IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

A STUDY ON TIME, COST, QUALITY (TCQ) AND RISK MANAGEMENT IN SCHEDULING OF VARIOUS CONSTRUTION PROJECTS

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ABSTRACT:

This study aims to assess and explore time, cost and quality management in the construction industry. The purpose of the study was to identify factors that affect time; Cost and quality management in construction projects. This study is limited to the perspective of an appropriate sample of professionals in the construction industry. The method used to collect the data is the questionnaire and interview, but is subject to descriptive statistical analysis using the percentage, mean score and frequency of data collected. The main factors affecting time, cost and quality in a construction project were planned and scheduled deficiencies, fraudulent methods and the kickback and lack of and clear evaluation standards. The study recommends that the construction team work hard to ensure effective management of time, cost and quality in the construction product. The objective of this study is to analyze how time, cost and quality management on construction projects is perceived by those involved in project teams. Conclusions are drawn up and recommendations are made regarding time, cost and quality management estimates for construction projects.

In the construction industry, the concept of risk management is a less popular technique There are three main stages in the systematic approach to risk management in the construction industry. These stages include: a) risk response; B) risk analysis and assessment; And c) risk identification. The high risk associated with the construction business affects everyone in it; However, functional analysis and construction hazard management is a very big task for industry professionals. This study will lead to a review of the existing literature on construction project risk management in developing countries, especially on the risk management process. There are not enough risk management process approaches in the literature that can capture the risk effects on different project objectives. The purpose of this literature review is to explore the most frequently used methods in risk identification and analysis. It also seeks to clarify the various classifications of risk sources in the existing literature in developing countries and to identify future research directions on project risks in the construction sector in developing countries.

I. INTRODUCTION

The construction industry is one of the industries that has a huge impact and contributes immensely to the global economy. Achieving a well-executed project requires maintaining multiple goals. Schedule and cost are calculated and maintained as two important goals. In general, reducing project duration increases direct costs and vice versa. Schedule is important because delaying an activity can increase the overall project duration and total cost and can sometimes lead to delays in claim disputes between parties. The ability to deal with the problem of Time and Cost Tradeoff (TCT) gives the construction company to take advantage of your competitors. Many researchers have extensively researched the TCT problem, using appropriate methods to execute project activities.

Quality performance is considered in recent contracts along with time and cost factors. In general, the use of lower-tech methods and cheaper resources leads to longer project duration. Implementing new technologies and productive resources can reduce project time, but also increase project costs. Construction project quality may deteriorate due to reduced project time or cost. As a result, degradation and aging of related construction projects, including bridges, tunnels and highways, for example, may occur faster than expected and the cost of maintaining, restoring or rebuilding the system may be higher than expected. Therefore, construction planners often balance three conflicting objectives in practical projects, including project time, cost and quality. Balancing the time, cost and quality of a construction project becomes an important criterion for determining whether a project is successful. Recurring construction projects are prominent in the construction industry.

A repeated or recurring construction project is a project whose activities are repeated in the same or similar units. Repeated construction projects can be found on high-rise buildings, numerous housing projects, highways, pipeline networks and bridges. In repetitive projects, construction workers must move and repeat the same activity in a certain number of units (floors, house, spans, etc.). By repeating tasks, it is important to find the optimal staff to execute the project, which can generate cost with minimum project duration and acceptable quality. This is because different staff structure affects different project outcomes. Of course, these complex issues require some strategies and a lot of thought before implementing the project.

To get proper planning and project time, cost and quality estimates, another important factor to consider is uncertainty. Certain project parameters, such as duration of operations and associated costs, are rarely known and may be subject to estimation errors. Construction projects are often executed in an uncertain environment, i.e. weather conditions, site conditions, equipment conditions, delayed material delivery, labor productivity, inflation, etc. All uncertainties affect the TCQ of the project. Therefore, it is important to consider uncertainty in project planning and estimation to provide more realistic and applicable results in transactions with time-cost quality.

NEED OF TCQ MANAGEMENT

For the planning and management of a successful project, three parameters of time, cost and quality must be considered. Hughes and Williams (1991) argue that these three factors should be taken into account in achieving client goals, and that these factors are the same for both the three points of a triangle and the omission of one factor over the other can have detrimental effects. On behalf of this, Lansley (1993) argues strongly for the significance of studying the behavioral aspects of management in an attempt for addressing the problems facing the construction industry, i.e. the 'human factor' problem involved in construction projects which is to be resolved.

