this research includes, initial study, literature survey, expert opinion survey, data analysis, developing an approach and validation of research findings respectively.

3.3 Research Approach

Research approach organises research activities and arranges the data collection in order to achieve research aims (Thurairajah, Haigh, & Amaratunga, 2007). Yin (2009) introduced two types of research approaches as Qualitative and Quantitative. Qualitative and quantitative approaches should not be viewed as rigid, distinct categories, polar opposites, or dichotomies. Instead, they represent different ends on a continuum. A study tends to be more qualitative than quantitative or vice versa (Creswell, 1994). A qualitative approach is subjective in nature whereas the quantitative approach is objective in nature. Amaratunga, Baldry, Sarshar and Newton (2002) debate over the relative virtues of the quantitative and considerable impetus of qualitative methodologies. The selection of a research approach is based on the nature of the research problem or issue being addressed and the type of information or data required by the researcher.

Amaratunga et al. (2002) highlighted the advantages allied with the quantitative approach as, comparison and replication are allowable, independence of the observer from the subject being observed, reliability and validity may be determined more objectively than qualitative techniques and generally reduces the whole to the simplest possible elements in order to facilitate analysis. In contrast, Yin (2011) argued that the approach is limited by the inability to establish necessary research conditions, the difficulty of drawing adequate sample respondents, obtaining high response rate and being devoted to studying past not the ongoing events.

Yin (2013) further stated that although the qualitative approach requires details and in-depth information, qualitative research can accommodate distinct advantages. Yin (2011) explained the advantages as:

- Could focus on a specific set of people,
- In-depth study on broad topics,
- Offer greater latitude in selecting topics, and
- Representing the views and perspectives of the people.

In contrast, Amaratunga et al (2002) stated the factors that militate against the use of qualitative approaches in practice as, the volume of data, the complexity of analysis. Further, the researcher recognised that purely qualitative research may neglect the social and cultural construction of the variables studied.

However, this research was conducted under the qualitative approach by considering its advantages over quantitative approach. In-depth, expert opinion was generally required since the research topic associated with finding the solution for delivery problems in Interior design projects in SL and to get the expert opinion from designers, client, sub-contractors and to discover who is responsible for the issues. The information gathered were mostly the opinion evidence and needed to be evaluated in a descriptive way. Hence, the research necessitated the qualitative research approach.

3.4 Research Process

There is not any single, accepted process of conducting a qualitative research. Indeed, it's depending upon the ontology, epistemology, purpose and the goals of the research (Ritchie et al., 2014). The research process which was developed by considering the above facts is shown in Figure 3.1.

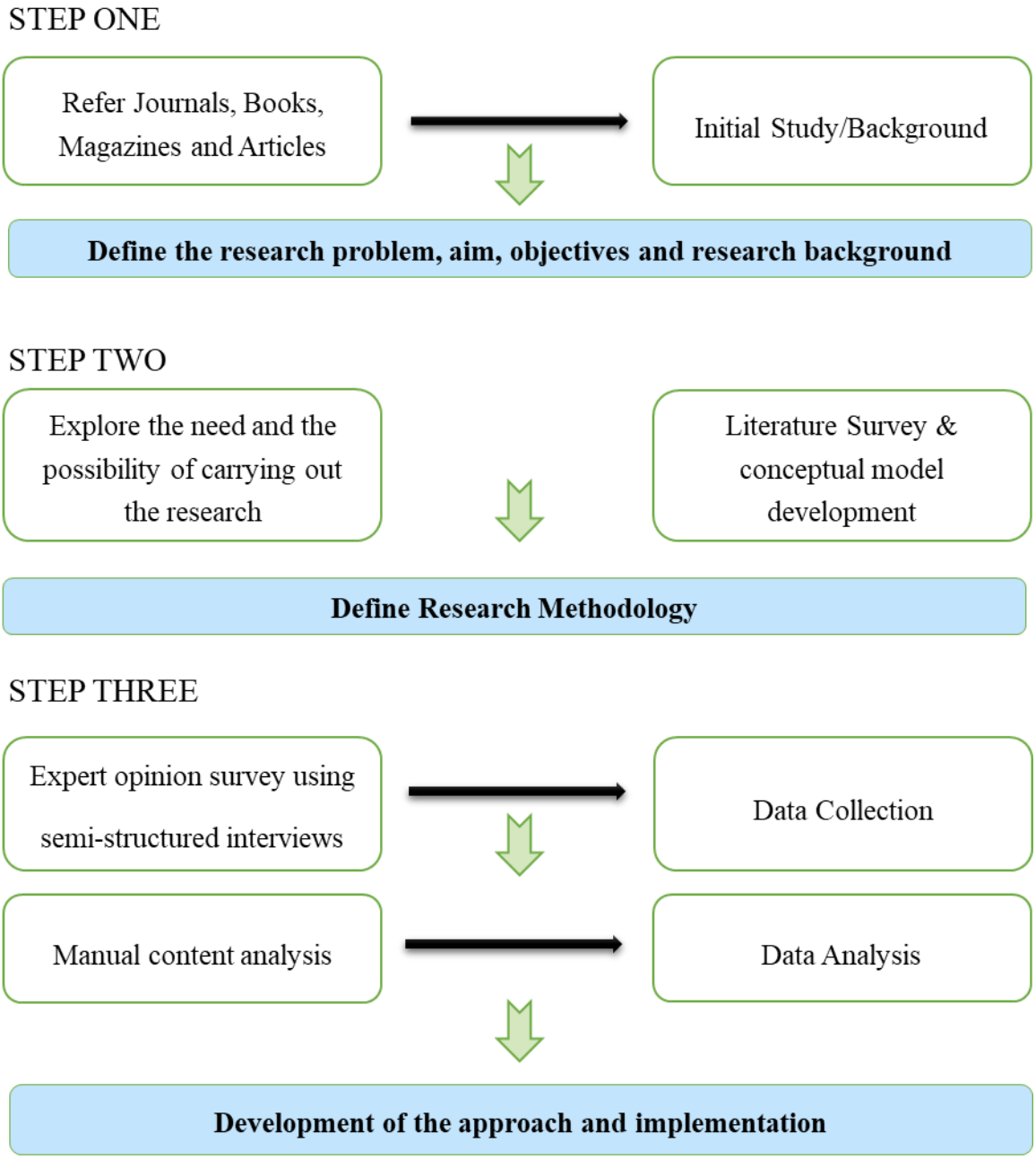

Figure 3.1: The Research Process

3.4.1 Initial Study

The initial study was carried out for identification of research problem, aim, objectives, scope and limitations. The background study was done by referring journals, books, articles and unpublished dissertations. The research gap was identified for further

proceedings on the research. Thereby an initial study was undertaken to get an adequate knowledge with the relevant study.

3.4.2 Literature Survey

A critical review of the literature was carried out to identify factors affecting the successful delivery in interior design projects in Sri Lanka. Journals, articles, magazines, books and unpublished materials were referred to in gathering information.

3.4.3 Expert Opinion Survey

Collection of data plays a vital role in the research process. Unless the correct data is gathered, there is no way of fully answering the research problem. There are many ways of gathering data each has its own materials and demerits. However, validity, reliability, appropriateness, amount of data using are the key considerations for selecting a data collecting method (Polonskey & Waller, 2011).

Observation method is a data collection technique commonly used in behavioural sciences which is not a systematic method. Even though here the subjective bias is eliminated, it is an expensive method and information provided by the method is limited.

The interview method is another data collecting technique can be divided as structured, semi-structured and unstructured, which have their merits and demerits. But once it is a semi-structured interview level of information gathered is high. Obtainability of more and in-depth information, overcoming resistance with interviewer`s skills, greater flexibility, easy observation of personal information are the major benefits allied with the method. However, it is expensive, the time taken and depend upon the interviewer's skills. This method is basically appropriate for investigation type researches which have specifically limited respondents (Kothari, 2004). There are some other methods such as questionnaire surveys, scheduled surveys etc., however, each consisting of its benefits and limitations (Kothari, 2004).

Therefore, a semi-structured interview was selected as the most appropriate method of data collection method for this research by considering above facts and type of research.

Twelve (12) experienced professionals in the IDP industry were selected for data collection. The interviews comprised four (4) designers, four (4) clients, and four (4) subcontractors.

Interviews were used as the major data collection technique.

3.4.4 Data Analysis

The analysis is the challenging and exciting stage of the entire research process (Ritchie et.al., 2014). There are twenty-six different types of qualitative research analysis techniques (Tesch,1990). Some of them are outdated and still exploring the ways to develop. Content analysis as a qualitative data analysis technique plays a major role amongst all and it is widely used for a large number of years (Hsieh & Shannon, 2005). That basic procedure in content analysis is sorting out design categories that are relevant to the research purpose and sorting out the relevant words and number of occurrences of then (Tesch, 1990).

Duke and Mallette (2011) defined content analysis as a flexible research method often drawing combinations of inductive, deductive and abductee analytical techniques. Hence, current applications of the content analysis show three distinct approaches as conventional, directed, or summative rather than being a single method (Hsieh & Shannon, 2005). Further, its analyses both content and the context of the documents unlike other methods such as conversation analysis, discourse analysis etc. (Ritchie et al., 2014).

In addition, this can be effectively used in analysing books, interviews, speeches conversations and like (Duke & Mallette, 2011). Thereby content analysis can be named as a method of analysing written, verbal or visual details (Elo & Kyanga, 2008)

Although the number of computer-based software have expanded with content analysis, the original scope of the analysis remains the same as previous (Duke & Mallette, 2011). The content analysis which is a qualitative data analysis technique was used in this research study to analyse the collected data by considering its merits over the other techniques. Hence, the data was analysed using manual content analysis

method. Further, semi-structured interviewing method necessitated the tool content analysis for analysing its findings. The ultimate research outcome was finally developed with the outcomes followed by the data analysis.

