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DETERMINANTS OF TIMELY COMPLETION OF CONSTRUCTION PROJECTS IN SELECTED CONSTRUCTION INVESTMENT COMPANIES IN NAIROBI COUNTY

Emmah Nyakerario Nyamamba[1], Dr Jane Omwenga[2]

[1,2]jomo Kenyatta University of Agriculture and Technology,Nairobi, Kenya

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Abstract: **The aim of the study was to analyze the determinants of timely completion of construction projects in selected investment companies in Nairobi County. The study sought to achieve the following objectives; To determine the influence of human resource on timely completion of construction projects in investment companies in Nairobi County, to investigate the influence of project financing on timely completion of construction projects investment companies in Nairobi County, to examine the influence of project planning on timely completion construction projects in investment companies in Nairobi County and to explore the influence of supervision of work on timely completion of construction project in investment companies in Nairobi County. It was anchored on top management theory and resource dependency theory. This study used descriptive survey methodology. The population of the study comprised of all the 60 employees working in project departments from the 10 selected investment companies in Nairobi County. Primary data was used, where the questionnaires were administered to the respondents through the drop and the pick method and once collected the data was analyzed using both descriptive and inferential statistics and Microsoft Excel to calculate the frequency percentages, mean score as a measure of central tendency and standard deviation as a measure of data dispersion. Statistical Package for Social Science (SPSS) version 26 was used to perform correlation analysis to establish the degree of relationship between respondents' opinion on the four research objectives and the implementation of education projects. The study established that there was a relationship between human resource management and timely completion of the construction projects. Qualified and skilled staff has been cited as the main aspect of human resource that is highly needed in this industry's success. The study revealed that finances play a greater role on the project timely performance since when finances are available; nothing can stop the process when it has taken off. Proper financing from ready local banks will help in the faster undertakings even in mega projects After evaluating the responses, it is easily to conclude that there is a relationship between project planning and timely completion of construction projects. Failure to plan is planning to fail. Both human resource and financial should be properly and adequately utilized for the success of the projects. Similar studies should be conducted on other organizations or different geographical areas such as Turkana County to ascertain the sustainability of such results of this study on the determinants of timely completion of construction projects in investment companies in Nairobi County.**

Keywords: **human resource, project financing, project planning, supervision of work, timely completion of construction projects.**

1. INTRODUCTION

1.1 Background of the Study

Human civilization since time immemorial has been characterized by various types of projects to deliver change or benefit to societies (Odoyo, 2013). These include the projects such as Voyages of Discovery of Henry the Navigator, the Great Pyramids of Egypt, the ancient Roman roads, the Grand Canal of China, the Dykes of Holland and the Atomic bomb among others. Since 1950s the development agenda has been characterized by projects and programs aimed at improving

the quality of life of beneficiary communities, be it in physical or qualitative terms (Chikati, 2009). The completion of projects in a timely manner is often a critical factor and measure of project success. In recent years, there has been an increasing interest in the use of projects as building blocks in the strategic management of organizations (Magambo, & Omwenga, 2015). The success of any project is highly dependent on its completion time from start to delivery of results. This has a direct bearing on management decisions such as budgets, targets and standards (Seddon, 2008). Construction project delivery is affected by many factors. Every investor wants to be sure of the project time and cost. This is because challenges that may affect project completion have far reaching effects ultimately on the owners' interest.

According to Macharia and Ngugi (2014), to increase the chances of a project succeeding it is necessary for the organization to: (i) have an understanding of what are the critical success factors or in other words what are the factors that are critical in determining the success of a project, (ii) systematically and quantitatively assess these critical success factors, anticipating possible effects, and then choose appropriate methods of dealing with them. Gaturu and Muturi (2014) indicated that the completion of projects in a timely manner is often a critical factor and measure of project success and the success of any project is highly dependent on its completion time from start to delivery of results

1.1.1 Global perspective

Chism and Armstrong (2010) in study carried in USA aver that in the current economic landscape, project owners are scaling down or eliminating capital construction projects due to lack of financing, uncertainty over costs, and concerns about potential delays that could impact the feasibility basis of projects. While in a study carried out in the UK Fapohunda and Stephenson (2010) state that in construction, conflicts exists between the projects' stated objectives with regard to the appropriateness of cost time and quality. They also identify the distinct knowledge management areas for project managers' efficient performance to include among others project time management which includes to provide an effective project schedule for project delivery besides actually delivering on the schedule. McNair (2011) referring to the Australian context of applying EPC contract advances the importance of a contractor delivering a complete facility for a guaranteed price and by a guaranteed date. It must also perform to the specified level. He further observes that failure to achieve this will usually result to a contractor incurring monetary liabilities(Njau, & Omwenga, 2019)..

Many studies have been conducted to identify the causes of delay in construction projects. In a survey of the West Bank in Palestine, Mahamid (2011) indicated that the most severe factors affecting time delay in road construction projects from the owners' perspective are: poor communication between construction parties, poor resource management, delays in commencement, insufficient inspectors, and rework. Similarly, Al-Najjar (2008) concluded that the most important factors causing time overruns in building construction projects in the Gaza Strip as perceived by contractors were: strikes, Israeli attacks and border closures, lack of materials in the markets, shortage of construction materials at site, delays of material deliveries to site, cash shortages during construction, poor site management, poor economic conditions (currency, inflation rate, etc), shortage of equipment and tools on site, and owner delay in freeing the contractors payments for completed work.

