



A PROJECT MANAGER'S ABILITIES TO COMPLETE TURNKEY PROJECT

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Abstract : A project manager's competence in completing a turnkey project is crucial for its successful delivery. They shoulder the responsibility of overseeing and managing every aspect of the project, from its initial planning stages to its final execution and delivery. With their expertise in project management, these professionals effectively coordinate various tasks, ensuring that all components come together seamlessly to create a fully functional solution. Their ability to efficiently allocate resources, manage timelines, and communicate with stakeholders plays a pivotal role in meeting client expectations. By employing effective project management techniques, such as creating detailed project plans, identifying and mitigating risks, and fostering effective teamwork, project managers can optimize the chances of successfully completing turnkey projects. Their proficiency in handling the complexities of such projects enhances their capability to deliver comprehensive solutions that meet the client's requirements and are ready for immediate use.

Index Terms – Strong project planning skills, effective leadership and team management, risk assessment

I. INTRODUCTION

The ability to effectively manage a construction project through the use of technical tools and careful planning is paramount in meeting client requirements and ensuring the safety of workers. It falls upon the project manager to ensure that skilled workers are hired for the project, guaranteeing its timely completion and adherence to the allocated budget. One of the most challenging phases of conducting research lies in analyzing and evaluating the research approach. The initial stages involve elucidating the purpose and objectives of the study. Employing appropriate methodologies and procedures, coupled with diligent effort, is crucial for yielding positive and enhanced outcomes in research projects. Additionally, it is imperative to examine the primary objective given the extensive body of knowledge available. The objective of this study is to ascertain whether a construction project manager possesses the necessary qualifications to successfully execute a turnkey project. In turnkey projects, the contractor is responsible for carrying out all aspects of the project, regardless of its size or complexity, based on a predetermined and final agreement once they receive the work order. The assessment and implementation of a turnkey contract typically rest solely with the owner or contractor, particularly in the case of infrastructure projects. One of the benefits of a turnkey contract is that the contractor assumes all liabilities, regardless of their magnitude, associated with the project. Contractor companies offer comprehensive services encompassing design, construction, and general contracting when presenting their bids. Clients have the option to select a pre-existing project or, alternatively, they can be provided with a customized design before the project commences upon approval. Prior to initiating the project execution, it is crucial to address theoretical considerations and ensure the completion of all necessary documentation, including the essential general contract. This study primarily focuses on evaluating the project manager's ability to assess the feasibility of a project and execute it using a turnkey approach. Understanding the requirements of higher authorities and clients is crucial for determining the project manager's competency and knowledge. Establishing clear research objectives is a critical step in this process. Additionally, efficient personnel management is essential for overseeing and coordinating the various tasks involved in a construction project.

1.1 Objective

- Determine the skills that the project manager needs in order to carry out the task in accordance with their thorough understanding of construction management at each project's stages are,
 - Project in Proposal
 - Project in Establish
 - Project in Execution
 - Project in Ended
- The goal of this research is to determine the level of project manager expertise required at each stage to successfully complete the project.

1.2 Need for study

- Design and production are combined by turnkey manufacturers, allowing for seamless communication between the designer, manufacturer, and installation. Without hassles and phone calls, in every modification to equipment's design is conveyed and there is taken into the account during the installation process and manufacture.

1.3 Scope of work

- Project manager prepares the budgets based work and resource requirements.
- And the project manager has to manage project progress by work as required, manage relationships with the clients.
- The team leader and person in charge of getting the job done, the project manager is chosen by the performance organisation.

1.4 Research Methodology



Figure 1 Plan of methodology

II. LITERATURE REVIEW

(Prabhakar, 2005) The project manager, as well as his or her leadership style and ability, are mostly ignored in the literature we reviewed on project success determinants. To the mainstream management literature, this is in stark contrast. The literature on leadership in the context of projects is reviewed in this essay. We begin by discussing the general management literature on leadership and demonstrating how this has been represented in the literature on project management. We give particular example where it has been represented in the literature on project management. We review the research in job duties, technical skill of project.