3.5 Chapter Summary

The chapter was written up based on the research process to achieve the ultimate research aim. The research methodology identified is the main systematic framework for achieving the research aim. The research approach presented is a qualitative approach. Further, the chapter highlights the research design, the entire research process, unstructured interviews as the major data collection tool and content analysis as the data analysis tool in this research. Moreover, it reasons out the whys and wherefores behind selecting each and every method and tool in the entire research process in this chapter.

CHAPTER 4

4 ANALYSIS AND RESEARCH FINDINGS

4.1 Introduction

This chapter contains the analysis of findings from the research. Data collection was carried out in a semi-structured interview as mentioned in the previous chapter. The findings which were gathered from literature synthesis were directed to a semi-structured interview in order to validate the data and modify data to relate to the research.

This chapter presents two main sections as an analysis of the detailed questionnaire survey and findings. The outcome of this chapter are factors affecting the success of interior design projects in Sri Lanka, parties responsible for success or failure, issues identified in interior design projects and strategies to overcome the identified issues in the future.

4.2 Semi-structured interview

Semi-structured interviews were carried out with twelve (12) experienced professionals in the interior design industry using semi-structured interview guideline (*refer Appendix A*). The findings of the semi-structured interviews were analysed through manual content analysis. The interview transcript of one respondent is attached herewith in appendix B for further reference.

Semi-structured interviews were generalised under the following categories:

- General information about the respondent
- Factors affecting the project delivery
    - How did it affect the project delivery?

- Who is the responsible party?
- Suggestions to overcome the identified issues in the future
- Respondents views about any other factors affecting the project delivery

4.2.1 Objectives of Semi-Structured Interviews

The main objectives of the interviews were to identify the factors affecting the successful delivery in IDP in Sri Lanka, how it is affecting the project delivery and to identify the responsible party for the said factor. Finally, particular actions to be taken to fulfil the identified factors gathered by the professionals in order to add a more practical background to the research.

4.2.2 Details of Interviews of Semi-Structured Interview

Twelve (12) interviews were carried out to collect a significant amount of data in order to identify the factors affecting Interior Design projects in Sri Lanka. The interviews comprised clients, interior designers, and contractors. The interviews were selected covering post constructed projects in the areas of commercial & residential.

The respondents of these qualitative semi-structured interviews were selected from selected interior design firms or companies. They were selected based on their experience in managing interior projects and interactions with other players in the project. The details of the selected interviewees are given in Table 4.1.

Table 4.1: Details of the interviewees of the semi-structured interview

Details	**Type of project**	**Years of experience**	**Designation**	**Completed interior design projects for last five (5) years**
Interior Designer (ID)				
Interior Designer-1 (D1)	Residential Project	21 Years	Director/Interior Designer	25
Interior Designer-2 (D2)	Commercial Project	10 Years	Interior Designer	10

Details	Type of project	Years of experience	Designation	Completed interior design projects for last five (5) years
Interior Designer-3 (D3)	Residential Project	11 Years	Interior Designer/ Project Consultant	20
Interior Designer-4 (D4)	Commercial Project	11 Years	Interior Designer	12
Contractor (C0)				
Contactor -1 (C01)	Residential Project	18 Years	Main Contactor	20
Contactor -2 (C02)	Commercial Project	12 Years	Main Contactor	14
Contactor -3 (C03)	Residential Project	25 Years	Sub Contactor	10
Contractor-4 (C04)	Residential Project	13 Years	Main Contactor	12
Client (C)				
Client -1 (C1)	Commercial Project	NA	NA	10
Client -2 (C2)	Residential Project	NA	NA	3
Client -3 (C3)	Residential	NA	NA	6
Client- 4 (C4)	Commercial Project	NA	NA	4
NA- Not Applicable				

The interview guideline contains 3 main sections *(refer Appendix A).* Section A is about the interviewees' background information. Section B is about seventeen (17) factors affecting the delivery of IDPs and each factor has a minimum of five (5) sub-questions. Section C is interviewees ideas and comments on mitigation measures for future projects.

Letters were posted and e-mailed to firms to acknowledge the intention, then followed up with telephone calls and the approximately 30 minutes appointment. Eventually,

there were 12 interviewees from different interior design projects and different companies who have agreed to be interviewed. The professionals were interviewed for approximately 30 minutes each.

4.3 Findings and analysis of the interviewees

Findings of the interviewees were mainly focused on factors affecting the IDPs in Sri Lanka and to identify the responsible party. A number of factors were discovered from the literature review and were used in the semi-structured interviews. The candidate's expertise was then used to identify the relevance of those factors affecting the IDP deliveries in Sri Lanka in order to achieve the first objective of the research.

Below discussed seventeen (17) factors were discovered from the literature review and how each interviewee responds to those factors with their personal experience in the IDP industry.

4.3.1 Poor Communication

The first factor discussed with all interviewees were about poor communication in projects and how it affects successful deliveries in projects. All the participants, except C1, agreed poor communication plays a major role in projects and was on the opinion that depending on communication, projects can be successful or unsuccessful.

Except for CO1, all other participants said they not only faced the issue during the construction stage, but it also affected to the project delivery.

D1 explained *"Yes, faced the issue few times during the contraction stage – Client has appointed someone to execute the project, and that person has not communicated properly to the client regarding the issues we discussed during the site meetings, as a result we had bit of communication issues in some projects"* also

D1 mentioned *"It affected a lot to the project delivery – At certain times client without informing us they had put dates for their opening and informing us only week before"* C3 explained *"There was a poor communication between designer and contractor, and as a result they couldn't hand over my site on time".* Further, many interviewees

said poor communication occurred mainly because of contractors. Due to their poor communication, the projects were not delivered successfully.

Out of 12 interviewees, 11 interviewees stated that they faced the issues during the construction stage and it also affected the successful project delivery. Table 4.2 shows the analysis of the above fact.

Table 4.2: Poor communication problem

POOR COMMUNICATION - As Quoted by the respondents			
No.	**The frequency of occurrence during the project construction**	**Contributor/ Stakeholder**	**Severity to the project delivery**
Designer			
D1	Yes, faced the issue few times during the contraction stage	Client	Affected a lot
D2	Yes, communication was very poor, we constantly repeated the project plan	Contractor	Yes, the project got delayed
D3	Yes, it was a messy communication	Contractor	Delivery date kept fluctuating throughout the project
D4	Yes, happened it a lot during the construction stage	Contractor	Couldn't deliver on time
	Number of agreements - 4		Number of agreements - 4
Contractor			
CO1	No		
CO2	Yes, faced it during the construction stage	Designer	The project got delayed
CO3	Yes	Designer & Contractor	The project got delayed
CO4	Yes, few times it happened during the construction stage	Client	Yes, it affected the delivery
	Number of agreements – 3		Number of agreements - 3
Client			
C1	Yes	Contractor	The project got delayed
C2	Yes, the communication channel was not so reliable.	Contractor	Slightly affected, because we had to change the contractor
C3	Yes, there were issues between designer and contractor	Designer & Contractor	Yes, didn't deliver on time

POOR COMMUNICATION - As Quoted by the respondents			
No.	**The frequency of occurrence during the project construction**	**Contributor/ Stakeholder**	**Severity to the project delivery**
C4	Yes, had communication issues, most of the time couldn't contact the contractor.	Contractor	The project got delayed
	Number of agreements – 4		Number of agreements - 4

4.3.2 Payment Problems

The 2nd factor discussed was Payment Problems. The main factor discussed here was whether the stakeholders faced payment problems during the construction stage and whether it affected successful project delivery.

D3, C1, C3 and C4 stated they did not face this issue in their projects and only D2, D4, CO3, CO4, sated this issue affected the success of project delivery. D2 stated, *"We didn't get our payments from the client on time, so we, our company couldn't pay the contractors on time and contractor didn't hand over the project on time"*. and C2 stated, *"contractor forgot to incorporate few of the items to the original quotation and later he kept adding, because of that there were a few payment issues – but it didn't affect the project delivery".*

3 designers, 4 contractors (all) and 1 client stated they face this issue during the construction stage, however, only 2 designers and 2 contractors stated it affected to the project delivery. All 4 clients stated payment problem did not affect the successful project delivery. Table 4.3 shows the analysis of this factor on payment problems.

Table 4.3: Payment problems

PAYMENT PROBLEMS - As Quoted by the respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity of the project delivery**
Designer			
D1	Yes	Client	No, with the approval of client we took extra one

PAYMENT PROBLEMS - As Quoted by the respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity of the project delivery**
			week and finished the work
D2	Yes – We didn't get the payments on time	Client	Yes, it affected the project delivery
D3	No		
D4	Yes, faced it during the construction stage	Client	Yes, it affected the project delivery
	Number of agreements - 3		Number of agreements - 2
Contractor			
CO1	Yes, didn't get the payments on time	Client	No, it didn't affect the project delivery
CO2	Yes	Client	It didn't affect the project delivery
CO3	Yes, didn't get the payments on time	Client	for some extent it affected the project delivery
CO4	Yes	Client	The project got delayed
	Number of agreements - 4		Number of agreements - 2
Client			
C1	No		
C2	Yes	Contractor	Not really
C3	No		
C4	No		
	Number of agreements - 1		Number of agreements - 0

4.3.3 Lack of experience/skills/low productivity of labour

The third factor discussed was lack of experience/skills and low productivity of labour from designers and contractors during the construction stage and how it affected the project delivery. Accordingly, D1 stated *"about designers, they are qualified but sometimes there are few mistakes in the drawings, and about contractors – They don't know how to read the drawings.* D2 stated *"There are few terrible contractors, plus they don't have enough team members to work on the project. But our company wants*

to work with them and we have no chance of getting a new contractor. Once, we had to re-do the work and project delivery time got delayed".