Examining the factors that cause delay in construction projects in Malaysia, Alghbari et al. (2007) tested 31 variables. The main finding of the study was that financial factors are the most common cause of delays in construction projects in Malaysia. Coordination problems are considered the second most important factor causing delays, followed by materials problems. Also in Malaysia, Sambasivan and Soon (2007) concluded that the ten most important causes of delays the construction industry were: contractor's improper planning, contractor's poor site management, inadequate contractor experience, inadequate client's finance and payments for completed work, problems with subcontractors, shortage in material, labor shortages, equipment availability and failure, lack of communication between parties, and mistakes during the construction stage. Faridi and El-Sayegh (2006) reported that shortage of skills of manpower, poor supervision and poor site management, unsuitable leadership; shortage and breakdown of equipment among others contribute to construction delays in the United Arab Emirates. In Africa, the challenge of timely project delivery can take multiple dimensions depending on the project's environment. In Ghana, Frimpong et al., (2003) identified five factors as the major causes of delays to projects. These include monthly payment difficulties to contractors, poor contract management, material procurement difficulties, poor technical performance and material price escalations. Poor professional management, fluctuation of prices, rising cost of materials and poor site management have also been identified as factors causing a delay in project completion time. Hanson et al. (2003) examined causes of client dissatisfaction in the South African building industry and found that conflict, poor workmanship and incompetence of contractors to be among the factors which would negatively impact on project performance. Mbachu and Nkando (2007) established that quality and attitude to service is one of the key factors constraining successful project delivery in South Africa. The performance of

contractors in Zambia is apparently below expectation; it is not uncommon to learn of local projects that have not been completed or significantly delayed. This poor performance of many local contractors has huge implications in terms of their competitiveness (Zulu &Chileshe 2008).

1.1.2 Local perspective

Kenya like other developing countries has had its fair share of delayed projects. Examples of such are the road construction projects financed by the World Bank that were not completed on time. The delays negatively impacted on both the social and economic benefits that would have accrued if the projects were completed on time (Ngesa, 2012). The Rural Access Road project delayed for 3.5 years. The objective of this project was to develop farm to market center access. The aim was to increase the growth rate of agriculture production in the affected districts, which would in turn improve the livelihoods of the people, provide access to critical facilities like health and education centers. According to the Project Completion Report, other than the delayed completion, only 56 percent of the construction target was achieved. This therefore means, the districts were deprived of the expected benefits that they would have enjoyed had the project been completed according to schedule. According to Faridi et al. (2006), delay is considered one of the most frequent problems in the construction industry and these delays have an adverse impact on project completion in terms of time, cost, quality and safety. Factors contributing to these delays

have be identified as inadequate readiness for implementation causing delays in procurement of contractors, loan conditions affecting late release of funds, poor performance of contractors, low capacity of the implementing agencies, poor supervision of works and contract management in responding quickly in resolving contractual issues when they arise.

1.2 Statement of the Problem

The development agenda has been characterized by projects and programs aimed at improving the quality of life of beneficiary communities, be it in physical or qualitative terms, since the 1950s (Chikati, 2009). Projects of antiquity have left their mark on society and contributed to positive changes that benefit society in general and improved living conditions for many people (Cleland and Ireland, 2007). Historically, many projects have failed to achieve their intended goals (Bishop, 2001). This has been either due to prolonged delay and hence completion far too late than intended or by total stagnation and eventual collapse. Projects are often initiated in the context of a turbulent, unpredictable and dynamic environment (Jeffrey and Dennis, 1987). Many projects, therefore, are usually bedeviled by challenges, constraints and risks as they are extended through completion. Consequently, despite the significant input of human and financial resources, many fall short of expectation. Many failed to meet the priority needs of target beneficiaries, costs escalated, stated outputs were not achieved or if achieved were not sustained, implementation dates slipped by or adverse outcomes were not anticipated (Amollo, & Omwenga, 2017).

A project delay occurs when the actual project duration is longer than the planned duration. A delay is a situation whereby an act or event that extents the time required to perform the tasks under the contract Sambasivan (2007). It is the postponement of time from the original estimated completion time which might be caused by the contractor, owner or consultant as well as external factors Koushki and Kartam (2004). The major impact of delays is increase in project cost, which causes the drain in project contingency fund. Chism and Armstrong (2010) state that in construction time is money. If the contractor exhausts the contingency and is unable to make profit in the project, he may abandon the project and allow the client to attach the performance security. This will in turn cause major losses in multiple fronts from the client. This scenario will include uncontrollable other variations, disputes, bludgeoning project budget claims and often a painful end to the client whose dream may end up in abandonment.

The need for successful implementation arises from the desire for the project to start serving its intended use and thus recouping the investment ploughed in. in the event that this is not realised, various outcomes play into such a reality. For instance cost of implementation will escalate and capital will remain tied in such a project unutilised until it is completed. Project sponsors claim it will be a conservative estimate to state that approximately 50% of construction projects experience time overruns and approximately 63% of all information systems encounter substantial budget overruns with the value of overruns “typically between 40-200%.” Most projects are eventually completed more or less to specification, although they are seldom on time and within budget (Ngelu, Omwenga, Mungatu, & Iravo, 2017).). Thus clearly there are factors which play into account to affect completion of construction projects. This is because it is a global phenomenon that construction projects have not enjoyed a smooth implementation all the way to completion. On the contrary many projects have been affected by various challenges greatly affecting their completion. It is a major concern for every

stakeholder in a project to understand these factors. This research study therefore looks at the determinants of timely completion of construction construction projects in investment companies in Nairobi.