(Control et al., 2008) Project have rely on the technology and tools in the modern technology advanced corporate environment because of their scale and complexity. Additionally, the advantages of information technology (IT) and knowledge management (KM) are pushing even co-located project teams to utilise technology for communication and collaboration. Incorporating new processes, increasing capital, and

managing time-to-market objectives for new items are all accomplished through the use of projects. Prevalent experience that have many project have been failed in advanced in discipline and profession of project management. There is an way to increase the project performance though, not through technology.

(Nesbit, 2009) The two parts of the project manager's duties defined by Neuhauser (2007) are mirrored in the roles of project manager and project advocate. In this there are the nine characteristics it has compared between project champions in kerner's study and project managers. The key distinction between a project manager and a project champion is that the latter tends to be more concerned with people and processes. Project manager has also prefer there works in groups and committed to their duty. These project manager-related features that are concerned with people and processes are congruent with the significance of comprehending those components that are concerned with people and management.

(Pereira & Carvalho, 2009) Companies had to concentrate on their intangible patrimony, which had previously been assigned to a backup plan when not forgotten, as the industrial age ended and the information age began. In addition to criteria related to cost, time, and product/service quality, various performance measurements have been created over time. These metrics made it easier to identify what defines successful and unsuccessful project performance. The project scope includes, various group of individuals, decision making, and the communication.

(Anantatmula, 2010) Since projects are typically one-of-a-kind, complexity, and ambiguity are frequently present. There is no doubt that the job of a project manager is more difficult than that of a functional manager in general. The project manager faces additional difficulties such as exercising leadership without formal, documented authority and working in matrix organisations where unity of command is a problem, in addition to juggling multiple functional and organisational environments that are typically built to support functional managers. Adding to the complexity of the situation, several project team members are working on many projects at once. It has been noted that bad morale, a lack of motivation, a lack of commitment from the workforce, and poor productivity all contribute to projects failing to complete on time and within budget. According to Kerzner's findings, concerns pertaining to individuals are extremely important.

(Vassileva & Nikolov, 2016) The rate at which the world is changing is unprecedented. Today's corporate environment is marked by rising complexity, unpredictability, and discontinuity. Companies are being forced to reevaluate their established processes and business strategies due to shifting market conditions, more global competition, and shorter product life cycles. The level of competitiveness in the world is rising and will keep rising. According to argument, certain rising economics more frequently because fear losing their economy and country best name. And there are the responsibilities, protection, are the examples of proctect policies. By highlighting their predominance in international organisations, emerging economies will greatly enhance the demand to be included in decision-making as a counter balance.

(José Sousa et al., 2017) Markets that are becoming more competitive have made it essential for businesses to either have continuously expanding and adaptable organisational structures or to make sure that past triumphs can be repeated in similar circumstances in the future. Similar to this, in the field of project management, it is anticipated that the outcomes from earlier projects would be used. In recent decades, there has been a substantial evolution in both project management and the tasks and responsibilities given to project managers. Project management procedures and methods are now distinguishing capabilities in achieving competitive advantages and achieving organisational goals. Since their retention encourages the capacity to execute process improvement and the company's ability to adapt to the market environment, identifying these abilities and measuring them have become a priority.

(George, 2020) The project's captain is its project manager. Senior managers are not prepared to handle the challenging and time-consuming role of project management, which is why one is required. The majority of the time, senior managers are engaged in business-related activities. The project manager serves as the project supervisor and is responsible for making sure that the project's goals are met within the constraints of its allotted time, money, and resources. For the majority of the resources required to complete project goals, the project manager depends on the functional manager to organization. The functional unit and other project stakeholders should be able to work with him easily to manage the project. Between the organisation and the project, it is important to clear lines of responsibility.