CO2 stated *"we have skilled labour issue and also our workers are lack of experience in working for a certain timeline. And they can't read and understand the drawing properly and as a result, we couldn't deliver a quality product on time"*. All 4 designers, 3 contractors and all 4 clients stated they face this issue during the construction stage but only 3 designers, 3 contractors and 2 clients said it affected to the successful project delivery. Table 4.4 shows the analysis of this factor Lack of experience/skills/low productivity of labour.

Table 4.4: Lack of experience/skills/low productivity of labour

LACK OF EXPERIENCE/SKILLS/LOW PRODUCTIVITY OF LABOUR – As Quoted by the respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity of the project delivery**
Designer			
D1	Sometimes yes, few mistakes in the drawings and lack of technical knowledge	Designer/ Contractor	No
D2	Yes, not enough team members to work on the project	Contractor	Yes, affected a lot
D3	Contractors don't have design thinking. So sometimes it affects the design and delivery	Contractor	No, it didn't affect the project delivery
D4	Yes, contractors were always lack of people to do the work	Contractor	It did affect the delivery
	Number of agreements - 4		Number of agreements - 2
Contractor			
CO1	Yes, lack of skilled labourers. Contractors can't read and understand technical drawings	Contractor	Yes, the project got delayed
CO2	No		
CO3	Yes, detail drawings are lack of information	Designer	Yes, the project got delayed. We had to hold until we get the proper information
CO4	Yes, not getting properly detailed drawings from designers	Designer	Yes, the project got delayed
	Number of agreements - 3		Number of agreements - 3

LACK OF EXPERIENCE/SKILLS/LOW PRODUCTIVITY OF LABOUR – As Quoted by the respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity of the project delivery**
Client			
C1	Yes, faced it. Suppliers didn't have proper coordination among them	Contractor	Not really
C2	Yes, designers and contractors had a bit of issue between them.	Designer/ Contractor	It didn't affect the project delivery.
C3	Yes, they couldn't understand design and drawings by their own	Contractor	Yes, It effected. Had to personally attend to see everything.
C4	Yes, felt something is not right	Designer/ Contractor	The project got delayed
	Number of agreements - 4		Number of agreements - 2

4.3.4 Shortage of materials in the market

The fourth factor discussed was how a shortage of materials in the market affected the project delivery. D4 stated *"we wanted specific melamine boards to do the furniture before we start the project contractor said they have enough melamine boards but suddenly he mentioned few boards are damage and they ordered a new shipment. But shipment got delayed and as a result, we couldn't deliver a successful project to the client"*. C2 stated *"we ordered few doors and they had to import that specific doors, but once the shipment arrived they got a wrong order. And we had to wait another whole month to get that specific door"*.

3 designers, 1 contractor and 2 clients said they face this issue during the contraction stage and 2 designers 1 contractor and 2 clients only mentioned it affected to the project delivery. Table 4.5 shows the analysis of this factor on the shortage of materials in the market.

Table 4.5: Shortage of materials in the market

SHORTAGE OF MATERIALS IN THE MARKET - As Quoted by the respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity to the project delivery**
Designer			
D1	Yes, lack of furniture accessories	Contractor	No
D2	No, didn't face such an issue		
D3	Yes, happened a lot. Materials are not available	Contractor	Didn't affect, because with the agreement of client we used the alternative material.
D4	Yes, faced this issue	Contractor	The project got delayed
	Number of agreements - 3		Number of agreements - 1
Contractor			
CO1	No		
CO2	Yes, had to wait for next shipment to start the work	Contractor	The project got delayed
CO3	No		
CO4	No		
	Number of agreements - 1		Number of agreements - 1
Client			
C1	No		
C2	Yes, ordered few doors and they had to import it and the shipment was wrong.	Contractor	The project got delayed, had to wait until we get the right one
C3	No		
C4	Yes, contractor informed there is a material shortage.	Contractor	The project got delayed.
	Number of agreements - 2		Number of agreements - 2

4.3.5 Delays and incomplete drawings or specifications

The fifth discussed factor was delays and incomplete drawings or specifications. D3 stated *"Defects from designer's side, not proper details were given, and specifications are not compatible with contractor's specifications, and therefore it affected a lot*

because we had to do a lot of revisions while the project is going on". D4 stated, *"there were few errors of the drawings I issued to the contractors, and they kept complaining and stop their work until they get complete set of drawings and as a result project got delayed"*.

CO1 stated *"When we get incomplete drawings from designers, we cannot order the fabrics and specific timber on time. And especially for timber seasoning it takes time and we are helpless and we failed to deliver successful project"*. C2 stated, *"the electrical contractor said they cannot start the work as they didn't get proper information from the designers, but at this stage, we have already communicated to the designer and explained our requirements, and as a result, electrical contractors work got delayed"*.

Three designers, 4 contractors and 2 clients stated they face this issue during the construction stage and 2 designers, 4 contractors and 1 client stated it affected the success of project delivery. Table 4.6 shows the analysis.

Table 4.6: Delays and incomplete drawings or specifications

DELAYS AND INCOMPLETE DRAWINGS OR SPECIFICATIONS – As quoted by respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity to the project delivery**
Designer			
D1	Yes, small things like the color difference	Designer	It didn't affect the project delivery.
D2	No, didn't face such an issue		
D3	Yes, defects from designer's side. Not proper details were given. Specifications are not compatible with contractor's specification	Designer	It effects because had to do a lot of revisions while the project is going.
D4	Yes, faced the issue	Designer	The project got delayed
	Number of agreements - 3		Number of agreements - 2
Contractor			
CO1	Yes, because of incomplete drawings from the designer cannot order the fabrics, timber and other materials on time	Designer	The project got delayed

DELAYS AND INCOMPLETE DRAWINGS OR SPECIFICATIONS – As quoted by respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity to the project delivery**
CO2	Yes, Incomplete drawings and lack of measurements.	Designer	The project got delayed
CO3	Yes, Drawing errors and measurement issues	Designer	The project got delayed
CO4	Yes, incomplete drawings	Designer	The project got delayed
	Number of agreements - 4		Number of agreements - 4
Client			
C1	No		
C2	Yes, Improper information	Designer	The project got delayed
C3	Yes, incomplete drawings from designer	Designer	It didn't affect the project delivery.
C4	No		
	Number of agreements - 2		Number of agreements - 1

4.3.6 Delays in approving samples/materials

Next factor discussed was about delays in approving samples. D1 stated this issue as *"This is again getting into the right channel. Ins some big projects client appoints someone to execute the project and we hardly meet the client directly. Sometimes if the wait is too long we had to speak to the client directly and the client has no clue about the samples we sent"*. D3 stated, *"Client can't make up their mind – they kept looking for new and better options and it affected a lot to the project delivery because we couldn't go ahead without getting the approval from the client and productions got delayed"*.

CO3 stated, *"Sometimes client change their mind after approved their initial decision, and we have to redo the work and project gets delayed"*.

Three designers, 4 contractors 2 clients stated they face this issue during the construction stage and only 2 designers, 3 contractors and 1 client stated it affected the success of project delivery. Table 4.7 shows the analysis of the above factor.

Table 4.7: Delays in approving samples/materials

DELAYS IN APPROVING SAMPLES/MATERIALS – As quoted by respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity to the project delivery**
Designer			
D1	Yes, we faced this issue.	Client	The project got delayed
D2	No		
D3	Yes, the client can't make up their mind. They keep looking for new options.	Client	It affected a lot because we couldn't go ahead without getting approval from the client.
D4	Yes, client's take their own times to approve the samples	Client	No – It didn't affect
	Number of agreements - 3		Number of agreements - 2
Contractor			
CO1	Yes, the client takes their own time	Client	The project got delayed
CO2	Yes, client take their own time	Client	The project got delayed
CO3	Yes, the client changed their mind after approving their initial decision	Client	The project got delayed
CO4	Yes, client take their own time	Client	It didn't affect the project delivery.
	Number of agreements - 4		Number of agreements - 3
Client			
C1	No		
C2	Yes, the contractor showed me a sample and after I approved they said it's not available.	Contractor	Didn't affect, because I selected something else afterwards.
C3	Yes, because of cost had to look for alternative materials	Contractor	The project got delayed
C4	No, I approved them on time		
	Number of agreements - 2		Number of agreements - 1

4.3.7 Changes in the design frequently

One of the common heard issue in a construction project. But only 3 Designers, 3 contractors and 2 clients stated they face this issue during the construction stage and only D-3 and CO-1 stated it occurred to the successful project delivery.

D-1 stated they face this issue very much during the construction stage due to a request by the client or sometimes due to structural limitations. And D-3 stated *"client can't make up their mind, they come up with new needs and requirements and it definitely delays the delivery date"*

CO-1 stated, *"I think because designers didn't give properly what clients needs, so during the construction stage the only client understand the out some and client wants to change it at that point and it affects the successful project delivery"*.

C-1 stated *"due to management decisions we had to remove and look for alternative methods during the construction stage"* and C-3 stated, *"some designs were not practical, and we had to change it during the construction stage"*. Table 4.8 below shows the analysis.