1.3 Objectives of the study

The study was guided by the following objective

1.3.1General Objectives of the study

The general objective of the study was to investigate the determinants of timely completion of construction projects in investment companies in Nairobi County.

1.3.2 Specific Objectives of the study

The specific objectives of the study were;

1. To determine the influence of human resource on timely completion of construction projects in investment companies in Nairobi County.
2. To investigate the influence of project financing on timely completion of construction projects investment companies in Nairobi County.
3. To examine the influence of project planning on timely completion construction projects in investment companies in Nairobi County.
4. To explore the influence of supervision of work on timely completion of construction project in investment companies in Nairobi County.

1.4 Research Questions of the study

1. What is the influence of human resource management on timely completion of construction projects in investment companies in Nairobi County?
2. To what extent project financing influence timely completion of construction projects in investment companies in Nairobi county?
3. How does planning influence completion of construction projects in investment companies in Nairobi County?
4. Is there any influence of supervision of work on timely completion of construction projects in investment companies?

1.5 Scope of the Study

The study looked at the determinants of timely completion of projects in investment companies in Kenya. The study focused on ten major investment companies in Nairobi County. The study is intended to use primary data where questionnaires will be used. The main respondents will be project managers and supervisors. It will be carried out between April and May 2020

2. LITERATURE REVIEW

2.1 Theoretical framework

The study will be anchored on the following theories; top management theory and resource dependency theory.

2.1.1 Top Management Theory

According to Nyandika & Ngugi, (2014), top management team theory (TMTT) has raised widespread concern in the academic community. Different from traditional strategic management theory, which emphasizes on purely economic and technological processes or information process, TMTT studies the strategic choice and organizational performance determinants from the process of cognitive psychology of top management team (TMT), which returns the economic man hypothesis in traditional theory and proposes the hypothesis oflimited rationality proposed by the Carnegie school (Müller & Jugdev, 2012). As the cognitive psychological process of TMT is too complicated, TMTT invokes prior marketing research on demography to suggest that managerial characteristics and its heterogeneity (such as age, work experience, educational background, etc.) are reasonable proxies for underlying differences in cognitions, values, and perceptions process, which could be good predictor to predict organizational outcome (such as strategic choice, organizational performance, etc.), (Nyandika& Ngugi, (2014)).

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2.1.2 Resource Dependency Theory

Resource dependence was proposed by Pfeiffer (1981) it suggests that power accrues to those who control resources needed by the organization, thereby creating power differentials among parties (Pfeiffer 1981, 1997b), and it confirms that the possession of resource power makes stakeholder important to a firm. Legitimacy is achieved if patterns of organizational practice are in congruence with the wider social system (Scott 1987; Powell and DiMaggio 1991).Thus, organizations response to their stakeholders requires an analysis of the complex array of multiple, interdependent relationships existing within the stakeholder environment. The conceptual competition within stakeholder theory, between legitimacy and power, is reflected in virtually every major theory of the firm particularly in agency, behavioral, institutional, population ecology, resource dependence and transaction cost theories (Argenti and Campbell 1997).

According to Nyandika & Ngugi (2014), resource dependence theory (RDT) is concerned withhow organizational behaviour is affected by external resources the organization utilizes, such asraw materials. The theory is important because an organization‘s ability to gather, alter and exploit raw materials faster than competitors can be fundamental to success. Some commentators encourage organizations to view customers as a resource predisposed to scarcity. Resource dependence theory is underpinned by the idea that resources are key to organizational success and that access and control over resources is a basis of power.

2.2 Conceptual Framework

Kariungi (2014) defines conceptual framework as a detailed mental formulation of ideas that give direction to a study. It enables the interaction between and independent variables to be portrayed (Kothari, 2004). According to Mugenda (2008), conceptual framework is concise description of the phenomena under study accompanied by a graphical or visual depiction of the major variables of the study. Macharia and Ngugi (2014) defines conceptual framework as diagrammatical representation that shows the relationship between dependent variables and independent variables as shown in figure 2.1 below

