Cost-Related Risks and Completion of Commercial Building Construction Projects in Kisumu County, Kenya

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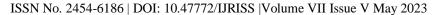
ABSTRACT

For any country to succeed in the 21st century, infrastructure development is critical. Its objective is to create a significant number of employment and accelerate economic growth. Therefore, there is a need for heavy financial investment in projects involved in infrastructure development. However, one needs to consider the waste of resources a country could incur if the project is not managed properly. These losses result from a variety of risks connected to these sorts of development initiatives. These risks have a significant influence. For a project to be completed successfully, it has to be within the schedule and allocated budget. The objective of the study was to determine the influence of cost-related risks on completion of commercial building construction projects in Kisumu County. This research was guided by theory of constraints. The research used a descriptive survey research design. The research was conducted in Kisumu County and the target population constituted of structural engineers, civil engineers, construction project managers, mechanical engineers and electrical engineers making a total of 400 respondents. Yamane formula was applied in determining the sample size which was 234 respondents. Stratified sampling method was applied in selecting a sample size. Questionnaires were used to obtain primary data while contract documents, journals and progress reports from the identified projects were utilized to collect secondary data. With the assistance of a computer software, Statistical package for Social Sciences, descriptive statistics was applied in analyzing quantitative data for statistics. Inferential statistics was done through Pearson Correlation Coefficient and Regression Analysis was utilized. It was established that cost related risks with $r=0.430$, $r^2=0.185$, $\beta=0.004$, $t=7.151$ and the $F_{(1, 173)} = 47.79$ at $p=0.000<0.05$, concluded that the variable had a positive significant completion of commercial building construction projects. The research recommended that there is need to consider cost of the project intensely in the start period to prevent problems that bring construction delays. The research suggested that research should be done on how to create a predictive model for the execution of commercial construction building.

Key Words: Building Construction Projects, Cost-related Risks

INTRODUCTION

The construction industry is fundamental in aiding sustainable growth and development in the world. It is obvious that the construction industry is essential to the economy's sustained expansion and that its operations have a significant impact on almost every element of the economy. Objectives in the construction industry are regularly modelled towards quality, time, and cost. It is therefore advisable that project contractors identify and mitigate probable risks that hinder the attainment of project objectives (Enshassi, Mohamed &Madi, 2017). According to Rahman (2013), fluctuation of cost is a serious predicament in the construction industry in Portugal, where the projects have gone through cost variation of about 40% of the contract duration whereas the average cost fluctuation is registered as 12% of the value of the contract. Similarly, in Malaysia, as indicated by Development Board, (CIDB), the construction sector has a significant contribution of growth to socio-economic development in the country. In the recent past, the

construction industry especially on commercial building in Malaysia has grown rapidly even though the government allocates a lot of funds to the industry, they still experience difficulties in expenditure surpassing the budget, construction deficiencies, and overreliance on foreign workers (Jomo, 2016). The percentage of commercial building construction projects in Africa is generally about 6-9%of the Gross Domestic Product (GDP) as indicate by World Bank (2012). In Nigeria, Aljohani Ahiaga-Dagbui and Moore (2017) found out that the average growth of commercial construction projects is 14% and 18% of the cost respectively. Long term sustainability in the global market and competitiveness in the construction industry has a key effect on economic growth as it is a common problem that affects African countries. (Central Bureau of Statistics ,2020b) (CBS) Report, highlights that Kenya's commercial building construction industry adds around 7% of the country's GDP, which makes it clear that the country has a very well-developed construction sector. By the year 2030 the government targets to convert the country into a middle-income economy through the Kenya vision 2030. Attaining the Kenya vision 2030 heavily relies on the quality of construction projects by reducing construction cost, improving completion time and introducing safety measures during construction. The annual budgetary allocation to the construction projects and its significance to vision 2030 can contribute to cost fluctuation hence underrates the need to investigate cost and time. (Kenya Vision 2030 Report, 2008).