Table 4.8: Changes in the design frequently

CHANGES IN THE DESIGN FREQUENTLY – As quoted by respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity to the project delivery**
Designer			
D - 1	Yes- Very much.	Designer/ Client	It didn't affect the project delivery.
D - 2	No, we start the work when everything is approved only.		
D - 3	Yes, Client cannot make up their mind. They come up with new needs and requirements.	Client	The project got delayed
D - 4	Yes, the client added a few things while the project is ongoing	Client	It didn't affect the project delivery. We got extra time for extra work
	Number of agreements - 3		Number of agreements - 1
Contractor			
Co - 1	Yes, during the construction stage the client wants to change certain things.	Designer	The project got delayed
Co - 2	Yes, Client change their mind	Client	It didn't affect the project delivery

CHANGES IN THE DESIGN FREQUENTLY – As quoted by respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity to the project delivery**
Co - 3	Yes, client change their mind	Client	Since we had the time it didn't affect the project delivery.
Co - 4	No,		
	Number of agreements - 3		Number of agreements - 1
Client			
C- 1	Yes, due to management decisions had to add and remove certain things	Client	It didn't affect the project delivery.
C- 2	No		
C- 3	Yes, since some design aspects were not practical. So, had to change the ideas.	Designer	Not really
C- 4	No		
	Number of agreements – 2		Number of agreements - 0

4.3.8 Construction mistakes/defects work/lack of quality

The next discussed factor was construction mistakes/defects work, and lack of quality. Except for CO-4 and C-4 all the other interviewees agreed they face this issue during the construction stage and only D-2, D-4, CO-1, CO-2, C-1 and C-3 said it affected the success of project delivery.

D-2 stated *"Sometimes when the site is far I don't often get chance to visit the site and when I finally visit the quality is not up to standard and we had to ask them to redo the work. And as a result, project delivery date gets delayed"*

CO-1 stated *"due to lack of skilled labour we face contraction mistakes and defects work" and C-2 stated "because the contractor didn't do the gutter work properly the whole floor got damaged. And this issue we faced after they handed over the project. But we had to spend an extra few weeks after the completion to rectify the issue*". Table 4.9 shows the analysis for this factor.

Table 4.9: Construction mistakes/defects work/lack of quality

CONSTRUCTION MISTAKES/DEFECTS WORK / LACK OF QUALITY – As quoted by respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity to the project delivery**
Designer			
D - 1	Yes	Contractor	it didn't affect the delivery
D - 2	Yes, quality wasn't up to standard.	Contractor	Yes, because of rework the project got delayed
D - 3	Yes, quality and defect work	Contractor	It didn't affect the delivery
D - 4	Yes, quality issues	Contractor	The project got delayed
	Number of agreements - 4		Number of agreements - 2
Contractor			
Co - 1	Yes	Contractor	The project got delayed
Co - 2	Yes	Contractor	The project got delayed
Co - 3	Yes	Contractor	Didn't affect the delivery.
Co - 4	No		
	Number of agreements - 3		Number of agreements - 2
Client			
C- 1	Yes	Contractor	The project got delayed
C- 2	Yes, defect work	Contractor	Didn't affect the delivery.
C- 3	Yes, construction mistakes	Contractor	The project got delayed
C- 4	No		
	Number of agreements - 3		Number of agreements - 2

4.3.9 Shortage of site labour

The next discussed factor was the shortage of site labour. Except for D-3, all the other designers stated they face this issue during the construction stage and also it affected the successful project delivery. Except for CO-4 all the other contractors also stated

they face it during the construction stage but only CO-1 said it affected the project delivery and C-1 and C-2 stated they too face this issue during the construction stage and also it affected the project delivery.

D-1 stated *"Not all the time, maybe if there were any special holidays then people go on holidays and they don't come back on time"* and D-2 stated *"some contractors don't have enough people, they just take the project and then drags for ages and it definitely delays the project delivery date"*.

CO-1 stated, *"Sometimes the workers get involved with a few more projects at a time and its hard to contact them to come and work"*.

C-1 stated *"yes there was labour issue and after we complained few times to speed up the work and increase the manpower they worked overtime and worked during holidays to meet the deadlines but still project got delayed'* Table 4.10 shows the analysis below.

Table 4.10: Shortage of site labour

SHORTAGE OF SITE LABOUR – As quoted by respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity to the project delivery**
Designer			
D - 1	Yes, sometimes	Contractor	It didn't affect the project delivery
D - 2	Yes, lack of people to work	Contractor	The project got delayed
D - 3	No		
D - 4	Yes, faced the issue	Contractor	The project got delayed
	Number of agreements - 3		Number of agreements - 2
Contractor			
Co - 1	Yes, quite a lot	Contractor	The project got delayed
Co - 2	Yes	Contractor	Didn't affect the delivery date
Co - 3	Yes	Contractor	Didn't affect the delivery date
Co - 4	No		
	Number of agreements - 3		Number of agreements - 1
Client			

SHORTAGE OF SITE LABOUR – As quoted by respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity to the project delivery**
C- 1	Yes	Contractor	The project got delayed
C- 2	Yes	Contractor	The project got delayed
C- 3	No		
C- 4	No		
	Number of agreements - 2		Number of agreements - 2

4.3.10 Project Planning

This factor is relevant only for designers and for contractors. But only D-1, D-3 and D-4 stated they face this issue during the construction stage and only D-3 and d-4 stated it affected the project delivery.

D-1 stated *"Sometimes project manager or sometimes designer prepares the project plan and if it's a big project then the project consultant prepares it. We usually prepare our own project plan and submit it to the consultant and they amend accordingly"*.

D-3 stated *"sometimes the project plan is not updated properly, so we see the old schedule in the system and we work for it and it leads to unsuccessful project delivery"*

D-4 stated, *"we didn't have a project plan at all, and the project got delayed too and I believe for every project even it's a small or big we must have a project plan and work according to it"*.

Below Table 4.11 shows the analysis of this factor.

Table 4.11: Project Planning

PROJECT PLANNING – As quoted by respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity to the project delivery**
Designer			
D - 1	Yes	Contractor	It didn't affect the delivery
D - 2	No		

PROJECT PLANNING – As quoted by respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity to the project delivery**
D - 3	Yes, the project plan wasn't updated properly	Contractor	Yes, since it wasn't updated properly the project got delayed
D - 4	Yes, there wasn't a proper project plan	Contractor/ Designer	The project got delayed
	Number of agreements - 3		Number of agreements - 2
Contractor			
Co - 1	No		
Co - 2	No		
Co - 3	No		
Co - 4	No		
	Number of agreements- 0		Number of agreements - 0
Client			
C- 1	No		
C- 2	No		
C- 3	No		
C- 4	No		
	Number of agreements – 0		Number of agreements - 0

4.3.11 Unrealistic delivery dates

The next discussed factor was unrealistic delivery dates. D-1, D-2 and D-3 stated client requested unrealistic delivery dates during only the construction stage.

CO-1 stated they too face this construction stage and cost and quality wise it affected to the project delivery and CO-2 and CO-3 too face this during the construction stage. And C-1 stated they requested a certain delivery date and with the agreement of other parties, they came to a conclusion.

D-1 stated, *"sometimes the client is requesting for unrealistic delivery dates if I can't do it I, of course, explained it to the client and sometimes we come to an agreement to deliver only certain items on the specific date and to deliver the rest as initially planned"*.

D-2 stated *"yes clients are requesting unrealistic delivery dates and we sometimes since we need the job very badly we accepted it and we make our workers to work overtime/ during holidays to meet the deadlines'.* Table 4.12 shows the analysis for this factor.

Table 4.12: Unrealistic delivery dates

UNREALISTIC DELIVERY DATES – As quoted by respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity to the project delivery**
Designer			
D - 1	Yes	Client	Didn't affect the delivery date
D - 2	Yes, the client requested	Client	Didn't affect the delivery date
D - 3	Yes - We didn't accept it		Since we didn't accept it didn't affect the project delivery.
D - 4	No		
	Number of agreements - 3		Number of agreements - 0
Contractor			
Co - 1	Yes	Client	Yes- cost and quality wise it effected to the project delivery
Co - 2	Yes	Client	It didn't affect the project delivery
Co - 3	Yes - we didn't accept it		Since we didn't accept it didn't affect the project delivery.
Co - 4	No		
	Number of agreements - 3		Number of agreements - 1
Client			
C- 1	Yes	Client	Didn't affect the project delivery
C- 2	No		
C- 3	No		

UNREALISTIC DELIVERY DATES – As quoted by respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity to the project delivery**
C- 4	No		
	Number of agreements - 1		Number of agreements - 0

4.3.12 Poor site condition

The next discussed factor was how poor site condition affects the delivery of a successful project. D-1, D-3, D-4, CO-1, CO-2 CO-3 and C-4 stated they face this issue during the constriction stage and D-1, D-3, CO-1, CO-3, C-4 stated it affected to the success of project delivery.

D-1 *stated "We delivered few furniture items to the client with the agreement of client, but client not given proper protection to the items from bad weather. Furniture items got damaged and we had to rectify the items and project got delayed"*

D-3 stated *"site wasn't clean and we couldn't start any work for a week and there was a minor delay" and CO-1 stated, "civil work wasn't finished at the site, so our work got delayed because of that"*. Table 4.13 shows the analysis for this factor.