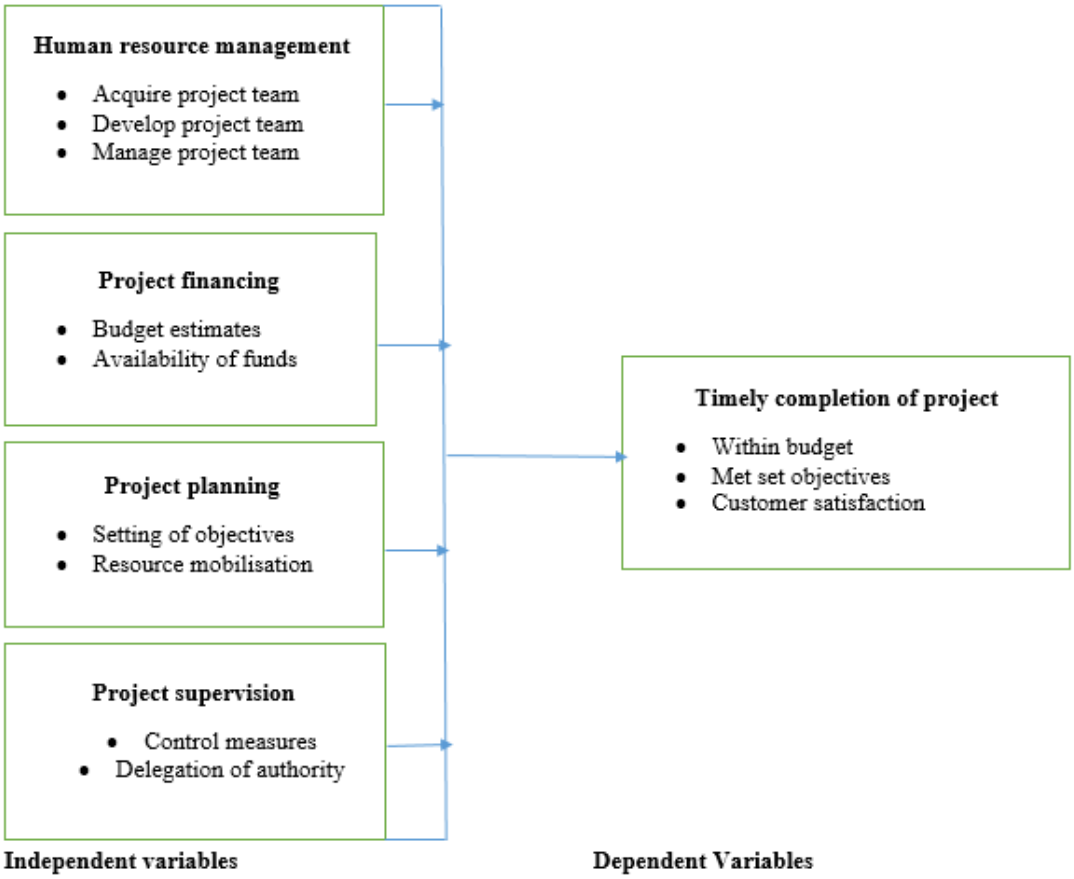

Figure 2.1 Conceptual Framework

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3. METHODOLOGY

3.1 Research design

This study used cross-sectional research design. According to Orodho (2002), cross-sectional research design is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals. It can be used when collecting information about people's attitudes, opinions, habits or any of the variety of education or social issues (Kombo and Tromp, 2001).

3.2 Population of the Study

The study censuses all the staff working in project department from all the selected top ten construction investment companies in Nairobi County. The study targeted project managers, project supervisors and junior project staff as shown in table 3.1 below. The research selected ten investment companies as they been consistent in the market for the last ten years. There are a total of 120 employees working in project departments.

Table 3.1 population size

Category	Number of employees
Project managers	10
Project supervisors	20
Junior staff	90
Total	120

3.3 Data Collection Instrument

This study used questionnaires, to collect data. According to Kasomo (2007) respondents in a questionnaire have enough time to reflect on before answering questions and since respondents don't indicate their names they tend to give honest answers.This also concurs with Jwan (2010) suggestion that questionnaires is preferable since they are more efficient, upholds confidentiality, requires less time and are less expensive to use. The questionnaire had both open and closed-ended questions which were self-administered; dropped and picked from the sampled respondents. The closed ended questions provided a more structured response to facilitate tangible recommendations, while the open ended questions provided additional information that would not have been captured in the close-ended questions. The researcher made follow-ups to ensure the questionnaires are accurately filled and returned on time.

3.4 Data Collection Procedure

Questionnaires were distributed to the respondents through drop and pick. This method is preferred because it easy and cheap to collect data.

3.5 Pilot Testing

A pilot test is a test research project as it authenticates the research tools to be used and it increases the level of accuracy of the data collected. It provides the research with an opportunity to rectify questions that might be misinterpreted or may not be necessary or those that maybe contradictory with the objectives of the research being undertaken. The pilot group was based on 10% of the target population. The pilot data was not to be included in the actual study (Mugo, 2016). A pilot test was carried out for the following reasons: to detect possible flaws in the measurement procedures, to observe aspects such as ambiguous instructions or inadequate time limits; to identify unclear or ambiguously formulated items; to notice non-verbal behavior on the part of respondents (Welman, Kruger & Mitchell, 2008). Similarly, pilot testing was done to assist in determining if there were flaws, limitations, or other weakness within the interview design. This will provide the researcher with an opportunity to make changes where necessary.

3.5.1 Validity of the Research Instruments

Validity refers to the extent to which the measures used in the questionnaire are truthfully measuring the intended concept and not something else and include internal validity and external validity (Sekaran & Bougie, 2009). Validity is also concerned with the integrity of the conclusions that are generated from a piece of the research. According to Mugenda (2009), validity is a measure of the degree to which a research instrument would yield the same results after repeated trials.

3.5.2 Reliability of Research Instruments

Reliability of an instrument is a measure of how consistent the results of a test are (Kombo & Tromp, 2006; Sekaran & Bougie, 2008). In this study, the reliability was carried out by pilot test and computed Cronbach's Alpha. According Sekaran and Bougie (2008) pilot test was necessary for testing the reliability of instruments where the feedback of the pilot study refined the questionnaire to make it reliable during the study. Cronbach's alpha was used to test the reliability of the measures of the instruments. In addition Bryman (2011) suggests that where Cronbach Alpha is used for reliability test, a rule of thumb will also be used that states that the Cronbach values of the items in the study should not be lower than 0.7.

3.6 Data analysis

The data will be analyzed using both qualitative and quantitative methods of analysis. The quantitative data was analyzed using descriptive statistics where the responses from the questionnaires was tallied, tabulated and analyzed using percentages, frequencies and weighted mean using Statistical Package for Social Sciences (SPSS) which according to Martin & Acuna (2002), is able to handle large of amounts of data and is efficient because of its wide spectrum of statistical procedures purposively designed for social sciences.