Kisumu which is the 42nd county in Kenya and boasts of being the 3rd largest city in the country, with a population of 1,155,574 (National Census, 2019) has a rising demand for commercial building construction projects. This demand extends in all other sectors including agriculture and fishing, farming, manufacturing, transportation and services. (Central bureau of statistics, 2020b) states that the percentage contribution of building construction project in Kisumu county to the GDP is low 13.6% compared to other sectors such as agriculture at 23.7%. Also, the statistics indicates that there is a steady increment in the percentage contribution of commercial building construction projects in Kisumu County which was at 9% in the year 2001 and to a peak of 20% in 2019. This demand is also highly attributed by the rise in rural urban migration, Investment opportunities and the urge to do business in the city. The main purpose of project management in commercial building construction projects is to ensure that projects are done within schedule, cost and other project objectives are achieved (Brunes& Lind, 2016). Unfortunately, risks are inherent parts of most projects in the construction industry despite the tremendous knowledge in project management. Time and cost overrun are related with nearly all projects and a very frequent phenomenon in the commercial building construction Projects. Projects that face time delay and cost overruns may exceed 100% of the estimated cost of the project in emerging economies. (Kaming, Olomolaiye, Holt & Harris, 2017). Given the critical role of infrastructure in ensuring a sustained growth trajectory for the Kenyan economy, we must identify the risk factors which influence the completion of infrastructure projects in Kisumu county within time, budgets and come up with initiatives that need to be acted upon in short term as well as long term.

Statement of the Problem

Building construction projects have a major influence on the input and output of other sectors, which are important parts of a countries' economic growth. From 2000 to 2009, construction investment in Kisumu County especially on commercial construction projects were at 5 % of the country's (GDP) and from 2010 to 2013 this rose to 9 % of the country's GDP. From 2014 to 2017, this sector grew further to 16%. In Kenya, with Kisumu County being a key contributor of the construction industry it is estimated to grow faster in the next 5 years with a compounding annual growth rate (CAGR) of 10%, from 2018 to 2022 as per the Global Data. Three key elements—which together make up the foundation for effective construction project management—include; quality, time, and cost, according to Ewelina& Mikaela, (2018). Cost and time are the lifelines of any and every project. The failure or success of commercial construction projects in Kisumu County depends largely on these two factors apart from its quality. They are vital, yet neglected. The findings from previous studies indicate that risks have been major challenge of numerous projects

around the world. The studies here established the severity of this problem in developing countries, Kenya included. Some of the major occurrences in Kisumu County that impact the objectives of a project in the construction industry are risks and uncertainties than any other sector of the economy in the region. (Project Management Institute, 2014). The risks could be due to natural behaviour of the construction sector which include tight scheduling, huge complexities, immense size and volume of the projects, dynamic in nature and project environment vulnerabilities, changes in government structures and political instabilities. The project's risk could impact every activity of the project in the county to a point where these risks might hinder the project from meeting its main objectives.

In this study, the researcher intended to determine the Project Risk influencing the completion of commercial building construction projects and the impact this has on stakeholders in the construction industry in Kisumu County. According to Atkinson, (2017), risk in commercial building construction projects cannot be done away with, however, this can be identified, retained, minimized, or transferred. Conversely, the construction industry in Kisumu County has a poor reputation for handling risk hence most projects are not completed within schedule.

Objectives of the Study

The objective of the research was to establish the influence of cost-related risks on completion of commercial building construction projects in Kisumu County, Kenya.

Research Hypothesis

The following Null hypothesis was tested:

H_0: Cost-related risk has no significant influence on completion of commercial building construction projects in Kisumu County

LITERATURE REVIEW

Cost- related Risks

The cost of construction projects is referred to as the direct and indirect cost needed to complete a project or work items. These are estimated expenditures and monetary obligations incurred or estimated to be incurred to complete a project. Cost changes involve unexpected cost variations above or below budget amounts because of different aspects. This has been a regular occurrence in building construction projects and an issue of contention among shareholders. Determining the major factors of cost changes and enhancing mitigation measures has been the subject of discussion in the Construction Project Management profession (Kerzner, 2015). Successful projects have the following factors; well-defined goals and objectives, clear project management processes, a specified set of tools in project management, and a proper knowledge of project management roles. For a project to be termed as fruitful, it has need to be implemented as per the plan, within the set budget and the defined objectives. (Mbaluku & Bwisa, 2018).