Rwelamila and Hall (1995) argue that there is a small evidence for successful projects that balance these three factors and that time, cost and quality management need to be assumed as a method of human activity.

The objective of this research is for exploring how those involved in project teams perceive time, cost and quality management on construction projects. Conclusions and also recommendations are made regarding time, cost and quality management estimates for construction projects.

TIME, COST AND QUALITY (TCQ) MANAGEMENT IN ACHIEVING CLIENT GOALS

The concept of management of construction projects is embedded deeply in the conventional building procurement system. Ireland (1983) argues that the main practical goals of the customer in any of construction project are time, cost and quality. Although it has been said that time, cost and quality are involved in the management of construction projects, research has shown that there is actually a time-cost bias.

1.Time

Completion of a construction project in the given time is frequently considered a crucial criterion for project success through clients, contractors and advisers. Newcombe etal. (1990) spoke that the failure of the construction industry to deliver projects in a timely manner has been widely dispraised. NEDO (1983) stated that the prompt completion of a construction project requires disciplined operation trouble and that this collaborative management trouble will help control both cost and quality. This is commensurable to saying that client pretensions can be attained through a operation trouble that recognizes the interdependence of time, cost and quality.

.2. Cost

To this day there is a trend for research focusing on the technical aspects of cost management on construction projects in the pursuit of client goals. There is very little documentation in the published literature to worry about the organizational, social and political issues inherent in the management of construction costs and the ability of the project team to meet client needs in terms of cost.

3. Quality

For the client, quality is delineated as one of the components that contribute to" value for moneybags" (Flanagan and Tate, 1997). Vincent and Joel (1995) define total quality operation as

“The amalgamation of all functions and processes within an organisation in sequence to achieve continuing advancement of the quality of goods and services. The goal is client satisfaction.” Furthermore, to achieve a triumphant project quality management must maintain three different drivers for quality management, namely:

• Consolidation of the project team to ensure a common goal and a common culture.

• Customer centre of attention for the team to provide products and services that meet customer needs.

• Continuous development process in construction project management.

When these three components are successfully consolidated, the project will begin to realize significant, measurable and noticeable improvements in achieving client goals.

An effective way to address these shortcomings is to identify the 'human' factor in managing time, cost and quality.

Analysis of the expectations held by customers, contractors and construction professionals regarding customer objectives in terms of time, cost and quality management would allow them to explore this proposal. This is done through an opinion surveys.

FACTORS AFFECTING TIME IN VARIOUS CONSTRUCTION PROJECTS

1. Deficiencies in Planning and scheduling
2. Shortage of labor
3. Design changes
4. Slow Decision Making
5. Delays in work approval
6. Delays in acquiring information
7. Delays in inspection and examination of work
8. Organizational Deficiencies
9. Inadequate drawings
10. Inadequate number of equipment
11. Construction materials Shortage
12. Issues with neighbors
13. Delays in delivery

FACTORS AFFECTING COST IN VARIOUS CONSTRUCTION PROJECTS

1. Deceitful practice & kickbacks
2. Inefficient contract management
3. Errors and discrepancies in contract document
4. Errors in cost estimates
5. Design variations
6. Construction methods
7. Increase in material prices
8. Changes in site conditions
9. Relationship between labour and management
10. Financing and payment of completed work
11. Payment issues
12. Weather changes
13. Lack of availability of Materials

FACTORS AFFECTING QUALITY IN VARIOUS CONSTRUCTION PROJECTS

1. Absence of clear uniform evaluation standard
2. Unclear control process
3. Lack of coordination
4. Problem in Material management
5. Faults during constructions
6. The designer's ignorance of the customer's need
7. Non-compliance with the terms of the contract
8. Regular equipment breakdowns
9. Inefficient communication
10. Inadequate drawings
11. Unavailability of technical staff
12. Weather conditions
13. Limited site
14. Unforeseen geological conditions