Table 4.13: Poor site condition

POOR SITE CONDITION – As quoted by respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity to the project delivery**
Designer			
D - 1	Yes - Not given proper protection from bad weather.	Client	The project got delayed Had to redo the work
D - 2	No		
D - 3	Yes - Site wasn't cleaned properly o start the work	Contractor/ Client	Minor delay

POOR SITE CONDITION – As quoted by respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity to the project delivery**
D - 4	Yes - Site wasn't cleaned properly o start the work	Client	It didn't affect the project delivery.
	Number of agreements - 3		Number of agreements - 2
Contractor			
Co - 1	Yes, Civil work wasn't completed to start the interior work	Client	Affected a lot
Co - 2	Yes, Civil work wasn't completed to start the interior work	Contractor	Didn't affect the delivery date
Co - 3	Yes	Client	The project got delayed
Co - 4	No		
	Number of agreements - 3		Number of agreements - 2
Client			
C- 1	No		
C- 2	No		
C- 3	No		
C- 4	Yes- Civil work couldn't finish on time as planned to start interior work	Contractor	The project got delayed
	Number of agreements - 1		Number of agreements - 1

4.3.13 Weather Condition

All the participants agreed no one is responsible for this factor and everyone should bear the cost of damages occurring due to bad weather conditions. D-1, D-2, D-3, CO-3, C-1 C-2 stated they face this issue during the project construction and it was the weather conditioned they face was rain. D-1, CO-3 and C-2 said it affected the success of project delivery,

D-1 stated, *"we discussed the faced issue during the site meeting and we came to a mutual agreement, but we couldn't deliver the project as initially planned"*. Table 4.3.13 shows the analysis below.

Table 4.14: Weather condition

WEATHER CONDITION – As quoted by respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity to the project delivery**
Designer			
D - 1	Yes - Rain		The project got delayed
D - 2	Yes - Rain		Didn't affect the project delivery
D - 3	Yes - Rain		
D - 4	No		
	Number of agreements - 3		Number of agreements - 1
Contractor			
Co - 1	No		
Co - 2	No		
Co - 3	Yes - Rain		The project got delayed
Co - 4	No		
	Number of agreements - 1		Number of agreements - 1
Client			
C- 1	Yes - Rain		Didn't affect the project delivery.
C- 2	Yes - Rain		The project got delayed
C- 3	No		
C- 4	No		
	Number of agreements- 2		Number of agreements - 1

4.3.14 Contract modifications or mistakes

The next discussed factor was contract modifications. D-1, D-3 and D-4. CO-1, CO-4, C-3 and C-4 stated there were a few amendments in the contract and all of them stated it didn't affect to the project delivery. Table 4.15 below shows the analysis.

Table 4.15: Contract modifications or mistakes

CONTRACT MODIFICATIONS OR MISTAKES – As stated by the respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity to the project delivery**
Designer			
D - 1	Yes - Client requested certain changes – Before the project construction	Client	It didn't affect the project delivery.
D - 2	No		
D - 3	Yes - Client requested certain changes – Before the project construction	Client	Didn't affect the project delivery
D - 4	Yes - Client requested certain changes – Before the project construction	Client	Didn't affect the project delivery
	Number of agreements - 3		Number of agreements - 0
Contractor			
Co - 1	Yes - Client requested certain changes – Before the project construction	Client	Didn't affect the project delivery.
Co - 2	No		
Co - 3	No		
Co - 4	Yes - Client requested certain changes	Client	Didn't affect the project delivery.
	Number of agreements - 2		Number of agreements - 0
Client			
C- 1	No		
C- 2	No		
C- 3	Yes- few editing's – Before the project construction	Client	Didn't affect the project delivery
C- 4	Yes- few editing's – Before the project construction	Client	Didn't affect the project delivery
	Number of agreements - 2		Number of agreements - 0

4.3.15 Claims and disputes

All the participants stated they did not face this issue during the construction stage or it affected the success of project delivery. Only D-1 stated, "we had few payment related conflicts with our client and with contractors, but this happened after we handed over the project and therefore it didn't affect the success of project delivery". Table 4.16 shows the analysis.

Table 4.16: Claims and disputes

CLAIMS AND DISPUTES – As quoted by respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity to the project delivery**
Designer			
D - 1	No, it happened after the project completion. Regarding payments		
D - 2	No		
D - 3	No		
D - 4	No		
	Number of agreements - 0		Number of agreements- 0
Contractor			
Co - 1	No		
Co - 2	No		
Co - 3	No		
Co - 4	No		
	Number of agreements - 0		Number of agreements - 0
Client			
C- 1	No		
C- 2	No		
C- 3	No		
C- 4	No		
	Number of agreements - 0		Number of agreements - 0

4.3.16 Top Management Support

The next discussed factor was top management support. This factor was not applicable to clients. And all four designers and all 4 contractors stated they didn't face such an issue during the construction stage or it didn't affect the success of project delivery. Table 4.17 shows the analysis.

Table 4.17: Top management support

TOP MANAGEMENT SUPPORT – As quoted by respondents			
No.	Occurred during the project construction	Contributor/ Stakeholder	Severity to the project delivery
Designer			
D - 1	No		
D - 2	Not Really		
D - 3	No		
D - 4	No		
	Number of agreements- 0		Number of agreements - 0
Contractor			
Co - 1	No		
Co - 2	No		
Co - 3	No		
Co - 4	No		
	Number of agreements - 0		Number of agreements - 0
Client			
C- 1	Not Applicable		
C- 2	Not Applicable		
C- 3	Not Applicable		
C- 4	Not Applicable		

4.3.17 Relationship with client

The next discussed factor was how the relationship with the client affected the success of project delivery. Many interviewees said the relationship with a client is very important in a project and it helped them in many ways. D-4, CO-3 stated they didn't

have a good relationship with their clients and C-3 stated *"designer wasn't professional enough to inform us she is going abroad for a vacation, and suddenly there was no communication, which was really bad'*.

D-1 stated *"we always try to make a close relationship with our clients, when you have a very good relationship with a client you get correct and communication is very fast and effective, so it works well. Which is really good"*.

D-2 stated, *"sometimes small miscommunication and misunderstanding was there, but we had a good relationship throughout the project, we couldn't deliver the project on time – but since we maintained a close relationship with him we could speak to the client directly and explained the issue and client gave us extra time"*.

CO-2 stated *"we often met the client during site meetings and we discussed site issues, production issues openly with the client, the client was very understanding and was supportive. Which made us deliver a successful project to the client plus we, our team really wanted to give our best to the client"*. Table 4.18 shows the analysis.

Table 4.18: Relationship with client

RELATIONSHIP WITH THE CLIENT – As quoted by respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity to the project delivery**
Designer			
D - 1	Yes - maintained a close relationship	Client	Affect a lot in a good way
D - 2	Yes - maintained a good relationship	Client	The project got delayed, but client allowed extra time. So, it wasn't an issue
D - 3	Yes- maintained a very good relationship	Client	Yes, quite a lot – Overall it was alright
D - 4	No, it wasn't a good relationship	Client	The project got delayed.
	Number of agreements - 3		Number of agreements - 4
Contractor			
Co - 1	Yes- a good relationship	Client	Affected a lot in a good way

RELATIONSHIP WITH THE CLIENT – As quoted by respondents			
No.	**Occurred during the project construction**	**Contributor/ Stakeholder**	**Severity to the project delivery**
Co - 2	Yes- a good relationship	Client	Affected a lot - Deliver a successful project
Co - 3	Didn't have a good relationship	Client	The project got delayed
Co - 4	Yes - a good relationship	Client	Affected a lot – It was a good experience
	Number of agreements - 3		Number of agreements - 3
Client			
C- 1	Yes, had a good relationship	Designer	The project got delayed, but designer explained it beforehand and we were ok with it.
C- 2	Yes- but lack of communication	Designer	Since lack of communication project got delayed. But wasn't an issue for project delivery.
C- 3	No	Designer	The project got delayed
C- 4	Had a good relationship	Designer/ contractor	The project got delayed, but designer explained it beforehand
	Number of agreements - 3		Number of agreements - 3

4.4 Findings

From the results of the interviews, it is evident that out of the 17 factors, only 14 have an effect on the successful delivery of interior design projects. The figures below illustrate the factors, stakeholders contributing to the factors, and mitigating measures. The mitigation measures were provided by interviewees during the interview session. Table 4.19 shows the comparison between the frequency of occurrences and severity to the project delivery. Some respondents said even though they faced it during the project construction stage it did not affect the delivery of the project. The important fact for this research finding is the severity to which the factors discussed above affected the success of project delivery.

Table 4.19: Comparison between frequency and severity to the project

No.	Factors affecting the successful delivery in Interior Design Projects in Sri Lanka	Occurred during the project construction stage (Analysis of no. of agreements)			Total Respondents out of twelve	Severity to the successful project delivery (Analysis of no. of agreements)			Total Respondents out of twelve
		Designer	Contractor	Client		Designer	Contractor	Client	
1	Poor Communication	4	3	4	11	4	3	4	11
2	Payment Problems	3	4	1	8	2	2	0	4
3	Lack of experience/ Skills/ low productivity of labour	4	3	4	11	2	3	2	7
4	Shortage of materials in the market	3	1	2	6	1	1	2	4
5	Delays and incomplete drawings or specifications	3	4	2	9	2	4	1	7
6	Delays in approving samples/ materials	3	4	2	9	2	3	1	6
7	Changes in the design frequently	3	3	2	8	1	1	0	2
8	Construction mistakes/ defect work/ lack of quality	4	3	3	10	2	2	2	6
9	Shortage of site labour	3	3	2	8	2	1	2	5
10	Project Planning	3	0	0	3	2	0	0	2
11	Unrealistic delivery dates	3	3	1	7	0	1	0	1
12	Poor site condition	3	3	1	7	2	2	1	5
13	Weather Condition	3	1	2	6	1	1	1	3
14	Contract modifications or mistakes	3	2	2	0	0	0	0	0
15	Claims and disputes	0	0	0	0	0	0	0	0
16	Top management support	0	0	0	0	0	0	0	0
17	Relationship with client	3	3	3	9	4	3	3	9

From the above table, it can be identified that claims and disputes and top management support are not factors affecting the successful delivery of IDP in Sri Lanka. Although there are contract modifications and mistakes, it did not affect the projects. Therefore, it can be concluded that the following factors have an impact on the successful delivery of interior design projects in Sri Lanka.