(Priya, 2021) There will be very little effort required of the project manager or customer. When a turnkey project is finished, the client may anticipate receiving it back completely functional. The effectiveness of an employee is influenced by a number of factors rather than being the result of a single input. These elements have to do with the workplace where the employees are employed. And the individual performance is influenced by condition at the work, working environment, reading opportunities, safety conditions, participate in decision-making, financial and training consideration, like regular compensation, salary, etc. The dedication to completing turnkey projects from design to commissioning makes them much more complex and difficult in this situation

III. Data Collection

A questionnaire was created to highlight the crucial phases of the project manager's ability to complete turnkey project after extensive research and literature review. A survey questionnaire was created to assess the project manager's proficiency in the proposal, setup, execution, and close-out phases of the project. The first strategy used in this research is to assess the relative weight of the four main components and their subfactors in order to determine the project manager's skills. This research study incorporates data from various sources, including the project's owner (the client) and individuals responsible for appointing project managers or overseeing multiple projects. Additionally, insights from project managers themselves are considered, as they possess knowledge of the project's status and their plans to address relevant circumstances. The overall objective is to examine the involvement of agencies and personnel in the execution of construction projects, along with the methods, techniques, and equipment under the direction of project managers.

3.1 Questioner design

Very Strong	Strong	Moderate	Less	Very Less
5	4	3	2	1

Table 1 Measure Scale

IV. DATA ANALYSIS

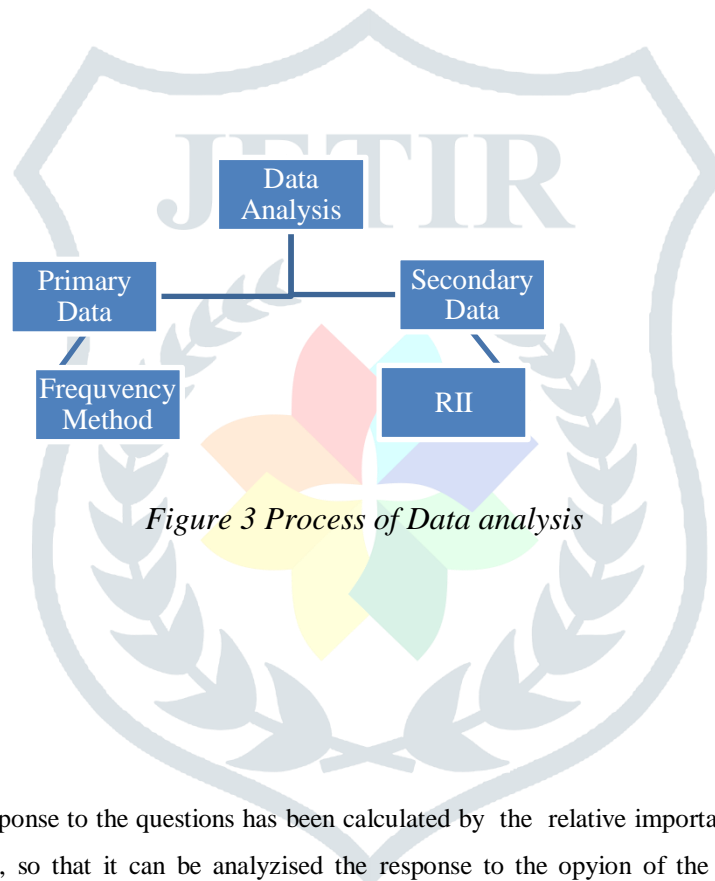


Figure 3 Process of Data analysis

4.1 Data Analysis by RII

The method to identify the response to the questions has been calculated by the relative importance index method for each answer option has been given, so that it can be analyzed the response to the option of the answer is the most given importance. The answer which have the highest relative importance index (RII) is the most preferred choice.