The construction industry faces a big challenge in controlling the cost of all commercial construction projects coupled with tight monetary supply. To maximize performance despite the overruns, economies in the world have prepared their participants in various industries to take up challenges and make sure there is proficient use of available materials (Sovacool et al, 2017). The overall cost of construction undertaking in normal circumstances is expected to be: site overheads, material, labor, and equipment. Besides, projects around the world incur other costs that result in poor cost estimates which translates to poor cost control henceforth poor cost performance of projects. Some of the cost-related risks identified in Kenya are inadequate supply of equipment, poor financing methods and payments of contractors, mismanagement of

contractual agreement, fraudulent activities and corruption, and material cost fluctuation. (Murimi, 2016).

Further studies by Mbaluku & Bwisa, (2018) regarding the effect of cost and its factors on the completion of commercial building construction projects, are consequently brought about by the complexity of the project, technical requirements, project information breakdown, project team, and contract requirements, project activity duration, and market requirements. Underestimation of these factors in Kisumu county has been experienced and has translated into an increment in the project cost which relates to planning details, project quantities, shortage of required material, poor planning. Performance estimated procedures and techniques. (Cantarelli, Flybierg, Molin & Van Wee, 2016). The foundation of a good estimate and document should be checked, corrected, verified understood, and put in a good format, procedure, and process to arrive at the cost (Mbaluku & Bwisa, 2018).

Poor quantity survey leads to inconsistent contingencies. This leads to confusion on what is included in the project activities and specifically identified in the preparation of plan estimates. (Williams & Gong, 2016). Projects in Kisumu County run into problems and it is expected that added scope can be covered using the contingency amount. In numerous instances, the contingency amount in the estimate is lacking a designed definition hence applied inappropriately to make up for project overrun instead of being available for their allocation (Ahiaga-Dagbu & Smith, 2014).

The county government of Kisumu financial commitment of commercial construction projects is directly associated with revenue streams and any setback in the construction progress will have direct impact on projects. The cost-benefit analysis represents the most probable value of the project instead of the authentic value practiced for project investment purposes, its independent variables are closely examined in the sensitivity tests for the analysis and what-if scenarios. The decision-making processes in Kisumu county are more difficult and this is due to the combination of what-if scenarios. However, the complexity of project progress in the county and its corresponding cash flows requires a better understanding and assessment of construction projects. In this research, cost-related risks are analyzed to give a strong understanding rather than an analysis of unrealistic situations (Adam, Josephson & Linda hl, 2017).

Theoretical Framework

Attaining project goals and objectives is a primary challenge in project management while honoring the preconceived project constraints. (Lamb, Robert, Boyden, 2012). Project constraints in project management consist of cost, time, and scope. For commercial building construction projects to meet pre-defined objectives, they face secondary and ambitious challenges to optimizing the allocation and integration of inputs.

Goldratt, (1984) asserts that management systems are limited to achieving their goals with minimum constraints and that there will always be one constraint. This theory is anchored with the assumption that the rate of goal attainment which is completion of commercial building construction projects is confined by one constraining process. In project management, constraints can be internal or external. When there is more demand of commercial building construction projects in the market than what the county government of Kisumu can deliver it is referred to as an internal constraint. Cost, time, environmental and technology related risk aspects are impediments to the completion of commercial building construction projects in Kisumu county and this has led to contractors and project managers not meeting the market demand. Internal constraints are often caused by equipment used in building construction, people who work in commercial building construction projects (Contractors, Project managers, and Engineers), and environmental regulations and policies (McKinsey, 2001).