3.7 Model specification

Data analysis is an examination of what have been collected and making deductions and inferences, (Kothari, 2005). Data in this study was analyzed quantitatively. By use of computer software the data on questionnaire was fed into the computer and analyzed using Statistical Package for Social Sciences software (SPSS version 26.0) and then summarized and presented in form of tables, bars, charts, graphs and percentage. Regression analysis was done to get the following regression analysis model:

$$\mathbf{Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon}$$

Where:

Y – Timely Completion of investment projects.

α – Constant

B_i–the coefficient of X_i (i=1, 2, 3)

X_1 – coefficient of human resource management.

X_2– coefficient of project financing.

X_3– project planning.

X_4 – coefficient of project supervision.

ε – Error term

4. RESULTS AND DISCUSSIONS

4.1 Response rate

The researcher issued questionnaires to a total of 120 respondents. However, only 110 questionnaires were returned back to the researcher correctly filled that represent 92% of the whole respondents. A response rate of above 50% contributes towards the gathering of sufficient data that could be generalized to represent the opinions of respondents about the study problem (Orodho, 2009).

The study requested the respondents to indicate their gender. Of all the respondents who turned in the filled questionnaires, 73% of the respondents were male and the rest were female (27%). This shows that the construction industry is dominated by male as most work is physically done and attributed to the men's masculinity.

4.2 Human Resource Management

The rating scale indicates agreement levels as follows: 1- Strongly Agree, 2 – Agree, 3- Neither Agree nor Disagree, 4 – Disagree, 5 – Strongly Disagree.

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Table 4.1 Level of agreement with the statements relating to the human resource management as an indicator of timely completion of construction projects

	HUMAN RESOURCE INDICATORS	1	2	3	4	5
1	Staff managing construction projects have the necessary qualifications	21	61	2	8	4
2	Staff managing construction projects are trained regularly on project management concepts	34	53	4	7	2
3	Staff managing construction projects have enough experience to enhance project delivery on time	19	42	20	13	6
4	Staff managing construction projects have enough professional competence required for the job	8	40	19	26	6
5	Staff managing construction projects have enough skills required for the job	23	66	2	6	3

The study sought to find out the effect of human resource management to the timely completion of the construction projects. The study enquired from the respondents if the staff managing the construction projects have the necessary qualifications. 21% of the respondents strongly agreed with the statement together with the majority who agreed at 61%. This is a clear indication that the majority of the management employees here have both the experience and technical knowhow on the requisites of both the projects and workforce management. A partly 14% were either undecided or did not support this statement as shown below

On the level of agreement with statements relating to staff managing construction projects being trained regularly on project management concepts, above 85% concurred, 4% were undecided while 9% expressed their displeasure with the statement. Training of management staff on a regular basis is necessary in this industry is dynamic with new regulations are formulated day-in day-out. The environment is also changing and hence the projects must meet the requirement of these changes.

The study also sought to find out if the staff managing construction projects have enough experience to enhance project delivery on time. It was revealed that majority of the staff had been in the construction industry and especially with their respective companies for some time, majority more than 2 years hence have the experience of the dynamics of the industry thus are able to deliver the projects on time. 19% of the respondents strongly agreed, 42% of the respondents agreed, 20% of the respondents were undecided, 13% disagreeing as only 6% strongly disagreeing.

This study also sought to know from the respondents if staffs tasked with managing construction projects have had enough professional competencies required for the job. More than 50% of the respondents concurred that the staff are highly qualified, trained and certified to participate in undertaking such projects. However, 25% responded that they were unsure if the management of such project were professionally qualified since the experienced are also capable of handling such projects. 20% of the respondents disagreed with the statement.

The study sought to confirm from the respondent if staff managing construction projects have enough skills required for the job, majority (89%) of the respondents strongly concurred that skills are a must have to venture into the projects. Less than 11% were on the contrary that skill is not a requisite.

4.3 Project Financing

The rating scale indicates agreement levels as follows: 1- Strongly Agree, 2 – Agree, 3- Neither Agree nor Disagree, 4 – Disagree, 5 – Strongly Disagree

Table 4.2 level of agreement with the statements relating to project financing as an indicator of timely completion of construction projects

	Project financing indicators	1	2	3	4	5
1	There are readily available sources of Funding the projects in the organization	17	55	20	5	3
2	There is Financial Management System in place to minimize mismanagement of funds	8	23	39	18	12
3	There is Good leadership with Integrity in the organization	21	36	14	21	8
4	Effective Capacity of systems and structures to handle funds	11	29	25	19	16
5	Staff handling finances have high academic qualification and experience	27	47	11	10	5

This study sought to find out from the respondents if there are available sources of funding the projects in the organization. Majority of the respondents at 72% agreed that funding is readily available from the local financial institutions. 20% of the respondents were unsure while less than 10% disagreed that the funding is not easy to come by as there are bottlenecks from the financing institutions.

The study further sought to find out if there is Financial Management System in place to minimize mismanagement of funds. 69% of the respondents were either undecided on this concept or were in disagreement as this was an area reserved to the top management of the organization they worked for. The over 30% of the remaining respondents who agreed to the statement either were in the top management or served in the finance department of the companies as summarized

The study also sought to find out if there is good leadership with integrity in the organization that enhances the completion of the projects where over 55% of the respondents agreed that they have seen good leadership on the management of the finances. 14% were undecided on this issue and less than 29% disagreed that there was no good leadership as some projects are left uncompleted or fail.