1. Poor Communication
2. Lack of experience/ Skills/ low productivity of labour
3. Shortage of materials in the market
4. Delays and incomplete drawings or specifications
5. Delays in approving samples/ materials
6. Changes in the design frequently
7. Construction mistakes/ defect work/ lack of quality
8. Shortage of site labour
9. Project Planning
10. Poor site condition
11. Weather Condition
12. Relationship with client
13. Documentation
14. Proper coordination between client, designer and contractor

From the data analysis, it was concluded poor communication has a major impact for successful deliveries in IDP in Sri Lanka. Respondents stated due to lack of strong, operative information in the projects, it leads to unsuccessful project deliveries.

The second major factor is the relationship with the client. All the participants stated and concluded if you have a good and strong relationship with your client from the beginning it is very helpful to have a successful project delivery. This is the responsibility of all clients, designer, and contractors to maintain this relationship from the beginning to the end.

The list below provides the factors affecting the success of interior design projects in Sri Lanka in order from high to low occurrence:

1. Poor Communication

2. Relationship with client
3. Lack of experience/skills/ low productivity of labour
4. Delays and incomplete drawings and specifications
5. Delays in approving samples and materials
6. Construction mistakes/ defect work/ lack of quality
7. Shortage of site labour
8. Poor site condition
9. Payment Problems
10. Shortage of materials in the market
11. Weather Condition
12. Changes in the design frequently
13. Project Planning
14. Unrealistic delivery dates

The factors mentioned above are each caused by one or more stakeholders, which are illustrated in Figure 4.1 below. The Blue text indicates those mitigation measures derived from literature, and the Black text indicates those mitigation measures derived from respondents' answers.

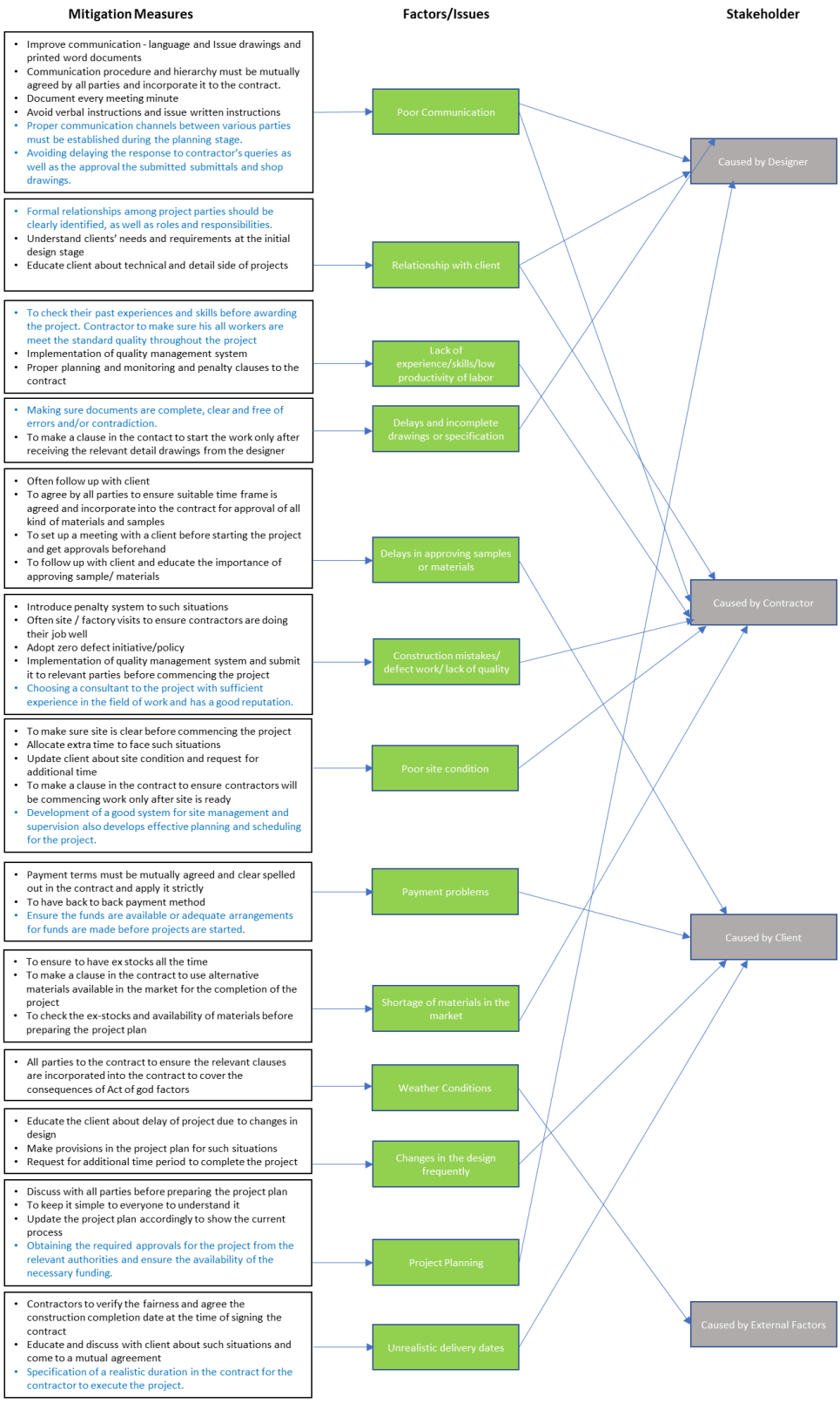

Figure 4.1: Relationship between factors, mitigation measures, and stakeholders

The above figure sums up the factors affecting the successful delivery of IDP, their responsible stakeholders and mitigation measures for further projects. By practising recommended mitigation measure will help future IDP to minimise the delivery issues and by knowing the stakeholder for relevant factor, the interior designers can pay extra care for the stakeholder and to make sure zero mistakes will arise.

CHAPTER 5

5 CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter discusses on deriving at the conclusion of this research from the research findings attained in the preceding chapter. Thus, this chapter elaborates the summary of the undergone research process which enabled to derive the final outcome. Hence, the conclusion discusses how the objectives were persisted through the research findings. The aim of this research is to find the factors affecting successful delivery in IDP in Sri Lanka. To derive the aim, certain objectives were established. Hence, the conclusion describes the accomplishment of each objective together with the research findings and present recommendations.

5.2 Overview of Research and Conclusions Drawn from the Study

The success of a construction project is the quality output which is delivered on time, and within the required budget. The construction industry worldwide has been commonly criticised for failures in the delivery of projects, with no exceptions for construction projects including IDPs in Sri Lanka. Projects have tended to become more time constrained and the ability to deliver a project on time is becoming an increasingly important element to attain customer satisfaction.

With the increasing demand in the construction sector, people are increasingly passionate and expect more from the designer to visualise their dream space. In this context IDP have changed dramatically since the sustainable design revolution of the 1990s. The popularity and importance of IDP has increased because of the increasing awareness of the role played by the Interior Designer. The Designer plans and organises the design of the space to produce a creative, technical, and valid construction solution to achieve the perfect interior environment.

The project lifecycle involvement by the interior designers needs to be executed through a lot of work processed and phases. There are high demands for interior design architectural works, yet still issues especially in managing interior projects keep occurring. Nevertheless, there is no evidence stating about the unsuccessful interior project delivery. This is because ID has always been seen as a finishing work or rather treated as problem solving for building or architectural works. Therefore, in this research study, construction industry delivery issues were considered for further investigation.

From previous studies in the construction industry, the factors affecting successful delivery were found to be poor communication, payment problems, lack of experience/skills/low productivity of labour, shortage of materials in the market, delays, and incomplete drawings or specifications, delays in approving samples/materials, changes in the design frequently, construction mistakes/defect work/lack of quality, shortage of site labour, project planning, unrealistic delivery dates, poor site condition, weather, contract modifications or mistakes, claims and disputes, top management support, and relationship with client. These factors were categorized into four categories as client, designer, contactor and external factors.

To find the answer to the research question, several objectives were used. After finalising the research proposal, a comprehensive literature review was carried out to study about the factors affecting successful project deliveries. Unsuccessful project deliveries occurred due to various reasons. An interview questionnaire was prepared based on the factors identifies through literature review in construction projects. Expert opinion survey carried out using semi-structured interview. The interview comprised twelve stakeholders in IDP, including designers, contractors and clients.

According to the findings of the research, it was concluded thirteen (13) out of seventeen (17) discussed factors affect successful IDP deliveries in Sri Lanka. Out of the 13 factors, poor communication has a major impact. Poor communication issues occurred mainly through designers and contractors. Therefore, both designers and contractors are responsible for such issues in delivering the project on time. The second

major factor is the relationship with the client. It is concluded all the parties involve in the project must have a good and strong relationship with the client throughout the project lifecycle. The third most important factor is the lack of experience/skills/low productivity of labour. This issue mainly occurs from the contractors' side.

In summation, to have successful deliveries in IDPs in Sri Lanka, the designer and contractor should play a major role in projects to maintain proper communication, to maintain a relationship with the client and to improve skills and productivity of labour throughout the project lifecycle.