When the County government of Kisumu produces more commercial construction projects than the market can bear it is referred to as an external constraint. With this in mind, Companies in the county contracted to

deal with construction projects have to focus on ways in which they can create demand for their services. This theory provides a significant understanding of the extent and complexity of the problem facing Project Management in the construction of building projects. The researcher is also equipped with a knowledge of successive stages with an understanding of the importance of researching project management.

METHODOLOGY

The research study used a descriptive survey research design. This method was applied since it is reliable and entails a description of activities in an organized way. This research methodology describes the attributes of a population and also answers the question of who, what, where, when, and how (Creswell & Creswell, 2017). The study intended to give more information on the quantitative approach than the qualitative approach. The study focused on a target population of 400 that were residents of Kisumu County and involved in construction projects in the county. The study drew a sample size of 234 respondents using Yamane (1967) formula as follows;

Mathematically derived Yamane formula:

$$n = N/ 1 + N (e)^2$$

Where: n = required responses

e = error limit

N = sample size Source:

Yamane (1967:258)

When data are entered into this formula with a 95% confidence level and a 10% error limit, the following results are produced:

Project Managers; $n=100/1+100(0.10)^2 = $**50**

Mechanical Engineers; $n=20/1+20(0.10)^2 = 16.66 \sim$ **17**

Civil Engineers; $n=20/1+20(0.10)^2 = 16.66 \sim$ **17**

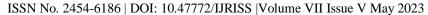Electrical Engineers; $n=30/1+30(0.10)^2 = 23.07 \sim$ **23**

Quantity Surveyors; $n=50/1+50(0.10)^2 = 33.33 \sim$ **33**

Land Surveyors; $n=100/1+100(0.10)^2 = $**50**

Structural Engineers; $n=80/1+80(0.10)^2 = 44.44 \sim$ **44**

<div align="center">

Total = 234

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The representation of the target population and sample size was as follows;

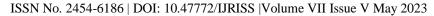| Category	Target Population	Sample Size(n)	Percentage (N/n) *100(%)
Project Manager	100	50	21.37
Mechanical Engineers	20	17	7.26
Civil Engineers	20	17	7.26
Electrical Engineers	30	23	9.83
Quantity Surveyors	50	33	14.1
Land Surveyors	100	50	21.37
Structural Engineers	80	44	18.81
Total	**400**	**234**	**100**

Source: As derived from Yamane Formula, (1967)

The study adopted a stratified random sampling method to gather quantitative data for this research and this was obtained using this formula:(sample size /size of the population) *stratum size. The participants were chosen from each stratum depending to their appropriateness for study participation. Samples were acquired at random from each sampling unit and every individual in the population was entitled to equal opportunity. The purposive sampling technique was applied to collect qualitative data from Project Managers, Civil Engineers, Mechanical Engineers, Structural Engineers, and Quantity Surveyors. Participants were decided by the researcher's decision (Taiwo, 2013). Closed-ended questionnaires was applied in collecting quantitative data in this study. Close-ended questionnaires are appropriate for this research study because the questions are easy to ask, quick to answer, and easy to analyze.

 Pilot testing of a questionnaire was conducted by randomly choosing a specific number of the target population that were not to be part of the selected sample. Mugenda and Mugenda, (2003) indicates that for the pilot study the questionnaire should be administered between 1% up to 10% of the research sample, to be determined by the sample size. The pilot testing was done in Nakuru county. The pilot testing questionnaire according to McDaniel & Gates, (1996), was designed as open-ended questions that identified other research items that can be encompassed in the questionnaire.