II LITERATURE REVIEW

Ederbag et al. (2018) Analysis of cost and scheduled risks associated with the design and implementation of 20 housing units for low-income individuals in Tripoli, Libya. Cost and schedule risks are integrated and analyzed using simulations in Monte Carlo. Both scenes, pre- and post-mitigation, were performed and compared to the original plan. The results showed no risk with 20% high, 25% moderate and 55% low risk 22% medium and 78% low risk. Zheng et al. (2010) Failure Mode and Impact Analysis conducted as part of a case study in China under Risk Management, Environment and Quality Management for OHS. It assessed 20 potential hazards and revealed five potential hazards: "hole in the ground at construction site", "collision with falling objects", "running through operating equipment", "elevator shaft falls" and "scaffolding". Falls "included. Classified as unacceptable. Furthermore, improving OHS, the environment and quality are crucial in implementing comprehensive risk management.

C. Borisovich (2008): Most companies know that risks are not visible on a linear basis and therefore risk cannot be identified and measured. The real challenge is to assess and understand the interrelationships of risks and their associated effects. These complex relationships require a different set of tools. An organization can begin to create an effective map of its risk landscape by simulating multiple accident scenarios and using tools related to risk interdependencies. The aim of the study was to understand the cumulative effect of risks on performance and value so that an appropriate mix between risk retention and risk treatment could be selected. Frank Talandier et al., (2014): Project success requires effective risk management. However, the implementation of such management is complicated due to the diversity and dynamic nature of the risk. In addition, each project has its own risks to shareholders; His own focus on the project and the risks and his own action. In this paper, we propose an agent-based model called SMACC to assess the impact of losses on a project. This model allows to test various risk mitigation strategies to measure their impact on the project.

Lo Sui Feng et al., (2008) covers a wide range of topics, including external risk management finance, politics and national cultures, and there is considerable literature in each area focusing significantly on risk management. External risk management is the same principles that apply to project risk management, rather than project risk management, that can be used to manage external risks as well. However, although external risk management is an important success factor for many construction companies that venture out of

their home countries, such as project risk, it is often overlooked by construction companies and construction companies, who generally do not have adequate management knowledge for external risk, or ignore the effects on their businesses of lack of external risk management . The aim of this study is to examine how construction companies attempt to manage external hazards during their entry into host countries. The study is based on the external risk management practices of Chinese contractors entering Singapore from Mainland China. A survey of all Chinese contractors in Singapore was conducted to gain better insight into the external risk management practices implemented by the typical Chinese contractor.

Mehdi Ebrat et al., (2013): As the duration, quality and budget of projects are likely to be affected by these risks, managers need to have a better understanding of the nature of the risks involved in a construction project. In this way, identifying and prioritizing risks at each stage of construction will help project managers plan to take appropriate action against those risks. Therefore, prioritizing risks over risk factors increases the reliability of success. This research is the first to identify the pitfalls in construction projects and to manage them as a systematic hierarchical structure. Subsequently, based on the data received, the Adaptive Neuro-Fuzzy Estimation System (ANFIS) was developed to assess project risks. In addition, a stepwise regression model was also developed and its results were compared with the ANFIS results. The results show that ANFIS models are more satisfactory in assessing the risks of construction projects.

Joseph Ohman et al., (2015): Risk management is receiving a lot of attention as it is considered as a way to improve the cost, timeliness and technical performance of new product development programs. However, there is a lack of empirical research into the effective integration of specific risk management practices proposed by different criteria with new product development programs and their association with different aspects of risk management success. Based on a survey of 291 new product development programs, this paper examines the integration of risk management practices with five categories of product development program performance: a. Quality decision making, b high program stability; C. Open, problem-solving organization; D. Total NPD project success and E. Total product success. The results show that six categories of risk management practices are most effective: 1. Developing risk management skills and resources; 2. Optimizing and integrating risk management with new product development; 3. Calculate the impact of accidents on your main goals; 4. Support all important decisions with risk management outcomes; 5. Monitor and review your risks, risk mitigation measures and risk management process; And 6. Create transparency regarding new product development risks. Data show that risk management practices are directly related to outcome actions in the first three categories (better decision making, program sustainability and problem solving). There is also evidence that risk management practices are indirectly linked to the outcome actions (project and product success) of the other two categories.