5.3 Recommendations

For Industry Practitioners

[1] Proper communication channels between various parties must be established during the planning stage

[2] Improve communication through language, issue drawings & printed word documents, avoid verbal instructions during the project construction stage, document and maintain files on minutes and discussions in every meeting

[3] The designer and contractor should understand the client's needs and requirement from the initial stage, and educate the client about the technical side of the project

[4] Choosing a consultant to the project with sufficient experience in the field of work and has a good reputation

[5] Ensure all contactors' workers meet the standard of quality throughout the project & Implementation of quality management system

For Academic Researchers

[1] To do a further research to find out if there are any factors affecting successful deliveries in specifically either residential or corporate design projects in Sri Lanka, or whether the factors are same for those projects

[2] To do further research covering Interior design projects in hospitality & retail design projects

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APPENDICES

Appendix A - Questionnaire

Dear Sir/Madam,

Research Dissertation – Interview (MSc in Project Management)

I am a postgraduate student of the Department of Building Economics, following an MSc. in Project Management. I am engaging in a research titled "Factors affecting successful delivery in Interior Design Projects in Sri Lanka." The research is conducted under the supervision of Dr. Yasangika Sandanayake, Head, Department of Building Economics, University of Moratuwa.

I am in the process of collecting input from Interior Design industry practitioners for this research through means of interview by using a semi-structured questionnaire. The aim of this interview is to identify the factors affecting successful delivery in Interior Design Projects.

Please be kind enough to allow me an appointment (60min) to conduct the interview. I assure you the information collected will be purely used for the research purposes. The recording of the discussion will be done only with prior approval of the company and interviewee. Confidentiality of your personal details, company names, project details, or any other information of similar kind will be maintained at all times.

Thank you.
Yours Faithfully,

A. P. Ekanayake
MSc. Candidate (2014/2016),
Department of Building Economics,
University of Moratuwa.
E-mail: acheka5299@gmail.com

FACTORS AFFECTING SUCCESSFUL DELIVERY OF INTERIOR DESIGN PROJECTS IN SRI LANKA

Company Name (Optional):

INTERVIEW GUIDELINE

Designation of the interviewee:

Year(s) of experience:

Date:

SECTION - A (Background Information)

1) How many Interior Design projects have you/your company completed during the last five (5) years?

2) Of them, how many projects did you manage to deliver successfully?
   i. Did you deliver it on time as initially planned?
   ii. Is it under the initial budgeted price?
   iii. Is the quality up to the standard you and your client expected?

3) How many projects failed to deliver successfully? Was it a time factor, cost factor or a quality factor that caused it to fail? Please give reasons for your answer.

SECTION - B

Below are the factors affecting the success of a project delivery. Based on your work experience, please answer who is responsible (e.g. client/designer/contractor/external party) and what are the methods you used to overcome those issues.

1) **Poor Communication**

i. Did you face any communication issues with your stakeholders? If so what sort of an issue did you face?
ii. With which stakeholder, did you face it?
iii. What was the method you used to communicate?
iv. How did it affect the project delivery date?
v. Do you maintain records?
vi. Are you satisfied with your method of communication?
vii. How could you overcome the issue you faced?

2) **Payment Problems?**

i. Did you face any payment problems with your stakeholders? If so, with which stakeholder did you face it?
ii. What are the payment related issues you had to face?
iii. What was the reason behind it?
iv. Did the work speed reduce due to payment issues?
v. How could you overcome the identified issues?

3) **Lack of experience/skills/low productivity of labour**

i. How experienced are your interior designers? Are you satisfied with their work?
ii. How experienced are your contractors? Are you happy with them and their work?
iii. What are they lacking when handling a project?
iv. Did the lack of experience/skills/low productivity of labour affect your project? If so, from which stakeholder did you notice it?

v. What are the actions you took to overcome this issue?

4) Shortage of materials in the market

i. Did you face any shortage of materials during a project?
ii. What sort of issues did you face?
iii. What are the precautions you used at that time?
iv. Who is responsible to overlook the materials?
v. How did it affect the project delivery date?
vi. How could you overcome the identified issues in the future?

5) Delays and incomplete drawings or specifications?

i. Did you face any issues regarding delays and incomplete drawings or specifications?
ii. What are the issues you faced because of that?
iii. Who is responsible to issue the drawings and specifications on time?
iv. How did it affect the project delivery date?
v. How could you overcome the identified issues in the future?

6) Delays in approving samples/materials?

i. Did you face any delays in approving samples/materials?
ii. What is the reason behind delaying in approving samples/materials?
iii. Who is responsible to provide samples and materials?
iv. Who is responsible to approve the samples and materials?
v. How did it affect the project delivery date?
vi. How could you overcome this issue in the future?

7) **Changes in the design frequently**

i. Did you face any issues with changing the design frequently?
ii. If so, who changed the design frequently?
iii. What was the reason for these changes?
iv. How did it affect the project delivery date?
v. How could you overcome the identified issues in the future?

8) **Construction mistakes / defects work / lack of quality**

i. Did you face any construction mistakes/defects/lack of quality in projects?
ii. What sort of issues did you face because of this?
iii. Who was the responsible party for this?
iv. When did you notice those issues? During the project or after the project completion?
v. What are the methods you used to correct it at the time?
vi. How did it affect the project delivery date?
vii. Any suggestions to avoid similar kinds of issues in the future?

9) **Shortage of site labour**

i. Did you face any shortage of site labour during your project construction? If so what are the issues you had to face at that time?
ii. Who is responsible for this?
iii. What are the actions you used to overcome the issue?
iv. How did it affect the project delivery date?
v. Any suggestions to overcome similar kinds of issues in the future?

10) **Project Planning**

i. Who is preparing the project plan?
ii. Did they discuss it with all the parties before preparing the project plan?
iii. Did you face any issues with the project plan? If so what sort of issues was it?

iv. Do you think improper planning led to an unsuccessful delivery date?
v. What are the methods you think you could use to overcome this issue?

11) Unrealistic delivery dates?

i. Did you face any situation with requesting of unrealistic delivery dates?
ii. If so, who is requesting for unrealistic delivery dates?
iii. Did you accept it? If yes, what are the procedures, you used to achieve the target?
iv. If you cannot accept it, did you explain it to the relevant party beforehand?
v. How did this effect the project delivery?
vi. Any suggestions to overcome this kind of issues in future?

12) Poor site condition

i. Did you face any poor site condition and which led to unsuccessful project delivery?
ii. What are the issues you had to face because of it?
iii. Who is responsible for this?
iv. What was the impact for the project delivery date due to this issue?
v. What are the actions did you take to overcome this issue?

13) Weather condition

i. Did you face any bad weather conditions during the construction of the project?
ii. What sort of a weather condition was it?
iii. How did it affect the project delivery date?
iv. Was any party responsible for this?
v. Any suggestions to overcome this problem?

14) Contract modifications or mistakes

i. Do you/your company have a contract to sign before commencing the work?
ii. Did you ever find any mistakes in your contact?

iii. Did you face any contract modifications? If so what was the reason for the modifications?
iv. Who requested the modifications?
v. How did it affect the project delivery date?
vi. Any suggestions to avoid identified issues in future?

15) Claims & Disputes

i. Did you face any claims or disputes? If so, what was the reason for it?
ii. With which party, did you face it?
iii. What are the methods you used to solve the issues?
iv. How did this affect the project delivery date?
v. Any suggestions to avoid identified issues in future?

16) Top Management support

i. Did you face any problems with top management and their support?
ii. If yes, what sort of issues did you have to face?
iii. Did lack of their support effected the project delivery date?
iv. If you are not satisfied, is there anything you feel should come from them?

17) Relationship with client

v. Do you think a good relationship with a client helps to have a successful delivery?
vi. How is the relationship with you and your company with the client?
vii. Did you face any issues with your client? If yes, what sort of issues did you have to face?
viii. How did it effect the project delivery date?
ix. How to overcome the identified issues in future?

SECTION - C (Suggestions)

1) Are there any other factors affecting the successful project delivery?

2) Do you have any suggestions to improve the current process to have many successful project deliveries in future?

FACTORS AFFECTING SUCCESSFUL DELIVERY OF INTERIOR DESIGN PROJECTS IN SRI LANKA

INTERVIEW GUIDELINE

Company Name (Optional):

Designation of the interviewee: *Director/ Interior Designer*

Year(s) of experience: *21 Years*

Date: *2017/06/02*

SECTION - A (Background Information)

1) How many Interior Design projects have you/your company completed during the last five (5) years?

   25 Projects

2) Of them, how many projects did you manage to deliver successfully?

   About 15 Projects

   i. Did you deliver it on time as initially planned?

      Some yes, for some extensions were taken with the approval of the client.

   ii. Is it under the initial budgeted price?

      Some yes, more like 50%

iii. Is the quality up to the standard you and your client expected?

Yes

3) How many projects failed to deliver successfully? Was it a time factor, cost factor or a quality factor that caused it to fail? Please give reasons for your answer.

About 10 projects got failed to deliver successfully. It was a time factors.

Because client took long time to take decisions. Also, the weather effected. Then materials were not available. Some items were imported. So, shipment was delayed. Faced few labor issues. Some workers have gone for holidays and didn't return on time.

SECTION - B

Below are the factors affecting the success of a project delivery. Based on your work experience, please answer who is responsible (e.g. client/designer/contractor/external party) and what are the methods you used to overcome those issues.

1) Poor Communication

i. Did you face any communication issues with your stakeholders? If so what sort of an issue did you face?

Sometimes yes- Client has appointed someone to execute the project, and that person has not communicated properly to the client. So, because of that we had bit of communication issues in some projects.

ii. With which stakeholder did you face it?

Client

iii. What was the method you used to communicate?

Site meetings and emails

iv. How did it affect the project delivery date?

It effected a lot. Certain times client without informing us they had put dates for their opening and informing us only week before. So client is being very un-fair at times and

insisting they want everything to be completed as they wish. So this is everything to be do with proper communication.

v. Do you maintain records?

Yes, we do

vi. Are you satisfied with your method of communication?

Very much, but client should be very clear with what they want and what time

vii. How could you overcome the issue you faced?