The questionnaires survey are collected and solved for giving the rank place on Relative Importance Index

$$RII = \Sigma W/AN$$

Equation 1 RII Analysis

$$Relative\ Importance\ Index = \frac{5 n_5 + 4 n_4 + 3 n_3 + 2 n_2 + 1 n_1}{A \times N}$$

Equation 2 Relative Importance Index Method

Where,

RII = Relative Importance Index.

W = response given to each question by the respondents (ranging from 1 to 5) A =

Highest weight (i.e. 5)

N= Total no of respodants

The Respondents which has given the ans as 5 is having highest weightage and the ans 1 is the lowest weightage.

For example, 5 = very strong,4 = strong,3 = moderate, 2 = less, 1 = very less

4.1.1 Factors and Responses

NO.	Questions	Very Strong	Strong	Moderate	Less	Very Less
1	Sufficient data collection and survey before design	15	20	09	13	06
2	Lack of Knowledge of construction management	17	21	08	11	07
3	Should have knowledge of market rates	20	17	09	05	04
4	Proper Detailed specification of the activities	25	20	07	10	04
5	Knowledge of the Drawings	19	24	12	07	06
6	Does the Competencies of project manager affects the project success	16	21	11	10	03
7	Co-ordination with Purchase and account department	22	16	09	11	05
8	Duration of project such as change in market rates,Machineries, shortage of labor effect the project	20	25	12	14	07
9	Error in Measurement and quantity and estimation	15	20	08	12	09

Table 2 Data collected from questioner

4.1.2 Factor RII Rank

NO.	Questions	RII	Rank
1	Sufficient data collection and survey before design	0.8875	3
2	Lack of Knowledge of construction management	0.9068	4
3	Should have knowledge of market rates	0.9364	3
4	Proper Detailed specification of the activities	0.9435	3
5	Knowledge of the Drawings	0.8745	5
6	Does the Competencies of project manager affects the project success	0.8175	4
7	Co-ordination with Purchase and account department	0.8985	3
8	Duration of project such as change in market rates, Machineries, shortage of labor effect the project	0.8885	5
9	Error in Measurement and quantity and estimation	0.7845	3

Table 3 Result of RII method

4.2 Correlation Method Statistics

In this study, the above table given data it has taken from the SPSS software using Mean, Standard Deviation and Variance Methods.

No	Question	Mean	Std. Deviation	N
1	Sufficient data collection and survey before design	2.51	.970	65
2	Lack of Knowledge of construction management	2.73	1.117	66
3	Should have knowledge of market rates	2.91	1.298	66
4	Proper Detailed specification of the activities	2.97	1.301	66
5	Knowledge of the Drawings	2.92	1.232	66
6	Does the Competencies of project manager affects the project success	2.92	1.100	66
7	Co-ordination with Purchase and account department	2.91	1.208	65
8	Duration of project such as change in market rates, Machineries, shortage of labor effect the project	3.12	1.139	65
9	Error in Measurement and quantity and estimation	3.02	1.139	65

Table 4 Statics from SPSS software

V. CONCLUSION

In this conclusion says that the project manager has the responsibility, situation and different different tasks. Based that the knowledge and the mindset of the tasks have varied. The first stage study that market rates and quantity evaluation has to maintain the profit. And in second stage there is an properly plan and organize the tool and equipment is developed, because the project manager must use that knowledge to ensure proper planning and organization. In third stage the project manager has the planning and visualization. In this the project manager make a decision and must be clear. In this research identify that the factors that on project manager has complete the project. Data is analysed by (RII) Relative important index method and there is method which using SPSS software. And the factors are identified by the literature paper and questionnaire forms. And this construction contract, the project manager has to maintain the connection between building owner and contractor. And in this turnkey contract construction appoints the good project manager and responsible and keep the client informed about any changes. When selecting a project manager skills, experience should be taken, because every person has different ability, work pattern, style and attitude towards work. While working in the turnkey project the manager has need to careful that the work goes exact as plan from starting to end. The open communication and trust by the project leader it plays an important role in knowledge sharing, team development, supportive role of technology and innovation.

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