From the result of the study, there was a mixed reaction on the issue that the study sought to find out on effective capacity of systems and structures to handle funds. This was attributed to the fact that the establishment was a reserve of the top management. 11% strongly agreed, 29% agreed, 25% of the respondents were undecided, 19% did not agree while 16% strongly disagreed

4.4 Project Planning

The rating scale indicates agreement levels as follows: 1- Strongly Agree, 2 – Agree, 3- Neither Agree nor Disagree, 4 – Disagree, 5 – Strongly Disagree.

Table 4.3 level of agreement with the statements relating to project planning as an indicator of timely completion of construction projects

	Project planning indicators	**1**	**2**	**3**	**4**	**5**
1	Contractor's planning experience influences the rate of projects completion	32	48	6	11	3
2	Pre-Planning of the roads projects n very poor	15	37	10	27	11
3	Project Schedule planning has not been achieved due to poor coordination	13	29	18	24	16
4	Construction authority has compromised plans due to external interferences	23	41	19	13	4
5	lack of proper planning has influenced the rate at which projects are completed	19	33	11	29	8

This study sought to find out the effect of project planning as indicators of timely completion of the construction projects. On the issue of contractor's planning experience influencing the rate of projects completion, over 80% of the respondents agreed, 6% were undecided while less than 15% were on the contrary as represented

The study sought to determine from the respondents if Pre-Planning of the roads projects is very poor. The study returned a mixed reaction as there was slightly under 50% of the respondents who disagreed sited that the failed or poor roads done is as a result of a failed pre-planning on the side of the management of the projects. Only 52% concurred with the statement sited that the success story in the road construction industry.

The study also sought to find from the respondents if Project Schedule planning has not been achieved due to poor coordination. Majority of the respondents were neither unsure (18%) or agreed (42%) with the statement. Another 40% disagreed with the statement stating that the organization had developed the project schedule and have put systems in place to achieve them.

The study further sought to find out if construction authority has compromised plans due to external interferences. A large number of the respondents, 64%, agreed that the sector has strongly been marred with external interference that has seen many projects fail of done shoddily. The authority has always been compromised to approve projects from unlicensed organizations. 19% of the respondents were undecided on this while a partly 17% did not agree with the statement.

On lack of proper planning influencing the rate at which projects are completed, the study found out that the projects have always had a proper planning leading to the success of the construction with over 50% supporting. 11% were undecided as 29% disagreed claiming that financial impropriety has lead to the death of many projects or even over being incomplete

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4.5 Project Supervision

The rating scale indicates agreement levels as follows: 1- Strongly Agree, 2 – Agree, 3- Neither Agree nor Disagree, 4 – Disagree, 5 – Strongly Disagree.

Table 4.4 level of agreement with the statements relating to project supervision as an indicator of timely completion of construction projects

	Project supervision indicators	1	2	3	4	5
1	Independent project supervision is important for project viability	30	41	13	9	5
2	Auditing of ongoing project can assist the supervision systems in bringing more light on the scheduled goals of the project	19	39	14	18	10
3	Frequency of project supervision affects ultimate quality of the projects	27	39	9	17	8
4	Stakeholder involvement in project supervision is key to its success	13	34	19	23	11
5	There is a need to develop performance evaluation targets to guide the process of project supervision	8	23	39	18	12

This study sought to find out from the respondents the influence of project supervision on timely completion of construction projects. The study revealed that independent project supervision is important for the projects to be viable and completed. This reduced bias and chances of risk & shoddy work or uncompleted projects as was supported by 30% who strongly agreed and 41% agreeing. 13% were undecided, 9% disagreed while only 5% strongly disagreed.

The study also sought to know if the auditing of ongoing project could assist the supervision systems in bringing more light on the scheduled goals of the project. The findings were that of the respondents, 19% strongly agreeing, 39% agreeing, 14% undecided, 18% disagreed while a further 10% strongly disagreeing.

The finding of the study on whether the frequency of project supervision affects ultimate quality of the projects was that with frequent and thorough project supervision, all systems are ensured to be in proper place for the achievement of the project goals. Among the respondents, 27% strongly agreed, 39% agreed, 9% were undecided, 17% disagreeing as 8% strongly disagreeing.

The study also sought to find out if stakeholder involvement in project supervision is key to its success. All stakeholders should be involved through all the processes of the project for its viability. 11% of the respondents strongly disagreed with this statement, 23% disagreed, 19% undecided while 34% and 13% agreed and strongly agreed respectively.

Majority of the respondents at 39% were undecided over the issue that the study wanted to find out that there is a need to develop performance evaluation targets to guide the process of project supervision. Another 8% strongly agreed, 23% agreed, 18% disagreeing and 12% strongly disagreeing.

4.6 Timely Completion of Project

The rating scale indicates agreement levels as follows: 1- Strongly Agree, 2 – Agree, 3- Neither Agree nor Disagree, 4 – Disagree, 5 – Strongly Disagree.

Table 4.5 level of agreement with the statements relating to timely completion of construction projects

	PROJECT TIMELY COMPLETION INDICATORS	1	2	3	4	5
1	Projects in my organization are completed within the set budgets.	34	53	4	7	2
2	Projects in your organization meet the specifications.	24	65	2	6	3
3	Projects are done within the pre-set scope.	32	46	8	11	3
4	The organization objectives are met at the end of each project	19	42	20	13	6
5	The customers are satisfied with the projects as their needs are met.	23	41	19	13	4

This study sought to find out if the projects are completed on time considering the available resources. On whether the project are completed within the set budget, many respondents concurred that there has been efficient utilization of the set budget to complete the started projects. Over 85% concurred that the allocation completes the project with less than 15% either undecided or disagreeing as presented