Documentation is very important. Should minute and keep records until you complete the project.

2) Payment Problems?

i. Did you face any payment problems with your stakeholders? If so, with which stakeholder did you face it?

Yes, With the Client

ii. What are the payment related issues you had to face?

They didn't pay (laugh), Well we also couldn't deliver on time, so they also took long time to make the payment

iii. What was the reason behind it?

Because of the delay of delivery stuff

iv. Did the work speed reduce due to payment issues?

No, I mean we took extra one week and finished everything with the approval of the client.

v. How could you overcome the identified issues?

Its just you have to give prompt attentions and deliver on time to get the payments from client on time.

3) Lack of experience/skills/low productivity of labor

i. How experienced are your interior designers? Are you satisfied with their work?

Very much, and yes satisfied with their work too.

ii. How experienced are your contractors? Are you happy with them and their work?

They are also very good, and happy with them

iii. What are they lacking when handling a project?

Designers- I would say they are qualified but sometimes there are few mistakes in the drawings. Also technical side designers are lack of it

Contractors - They also have labor issues, also sometimes they don't know how to read the drawings, so we faced few issues because of that

iv. Did the lack of experience/skills/low productivity of labor affect your project? If so, from which stakeholder did you notice it?

Yes, from the contactors and also from the designer. If it's not right I made them even 100 times to get it correct. I will never compromise on quality and will always make sure client get the best outcome.

v. What are the actions you took to overcome this issue?

Same as mentioned earlier. I make sure to deliver the best to client

4) Shortage of materials in the market

i. Did you face any shortage of materials during a project?

Yes

ii. What sort of issues did you face?

Like lack of accessories - furniture accessories

iii. What are the precautions you used at that time?

We always minute everything. I totally believe in very strong relationship with client through the emails. And talking truth. So, I always update the client and what's happening at the moment, so client gives the approval for extra time or to use something else.

iv. Who is responsible to overlook the materials?

Supplier/ Contractor

v. How did it affect the project delivery date?

Simple, it got delayed.

vi. How could you overcome the identified issues in the future?

We have to be much more prepare. Sometimes its not practical to keep ex stocks. We have to work with what's available. Best is to do a proper research it the market before designing

5) **Delays and incomplete drawings or specifications?**

i. Did you face any issues regarding delays and incomplete drawings or specifications?
No, Very rarely

ii. What are the issues you faced because of that?
Small things like colour difference.

iii. Who is responsible to issue the drawings and specifications on time?
Designer

iv. How did it affect the project delivery date?
It didn't affect

v. How could you overcome the identified issues in the future?
Have to be much more specific before giving the drawings.

6) **Delays in approving samples/materials?**

i. Did you face any delays in approving samples/materials?
Yes, Sometimes

ii. What is the reason behind delaying in approving samples/materials?
That is again like getting in to the right channel. In Some bigger projects client appoints someone to execute the project and we hardly meet the client directly. So that person is scared to go and speak to client all the time, so when we give a sample for approval, that person waits for right time to meet their boss, so because of that it gets delay to get the approvals. Sometimes if the wait is too long we had to speak to the client directly and client has no clue about the sample

Who is responsible to provide samples and materials?
Designer

iii. Who is responsible to approve the samples and materials?
Client

iv. How did it affect the project delivery date?
Like I mentioned earlier, didn't get the approval on time and just waiting to hear from them, so yes project gets delay.

v. How could you overcome this issue in the future?

There are certain issues which you cannot overcome. Some you have to just face it. Like bad weather we cannot do anything. So this also something like theat. Because we cannot go pass appointed people and meet the client directly. If we go pass them, then they get angry and they make even hard to work with. It's a human conflict. So have to work peacefully with everything.

7) Changes in the design frequently

i. Did you face any issues with changing the design frequently?

Very Much

ii. If so, who changed the design frequently?

Most of the time its client. Sometimes designers have to change it due to structural limitations.

iii. What was the reason for these changes?

Client change their mind due to cost and make it cost effective and like I mentioned earlier due to structural issues

iv. How did it affect the project delivery date?

Sometimes it affected, sometimes it didn't. It all depends of capability of redoing.

v. How could you overcome the identified issues in the future?

You just cannot. Because client is the king

8) Construction mistakes / defects work / lack of quality

i. Did you face any construction mistakes/defects/lack of quality in projects?

Sometimes, yes

ii. What sort of issues did you face because of this?

Its depend on the number of contractors work in project. Some contactors don't come under us, so we have no control. So, because of that we sometimes face issues and we have no say.

iii. Who was the responsible party for this?

I could say it's the sub contactor

iv. When did you notice those issues? During the project or after the project completion?

During the project.

v. What are the methods you used to correct it at the time?

Throughout the site meeting we informed the sub contactors

vi. How did it affect the project delivery date?

Very rarely it affected. We somehow managed it

vii. Any suggestions to avoid similar kinds of issues in the future?

It all depends on the structure and contractor.

9) Shortage of site labor

i. Did you face any shortage of site labor during your project construction? If so what are the issues you had to face at that time?

Not all the time, may be if there was any special holidays then people go and they didn't come back on time.

ii. Who is responsible for this?

Contractor

iii. What are the actions you used to overcome the issue?

We couldn't take any actions at that time

iv. How did it affect the project delivery date?

It didn't really affect the project.

v. Any suggestions to overcome similar kinds of issues in the future?

Should introduce strict rules and regulation to all the labors.

10) Project Planning

i. Who is preparing the project plan?

Sometime PM, sometimes designer. We always have a plan, so we work according to that.

If it's a huge project then project consultant is preparing it

ii. Did they discuss it with all the parties before preparing the project plan?

Yes, we were supposed to show our plan to consultant and then they amend accordingly

iii. Did you face any issues with the project plan? If so what sort of issues was it?

Conflicts. Working with so many different suppliers, working with support services.

iv. Do you think improper planning led to an unsuccessful delivery date?

That can happen too

v. What are the methods you think you could use to overcome this issue?

Should have a proper planning

11) Unrealistic delivery dates?

i. Did you face any situation with requesting of unrealistic delivery dates?

Sometimes they do.

ii. If so, who is requesting for unrealistic delivery dates?

client

iii. Did you accept it? If yes, what are the procedures, you used to achieve the target?

It is like this, I sometimes I of course say I cannot if I can't do it, sometimes they kind of coming to an agreement saying we only want certain items and rest you can delivery later. If so yes, then we also agree and go ahead with it.

iv. If you cannot accept it, did you explain it to the relevant party beforehand?

Yes, always

v. How did this effect the project delivery?

It got delayed, when you explain and told the client, they were aware of new delivery dates, so they understood and agreed

vi. Any suggestions to overcome this kind of issues in future?

In reality it is not possible, working with human and at the end it's the client.

12) Poor site condition

i. Did you face any poor site condition and which led to unsuccessful project delivery?

Yes, sometimes

ii. What are the issues you had to face because of it?

Like, not given proper protection from the bad weather. Out stuff got damaged due to their mistakes, they haven't got any precautions to cover the items or the area

iii. Who is responsible for this?

It is of course client. They want stuff in hurry but site is not ready

iv. What was the impact for the project delivery date due to this issue?

We had to re do the work, and had to take permission from client

v. What are the actions did you take to overcome this issue?

Nothing really

13) Weather condition

i. Did you face any bad weather conditions during the construction of the project?

Yes

ii. What sort of a weather condition was it?

Rain

iii. How did it affect the project delivery date?

That of course during the project meeting, we discuss those things and we came to a mutual agreement.

iv. Was any party responsible for this?

No

v. Any suggestions to overcome this problem?

You cannot

14) Contract modifications or mistakes

i. Do you/your company have a contract to sign before commencing the work?

Yes, we do now

ii. Did you ever find any mistakes in your contact?

Yes, at the begging

iii. Did you face any contract modifications? If so what was the reason for the modifications?

Sometimes, if client want certain changes. We usually go with standard format. Depend on the situation we had to modify to suit the client. And sometimes then things they put we discuss and modify

iv. Who requested the modifications?

client

v. How did it affect the project delivery date?

Everything before handed. So it didn't affect

vi. Any suggestions to avoid identified issues in future?

Should be very specific about the contract and you should be able to change it depend on clients request.

15) Claims & Disputes

i. Did you face any claims or disputes? If so, what was the reason for it?
Yes, payment related

ii. With which party, did you face it?
client

iii. What are the methods you used to solve the issues?
We justify what we have done, how we did it and basically, we showed all our records

iv. How did this affect the project delivery date?
It was not during the project, so it didn't affect

v. Any suggestions to avoid identified issues in future?
Better to have a proper contract before starting the project

16) Top Management support

i. Did you face any problems with top management and their support?
NA

ii. If yes, what sort of issues did you have to face?
NA

iii. Did lack of their support effected the project delivery date
NA

iv. If you are not satisfied, is there anything you feel should come from them?
NA

17) Relationship with client

v. Do you think a good relationship with a client helps to have a successful delivery?
Yes

vi. How is the relationship with you and your company with the client?

We always try to make a close relationship

vii. Did you face any issues with your client? If yes, what sort of issues did you have to face?

Yes, payment related issues.

viii. How did it effect the project delivery date?

When you have very good relationship with client you get correct and communication is very fast and effective, so it works well. Which is really good

ix. How to overcome the identified issues in future?

You have to have a better relationship with your client

SECTION - C (Suggestions)

1) Are there any other factors affecting the successful project delivery?

No, I think it covers everything

2) Do you have any suggestions to improve the current process to have many successful project deliveries in future?

All to do with the relationship with client. If you have direct relationship with client everything goes smoothly. It's always better to have great relationship with client and designer.