Wall Sharma et al., (2008): Many losses affect construction projects and cause changes in their management plans. Unfortunately, not all of them can be detected in advance. Therefore, risk management in the structure requires active and reactive treatment. Among other risk management tasks, risk remediation requires a better approach to rapidly developing concrete transformation processes and changing affiliate project management plans.

III METHODOLOGY

OBJECTIVE OF THE STUDY

Stratified Questionnaire Opinion Survey Conducted by Email. Survey participants included clients, architects, quantity surveyors, consulting structural engineers, project managers and general contractors. Questionnaires were sent to practices and organizations rather than individuals, quantity surveyors, consulting engineers, project managers and master builders. A total of 180 questionnaires were distributed including 30 from each sub-group. One hundred and forty-three answers (79.4%) were received, including 10 clients (33%), 24 architects (80%), 30 quantity surveyors (100%), 30 engineers (100%) and 25 project managers (83).). , And 24 general contractors (80%). The questions for each of the six groups of participants were designed to facilitate inter-group comparisons. In the discussion of results, the percentages in the tables indicate the proportion of respondents who expected it. Instead of providing conclusive evidence of group differences between design team members, the survey aims to highlight industry-related concerns in the project time, cost and quality management process.

Customers, as a group, are more likely to be less homogeneous than other participating groups. The majority of clients who responded to the survey described themselves as experienced in property development, with 80% stating a continuous or ongoing participation (50%) in property development. The majority of clients (90%) reported being involved primarily in the commercial and industrial sectors of property development, while the majority (67%) participated in the commercial sector. The majority of clients are responsive firms that have a significant financial impact on the asset development market and are involved in asset development, if not continuously.

In this case, the customer group exhibited reasonable consistency, but it should be noted that the views of small, lone customers in this survey were almost very low due to their ability to participate in the data collection method.

DATA COLLECTION

Relevant and necessary data were collected through questionnaires and scheduled interviews to achieve the goal of identifying factors that affect time, cost and quality management in project construction. Questionnaire provided to Architects, Builders, Quantity Surveyors, Contractors, Engineers and Clients.

Professional respondents (i.e. architects, builders, quantity surveyors and engineers) are in many cases qualified professionals involved in one or another project. 150 questionnaires were distributed and 122 representing 81% were received back while 100 were completed correctly, 66.7% of the total distributed and 82% of the total received, so 100 questionnaires were analyzed. Such obtained data is subject to detailed statistical analysis using percentage, average score and frequency.

DATA ANALYSIS

Table 3.1 is an analysis of the categories of respondents. Results show that architects make up the largest number (20%) of respondents, while clients make up the lowest number (15%). Table 3.2 shows years of work experience of the respondents. Defendants had an average of 11 years of work experience, indicating that they were competent enough to supply the reliable and up-to-date data needed for the study. Table 3.3 shows the number of projects undertaken or involved by the respondents. The average project 10, in which the respondent was involved or conducted, indicated that they had sufficient experience to provide the reliable and up-to-date information required for the purpose of the study.

Professional/ personality	frequency	percentage %
Architect	20	20%
Builders	18	18%
Quality surveyors	18	18%
Contractors	15	15%
Client	14	14%
Engineer	15	15%
Total	100	100%

TABLE I: RESPONDENT PROFESSIONAL/PERSONALITY

Year	frequency
1 – 5	30
6 – 10	25
11 – 15	19
16 – 20	15
Above 20	11
Total	100

Mean (M) = 10.53

TABLE II: RESPONDENTS YEARS OF WORKING EXPERIENCE

Year	frequency
1 – 5	30
6 – 10	28
11 – 15	18
16 – 20	12
Above 20	12
Total	100

Mean (M) = 10.40

TABLE III: RESPONDENT NUMBER OF PROJECT HANDLED OR INVOLVED.

RISK MANAGEMENT PROCESS IN CONSTRUCTION PROJECTS

Risk management can be defined as a systematic process such as analysing, identifying and responding to project risks. These include increasing the probability and impact of positive events and minimizing the impact of negative events to reach project goals. Risk management is considered a decision-making process and requires a comprehensive understanding of the known risks and / or actions required to minimize the impact and potential of such risks and increase the likelihood of success.