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The study also sought to find out from the respondents if projects completed in their respective organization meet the specifications. Adhering to the set plan enables the final product to meet specification and be economically & structurally viable. This was supported by 85% of the respondents while less than 11% were either undecide3d of disagreed

The findings of the study on if projects are done within the pre-set scope, it was revealed that majority of the projects are done within the set plans thus success in their completion. This was supported by over 78% of the respondents while 22% of the remaining respondents were either undecided or disagreed

The study further sought from the respondents whether the organization objectives are met at the end of each project. There was a mixed reaction from the respondents, however, a good number (61%) still agreed that most of the projects are completed as planned, meaning that their objectives are met. 20% were still undecided as 19% disagreed with the statement as

Finally, the study sought to find out if the respondents agree that the customers are satisfied with the projects as their needs are met. Majority of the respondents at 64% agreed that when the objectives of the organisation are met, then the customers are also satisfied. The minority, at 17%, also claimed that some projects do not meet the pre-stated plan and hence a disappointment to the customers.

4.7 Inferential Statistics

4.7.1 Correlation Analysis

Table 4.6: Correlation Analysis

Variables		Timely completion of construction projects	Human resource	Project financing	Project planning	Supervision of work
Timely completion of construction projects	Pearson Correlation Sig. (2-tailed)	1				
Human resource	Pearson Correlation	0.805	1			
	Sig. (2tailed)	0.000				
Project financing	Pearson Correlation	0.769	0.627	1		
	Sig. (2tailed)	0.003	0.001			
Project planning	Pearson Correlation	0.889	0.528	0.531	1	
	Sig. (2tailed)	0.015	0.011	0.000		
Supervision of work	Pearson Correlation	0.701	0.148	0.325	0.489	1
	Sig. (2tailed)	0.001	0.170	0.005	0.014	

Testing at 5% significant level, two tail tests; the correlation analysis was significant since all the p-values (Sig.) was less than 0.025 ($p<0.025$). The findings further reveal that all the independent variables in the study had strong correlation with the dependent variable since their Pearson values were above 0.7 with project planning being the strongest variable followed by human resource then project financing while supervision of work was the least as indicated in table 4.32.

4.7.2 General Regression Analysis

Table 4.7: Model Summary for All the Variables

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.788[a]	.752	.769	1.743

Independent variables : (Constant), human resource , project financing , project planning and supervision of work

The study found out that the independent variable in the study explained a significant proportion of variance in timely completion of construction projects in investment companies in Nairobi County, R^2= .752 which implies that 75.2% of the proportion in timely completion of construction projects in Kenya can be explained by the independent variables while other variables not covered by this study contributes to 24.8% of the variance as indicated in table 4.33.

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Table 4.8: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	8.654	4	8.654	69.175	.000[b]
1	Residual	4.978	9	.365		
	Total	13.632	13			

a. Dependent Variable: Timely completion of construction projects
b. Independent variables : (Constant), human resource , project financing , project planning , and supervision of work

The findings in table 4.34 indicate that the significance value in testing the reliability of the model for the relationship between independent variables and timely completion of construction projectss was $F(1, 13) = 69.175$, $p = 0.00$; therefore, the model is statistically significant in predicting the relationship between the study variables.

Table 4.9: Regression Coefficients for all the Variable

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	.852	.990	.236	1.256	.000
Human resource	.302	.198	.452	1.443	.000
Project financing	.289	.479	.475	1.387	.001
Project planning	.348	.569	.987	1.546	.000
Supervision of work	.167	.236	.654	1.234	.002

a. Dependent Variable: Timely completion of construction projectss

As shown in table 4.35 and based on the linear regression model,

$Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + u$, the model therefore becomes; $Y = 0.852 + 0.302\ X_1 + 0.289X_2 + 0.348X_3 + 0.167X_4 + u$

Where Y = dependent variable (timely completion of construction projects in investment companies in Nairobi County)

α = constant

$\beta_1, \beta_2, \beta_3$ and β_4 are coefficients of independent variables

X_1, X_2, X_3 and X_4= are independent variables (human resource , project financing , project planning and supervision of work respectively).

Testing at 5% significant level, the regression analysis is significant since all the p-values (Sig. p<0.025) testing at 2 tail test. The findings indicate that holding project financing, project planning and supervision of work constant, every one unit increase in human resource increase timely completion of construction projects in investment companies in Nairobi County by 30.2%. Holding human resource, project planning and supervision of work constant, every one unit increase in project financing increases timely completion of construction projects in investment companies in Nairobi County by 28.9%. Holding human resource , project financing and supervision of work constant, every one unit increase in project planning increases timely completion of construction projects in investment companies in Nairobi County by 34.8% while holding human resource , project planning and project financing constant, every one unit increase in supervision of work increases timely completion of construction projects in investment companies in Nairobi County by 16.7%. From multiple regression analysis, $R^2 = 0.752$ meaning that 75.2% of timely completion of construction projects in investment companies in Nairobi County can be through the discussed determinants and that the high degree means the regression model fits the data very well.

5. SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of Findings

5.1.1 What is the influence of human resource on timely completion of construction projects in investment companies in Nairobi County?

The study sought to answer the question above. 85% of the respondents agreed that staff managing construction projects have the necessary qualifications, 87% of the respondents agreed that staff managing construction projects are trained

regularly on project management concepts, 61% agreed that staff managing construction projects have enough experience to enhance project delivery on time, over 50% neither undecided or disagreeing that staff managing construction projects have enough professional competence required for the job while 89% of the respondents agreed that staff managing construction projects have enough skills required for the job.