Data collection instrument validity and reliability was tested. Validity denotes to the usefulness, accuracy, appropriateness, and meaningful confirmation that will assist in the interpretation of research information (Saunders,2012). The questionnaire was pretested and pilot tested to ensure content validity in construction projects in Kisumu County. According to Borg & Gall (2015), content validity is meant to give reasonable decisions on whether the research equipment controls what is to be measured. Reliability denotes a degree where research outcomes are stable over a certain period and they represent the exact population (Mugenda & Mugenda,2003). This indicates the consistency and stability in which instruments that collect data determine the concepts. Frequent measurements were used, with the management of alternative methods to estimate reliability and the consistent structured line of questions for reliability and likely replication of the study (Kiess and Bloomquist, 2015). Cronbach's Alpha was calculated to evaluate the internal stability for multi-point scaled items in the questionnaire. Cronbach Alpha scales between 0 and 1, with the consistency of data sets represented with high values that are closer to 1. The Cronbach values for this study are found to be ranging from 0.798. A reliability coefficient with a scale of 0.7 is thought to be a valid criterion for scale reliability in social science (Gay,1996). Questionnaires administered to the interviewees were given enough time to think about their feedback.

The researcher did undertake initial notification through a telephone call or a text message to all respondents, to notify them of the request for feedback before delivering, emailing and sharing the online application (Kobocollect) that contains the questionnaires. This improved the questionnaire rate of return.

The research assistant and the researcher administered the research tools to the respondents. The interviews were administered face to face considering the guidelines from the Ministry of Health (MOH) because of the current COVID 19 pandemic. This study had both quantitative and qualitative data collected

It was then coded and inputted in the SPSS for analysis for both descriptive statistics, regression and correlation analysis. The descriptive statistics comprised of mean, Standard Deviation (SD), percentages and frequencies. Qualitative data collected through interview guides and questionnaires were analyzed through content analysis as per the themes and constructs as per the study objectives. With the primary data supplemented by secondary data, similarities and differences that arose from the content analysis were detected. Hypothesis was tested using a simple linear regression.

FINDINGS AND DISCUSSIONS

The sample size drawn from the target population was 234 respondents. 174 questionnaires were duly filled correctly and returned. The questionnaire return rate achieved was 74.36% which is sufficient as opined by Mugenda and Mugenda (2003) who recommends that for social sciences, a return rate of 70% and higher of the study is appropriate for data analysis to proceed.

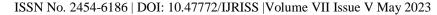**Completion of Commercial Building Construction Projects**

The dependent variable was completion of commercial building construction projects. The respondents were required to give their feedback on the statements provided which were derived by the researcher and approved by expert panel as shown. To measure the response variable, the study employed use of 5 Likert scale where 1= Strongly Disagree (SD), 2= Disagree (D), 3= Neutral (N), 4= Agree (A) and 5= Strongly Agree (SA). The table exhibits the outcome;

Completion of Commercial Building Construction Projects

Statement	N	M	(SD)
A construction project is termed successful when implemented on time	174	3.79	0.816
Project size should determine the time allocated to complete construction project	174	4.14	0.750
Client satisfaction is important in construction project implementation	174	4.16	0.634
Construction project financing should be as per the plan and budget before implementation	174	4.30	0.658
Proper supervision of construction process by the project contractor	174	4.07	0.604
Composite mean and standard deviation		**4.093**	**0.469**

To compare with each statement's mean line item obtained from the response variable indications, the researcher computed a composite mean and SD. The statement had a detrimental effect on the variable's outcome when it was discovered that the line item mean was less than the composite mean. Similarly, when the line item SD was found to be lower than the composite SD, it indicated differing views on the statement. Statement number one, construction project is termed successful when implemented on time, the results obtained 33(19%) strongly agreed, 50(28.7%) were in agreement, 53(30.5%) were neutral, 7(4%) were in disagreement and 1(0.6%) strongly disagreed. The line statement had a mean score of 3.79 and SD of 0.816, which was lower than the composite means of 4.093 and SD of 0.469 suggesting a negative contribution on the response variable.

The study obtained responses from statement number 2, project size should determine the time allocated to complete construction project. The results obtained indicate that 58(33.3%) strongly agreed, 88(50.6%) were in agreement, 23(13.2%) were neutral, 5(2.9%) were in disagreement and 5(2.9%) strongly disagreed.

The line statement had a mean score of 4.14 and SD of 0.750, higher than composite mean of 4.093 and SDof 0.469, suggesting the item contributes positively to the completion of commercial building construction projects represented by 83.9% of the respondents who agreed.