Risk management practices in the construction industry consist of three stages a) risk identification; B) risk analysis and assessment; and c) exposure response. The term risk identification refers to the identification and record keeping of relevant risks. Risk assessment, on the other hand, critically examines identified risks, improves risk description and assesses their effectiveness and impact on the project.

Risk feedback refers to the identification, selection, evaluation and action taken to implement a project. By utilizing the risk management process, a major improvement in construction project management performance can be achieved. The goal of the risk management process is not to eliminate all project risks altogether. Its goal is to create an organized framework that allows management to manage project risks more efficiently and effectively, which is very important.

i. Risk Identification

Risk identification can be defined as the process of analysing, consistently identifying, evaluating, and classifying the initial significance of the risks associated with construction projects and the interrelationships between these risks. The idea of risk identification is very popular and prevalent. This is of considerable value because the response management and risk analysis process only applies to identify potential risks.

This will have an impact on project development and success. Failure to identify potential hazards can lead to inefficiencies throughout the process. This can have a

profound effect on the resources available to the organization. Risk identification, however, can help organizations involved in risk management for: (a) having a better knowledge of the relevance of the process to identify the best and most important input data (b) identifying the risks and their implications (d) providing information for decision makers. With the help of various tools and methods, the risk identification process can be achieved.

These tools and techniques include brainstorming, interviewing, Delphi method, cause analysis, inference analysis and SWOT analysis. The first four methods are related to general techniques, while the last two methods are used exclusively to investigate a large range of possible phenomena of events. Table 3.4 shows that four methods of risk identification are most popular in developing countries when it comes to construction projects:

ii. Risk Analysis

Risk analysis is considered to be a critical assessment process of potential risks, allowing management team to prioritize them and select the most important ones.

Risk analysis is one of the most critical processes in risk management. This is because it assesses the likelihood of an accident and their consequences on project objectives. Its main purpose is to assess risk by distinguishing between unwanted events, the probability of an unwanted event occurring, and the magnitude of such events. This means that it is a transitional process between risk recognition and its management. It involves uncertainty in a qualitative and quantitative way to assess the potential effects of risk. The evaluation should focus primarily on the risks that have a high probability or impact. In risk analysis, two main approaches are widely used. They are: Qualitative Risk Analysis and Quantitative Risk Analysis and Sub-Category Semi-Quantitative. The choice of method depends on the following: the type and size of the intended project, the information available, the financial implications and time available, the experience of the analysts, the scope of the innovation and the ultimate goal of the results. The quantitative approach is mainly based on the probability of the spread of hazards. However, if enough data are available it can provide objective results.

Qualitative approach, on the other hand, is subject to personal experience, intuition and judgment. Therefore, the results may vary significantly from one analyst to another. As a result, the quantitative approach remains the preferred choice by many practitioners. The main qualitative diagnostic methods are: brain stimulation, expert judgment; Cause and effect diagrams; Checklist; Delphi; Event Tree Analysis (ETA); Risk Breakdown Matrix (RBM); Risk Data Quality Assessment. Moreover, the main quantitative techniques are: decision tree analysis; expected monetary value; Fault Tree Analysis (FTA); fuzzy logic; probability distributions; sensitivity analysis/tornado diagram. risk analysis techniques use computer-based simulators as: systems dynamics applications for PRMs and Monte Carlo simulations.

iii. Risk response

Once the project risks have been identified and analyzed, acceptable mitigation measures should be used to treat the risk. These mitigation stages largely depend on the nature of the risk and the possible consequences. The main goal is to increase the level of risk control, minimize the negative impact of the accident and eliminate the potential impact as much as possible. The measure becomes more effective when the relief measure has more control over the risk.

IV RESULTS AND ANALYSIS

SURVEY RESULTS

For the purposes of this study, the various collection systems were grouped into three general types, namely: conventional (traditional, negotiable, cost-effective); Design & Manufacturing (Design & Manufacturing, Package Deal, Turnkey, Development & Manufacturing); And management-oriented (management contract, construction management, design and maintenance) (Master man, 1992). Nearly 70% of respondent clients cite the traditional method of building acquisition as the most widely used procurement method.