5.1.2 What is the influence of Project financing indicators on timely completion of construction projects in investment companies in Nairobi County?

To answer the above questions, the study found that 72% of the respondents agreed with the fact that there are readily available sources of funding the projects in the organization, 39% of the respondents were undecided on whether there is financial management system in place to minimize mismanagement of funds, 57% of the respondents were in support that there is good leadership with integrity in the organization, 25% of the respondents were undecided on whether there are effective capacity of systems and structures to handle funds, while 74% of the respondents were in support that staff handling finances have high academic qualification and experience.

5.1.3 What is the influence of Project planning indicators on timely completion of construction projects in investment companies in Nairobi County?

The study sought to answer the question above. Of the interviewed respondents, 80% concurred that contractor's planning experience influences the rate of projects completion, 52% agreeing that pre-planning of the roads projects is very poor, 58% neither were undecided or disagreed that project schedule planning has not been achieved due to poor coordination, 64% agreeing that construction authority has compromised plans due to external interferences while 42% concurred that lack of proper planning has influenced the rate at which projects are completed.

5.1.4 What is the influence of Project supervision indicators on timely completion of construction projects in investment companies in Nairobi County?

The study sought to answer the question above and the results were as follows: 71% supported the fact that independent project supervision is important for project viability, 58% supported that auditing of ongoing project can assist the supervision systems in bringing more light on the scheduled goals of the project, 66% agreed that frequency of project supervision affects ultimate quality of the projects, 34% agreed that stakeholder involvement in project supervision is key to its success while 34% were undecided whether there is a need to develop performance evaluation targets to guide the process of project supervision or not.

5.1.5 Is there timely completion of construction projects in investment companies in Nairobi County?

The study sought to answer the question above. On the timely completion of the projects within the organization, 87% of the respondents supported that projects in their respective organizations are completed within the set budgets, 89% concurring that projects in your organization meet the specifications while 78% agreed that projects are done within the pre-set scope. 51% accepted the fact that organizational objectives are met at the end of each project as 54% agreeing that the customers are satisfied with the projects as their needs are met.

5.2 Discussions

5.2.1 Human resource management on timely completion of construction projects in investment companies in Nairobi County

The study sought to determine the influence of human resource on the timely completion of the construction projects in investment companies. The study findings shows that knowledge and skills by all the staff are key factors to the timely completion of the project. The study revealed that training of the staff regularly enhances their skills to catch up with the dynamics of the construction industry.

5.2.2 Project financing on timely completion of construction projects in investment companies in Nairobi County

The study sought to determine the influence of project financing on the timely completion of the construction projects in investment companies. The study findings reveal that construction industry has available funding sources for construction project. Most banks are ready to grant loans for the undertaking of these projects. However, proper systems are needed to be in for the management of the budgeted funds as there are qualified staffs who can manage these systems.

5.2.3 Project planning on timely completion of construction projects in investment companies in Nairobi County

The study sought to determine the influence of project financing on the timely completion of the construction projects in investment companies. The study findings revealed that proper planning of both the human resource and financial resource are also the key to timely completion. However, external interference that sip in through the industry regulator, the Construction Authority has been an impediment to the effective and sustainable completion of the projects.

5.2.4 Project supervision on timely completion of construction projects in investment companies in Nairobi County

The study sought to determine the influence of project supervision on the timely completion of the construction projects in investment companies. The study findings found that due to the external bias and the importance of this projects such as housing projects, it is important for the have independent supervisors who cannot be easily influenced to achieve viability. Auditing of the project was also found to be an aspect to keep the project on budget and scope track. These affect the finality of the projects.

5.2.5 Timely completion of construction projects in investment companies in Nairobi County

The study sought to determine if there is timely completion of the construction projects in investment companies. The findings of this study are that when the projects are conducted within the preset budget, scope and specification, then there are high chances that the projects will be highly completed within the stated time. This will enhance customer satisfaction within the industry.

5.3 Conclusion

5.3.1 Human resource management on timely completion of construction projects in investment companies in Nairobi County

The study established that there was a relationship between human resource management and timely completion of the construction projects. Qualified and skilled staff has been cited as the main aspect of human resource that is highly needed in this industry's success.

5.3.2 Project financing on timely completion of construction projects in investment companies in Nairobi County

The study revealed that finances play a greater role on the project timely performance since when finances are available; nothing can stop the process when it has taken off. Proper financing from ready local banks will help in the faster undertakings even in mega projects. Systems that track usage of the finances for a particular projects are also necessary to avoid embezzlement of funds meant for these projects.

5.3.3 Project planning on timely completion of construction projects in investment companies in Nairobi County

After evaluating the responses, it is easily to conclude that there is a relationship between project planning and timely completion of construction projects. Failure to plan is planning to fail. Both human resource and financial should be properly and adequately utilized for the success of the projects. These are the most important factors of the project implementation to achieve the objectives of the organisation.

5.3.4 Project supervision on timely completion of construction projects in investment companies in Nairobi County

The study established that there was a relationship between project supervision and timely completion of the construction projects as there is need for an external big brother to oversee the processes of the projects if they are done within the pre-set specification, scope and budget.

5.3.5 Timely completion of construction projects in investment companies in Nairobi County

The study has established that if there is proper planning of the human resource and the availability of funding within a proper supervisory checks, then there is a possibility of carrying out projects that will be delivered in time.

5.4 Area of Further studies

Similar studies should be conducted on other organizations or different geographical areas such as Turkana County to ascertain the sustainability of such results of this study on the determinants of timely completion of construction projects in investment companies in Nairobi County.

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