Maintenance-based (21%) and design and build (9%) systems receive significantly lower usage. The results are discussed question-wise and the views of the participating groups on each issue are compared.

Question 1: Please indicate whether clients are realistic with respect to expectations of time, cost and quality at the outset of the project. (Answer choice = all/most/some/ none of the time)

Opinions show that the opinions of clients and consultants are not the same. Clients are relatively optimistic about their TCQ expectations, which many consider to be realistic. Architects have the most pessimistic view of the reality of clients' TCQ predictions, only the client's quality assumptions receive the majority positive feedback. This is probably due to quality control, with architects seeing themselves as the main agent for the client under more traditional procurement systems, compared to time and cost management, where they are responsible for contractors and quantity surveyors, respectively. Can present, find a similar response pattern with engineers and provide their leading role in engineering projects, may have a similar explanation for their ideas. Beyond the customer group, quantitative surveyors have the next most optimistic view, with the clear majority assuming that customers will have realistic expectations about time, cost and quality from the start of the project. The views of quantity surveyors are closely matched with those of project managers.

Project parameter	% of respondent groups						
	All	Clients	Architects	Quantity surveyors	Engineers	Project managers	Contractors
	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Time	57	90	33	67	47	60	63
Cost	57	70	44	83	41	72	46
Quality	74	80	65	83	59	84	79

TABLE IV: PERCEIVED EXTENT TO WHICH CLIENTS ARE REALISTIC, ALL OR MOST OF THE TIME, WITH RESPECT TO THEIR EXPECTATIONS OF PROJECT TIME, COST AND QUALITY AT THE OUTSET OF THE PROJECT

Question 2: Please rank the following factors in terms of their importance to building clients. (Answer choice: 1 = most important; 3 = least important)

All respondents to this question ranked the project price as the most important project parameter to build clients. An interesting finding from the answers to this question is that, contrary to the opinions of other project team participants, clients' project quality is more important than project time performance. The opposite is true for the other defendants. It shows that customers are willing to sacrifice preparation time for better quality.

Question 3: To what extent is an attempt made by the procurement team to match client needs with the characteristics of different procurement systems? (Answer choice: (always/sometimes/never)

Easily, clients have ab false vision about the boundary to which consultants and contractors will match procurement systems to clients' requirements. Table 2 below indicates that while the majority of clients (67) believe that the procurement team does match their requirements to the applicable procurement system, the procurement platoon does not support the perception himself or herself. The maturity of the structure professionals surveyed easily believed that they did not generally essay to match their guests' requirements to an applicable procurement system. It is possible that they did not see any need to do so, given the inviting frequency of the traditional systems.

	% of respondents groups						
	All	Clients	Architects	Quantity surveyors	Engineers	Project managers	Contractors
	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Extent of the match	43	67	48	43	37	44	25

TABLE V: PERCEPTIONS OF THE EXTENT TO WHICH THE PROCUREMENT TEAM ALWAYS AND SOMETIMES ATTEMPT TO MATCH CLIENT NEEDS WITH THE CHARACTERISTICS OF DIFFERENT PROCUREMENT SYSTEMS DURING THE ELECTION OF A PROCUREMENT SYSTEM

INFERENCE FROM THE RESULTS

The results gathered from the management of the questionnaire showed that the respondents considered the planning and scheduling errors of the construction team as a major factor influencing the time (duration). Defendants contended that inefficient planning and scheduling for construction work would adversely affect construction time at a much later stage. Other factors are considered to be very important, when there is a shortage of manpower, i.e. a shortage of manpower required, the project will need more time to complete as the work will not proceed as planned. The design change in the rankings due to labor shortage is another factor.

When it comes to cost factors, fraudulent behavior and kickbacks are a major factor. Fraud is a major problem in the economy today and the impact of contractors and customer representatives exaggerating contract statistics or defrauding the customer, especially in government contracting (conducting through interviews) can also be seen in the construction industry. Work together to give. Another factor in the rankings after fraudulent practices and kickbacks is poor contract management; Research shows that lack of material is the least of the factors affecting cost.

In terms of quality, the lack of a clear uniform evaluation standard is considered to be a major factor influencing quality management in construction. From the interviews conducted, the respondents emphasized that the quality issue depends on the circumstances of the particular project. Defendant further emphasized that it is very difficult to establish quality standards, so that quality in construction is often a subjective concept like beauty in the eyes of the beholder, and the unpredictable geographical situation seems insignificant. This is because it rarely happens in most site operations.

V CONCLUSIONS

This research reports the results of the South Africa National Questionnaire Survey of Participants in the RAI Project Team on the relationship between time, cost and quality management and the achievement of customer goals.

The opinions of clients, contractors and consultants may not be consistent with the timing, cost and quality of client estimates at the start of the project. Clients believe their time, cost and quality estimates are realistic, but contractors and consultants generally do not believe so. Clients see project quality as more important than project time performance, while contractors and consultants believe clients actually take the opposite view.

Contractors and clients place great confidence in design-time performance and build collection systems but have little confidence in traditional and maintenance-based collection systems. It has been proven that there is a low level of confidence regarding the cost performance of projects under all different collection systems.

Clients believe that changes sometimes only take place after the project has started. The actual abbreviation differs between the perceptions of the clients and other members of the project collection team. All members of the project procurement team demonstrated little confidence in the client's ability to know what they wanted in the project.

Clients, contractors and building professionals agree that building procurement system selection has little effect on the level of post-contract cost variability. Clients believe they have the resources to monitor and control project costs. Contractors and construction professionals cannot believe that.

Client-inspired changes can be seen by contractors and construction professionals, who greatly contribute to the over-runs of project time. Quantity surveyors see the potential for efficient time management during the construction phase of the project delivery process, while project managers believe that the briefing phase provides the highest efficiency for efficient time management.

The traditional building system provides the highest level of customer satisfaction in terms of time, cost and quality management on construction projects. Found a high level of satisfaction for time management. Customers are more

likely to be dissatisfied with project quality management under design and construction and maintenance-based collection systems.

The purpose of the research is to identify the 'human' factor, i.e., the understanding of time, cost and quality management within the project team, and to explore the proposition that TCQ management's attempts to address perceived shortcomings will be facilitated. The results of this survey suggest that there are misconceptions among project team members about time, cost and quality management of construction projects and the potential impact on the project team's ability to achieve client goals. Is. While the results of the research do not guarantee any change in behavior at this stage, the research has helped to better understand the complexities of the 'human' problems inherent in managing time, cost and quality. Most importantly, it paves the way for further research on the 'human' aspect of how to manage project teams more effectively to achieve client goals, thereby leading to behavioral change. The trigger can be provided.

Due to the lack of knowledge and understanding among the people, the risk management method is less implemented. The track record in managing risks in projects is also short, as a result of which it affects the objectives of the project. This paper shows a detailed review of the risk management process (analysis, identification and response) of the published literature. It focuses mainly on the development of the accident process, especially in developing countries of the world. Different contributions to the research of different methods are also discussed.

In previous studies, different sources of structural risk have been identified. Various approaches to classifying risk have been recommended in the literature. Management can better understand the nature of risks by classifying the risks. There are different ways to classify risk to achieve different goals. For some, in construction projects, the risk can be classified as external hazards and internal hazards, while others categorize the hazard into more broad categories. These categories depend on the project status and the surrounding environment. All evaluation methods are important for decision making, and all decision-making suggests that the risks of alternatives must be taken into account. Some methods measure risk better or more specifically than others, but all have one thing in common: they require a high level of experience, time resources, and detailed data from the medium. . Although quantitative approach uses more resources than qualitative approach, they are also very complex. This research reviews the actual practice of risk analysis published in the literature. Research suggests a heavy reliance on practical experience and professional judgment when assessing structural risk.

Unfortunately, there is still a wide gap between theory and practice. However, part of existing knowledge forms a strong foundation for exploring new alternatives that can bridge the gap between theory and practice.

It is impossible to capture the management team's experience in risk categories, interdependence between risks, interactions with complex project environments, and improvement proposals.

Although project management literature abounds with papers indicating risk management, some papers explore the actual practice of risk assessment and examine learners' attitudes toward available tools. The review concludes that there is no comprehensive risk assessment framework literature that simultaneously considers the effects of different types of risks on different project objectives. Such a framework is crucial to achieving a realistic risk assessment, which is the first approach to achieving a realistic project risk level.

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