Statement number 3 on clients' satisfaction is a key factor in coming up with construction process and customer relationship the findings showed that 87.9% agreed on the statement. The findings indicate that 50 (28.7%) strongly agreed, 103(59.2%) were in agreement, 20(11.5%) were neutral, 1(0.6%) were in disagreement. The average score for the line statement was 4.16 and SD of 0.634, which was comparable to the composite mean score of 4.093 and SD of 0.469, meaning this contributes positively to completion of commercial building construction projects.

The results obtained on statement number 4, contractors' cash flow problem affects the financing and operation of commercial building construction project since labor and materials cannot be paid on time, the findings indicate that 72(41.4%) strongly agreed, 83(49.7%) were in agreement and 19(10.9%) were neutral. 91.1% of the respondents agreed that construction project financing should be as per the plan and budget before implementation. The line statement had a mean of 4.30 and SD of 0.658 higher than composite mean score of 4.093 SD of 0.469, implying that the item contributes positively to the completion of commercial building construction projects.

The final point of supervision is that it serves as a forum for group problem-solving, making it one of the best instruments for assuring project success. 88.5% of the respondents agreed that proper supervision of construction process by the project contractors. The results were as follows; 35(20.1%) strongly agreed, 119(68.4%) were in agreement, 17(9.5%) were neutral, 3(0.6%) were in disagreement. The line statement had a mean score of 4.07 and SD of 0.604, lower than composite mean of 4.093 and SD of 0.469, suggesting the item contributes negatively to the completion of commercial building construction projects.

Cost-related Risks

The research study aimed on establishing the degree the respondents consented with the statement, cost related risks have an impact on completion of commercial building construction projects by indicating with; 1= Strongly Disagree (SD), 2= Disagree (D), 3= Neutral (N), 4= Agree (A) and 5= Strongly Agree (SA). The table illustrates the outcome;

Cost related risks and completion of commercial building construction projects

Statements	N	Mean	SDV
There is fluctuation in material and labor cost over and above the project provisions	174	3.78	0.818
Employers cashflow is critical in construction projects	174	4.18	0.669
Payment of suppliers by constructors should be done as per contractual agreement	174	4.18	0.714
There should be monitoring and control of payments to the Contractor	174	4.26	0.844
There has to be financial control on site	174	4.25	0.679
Consistent payment to sub-contractors by the contractors	174	4.33	0.619
There should not be any complexity of financial procedures by the client	174	4.39	0.576
Project overtime costs should be applied in construction projects	174	4.16	0.542
Composite mean and standard deviation		**4.192**	**0.357**

Statement 1 of the variable cost related risks on completion of construction project revealed the subsequent descriptive statistical findings; 31(17.8%) strongly agreed, 86(49.4%) agreed, 45(25.9%) were neutral and 12 (6.9%) disagreed that there were fluctuations in material and labor cost over the project provisions. The statement drew a mean of 3.78 and a SD of 0.818 respectively. The results indicate that the statement might be revised in order to improve the predictor variable because it has a negative when measured against the composite mean of 4.192, contribution to the predictor variable.

The statement number 2 on employers cashflow is critical in construction projects data obtained indicated that; 56(32.2%) strongly agreed, 94(54.0%) agreed, 23(13.2%) were neutral, 1(0.6%) disagreed with a mean and SD of 4.18 and 0.669 respectively. According to 86.2% of the respondents, this indicates that the statement contributes favorably to the variable.

The outcomes revealed from the third statement on the payment of suppliers by constructors should be done as per contractual agreement, the findings gathered were; 58(33.3%) strongly agreed, 94(54.0) agreed, 19(10.9%) were neutral, 2(1.1%) disagreed and 1(0.6%) strongly disagreed with a mean and a SD of 4.18 and 0.714 accordingly. The results show that the statement has a negative impact on the variable, and since the composite mean was lower than the line item statement (4.192), the statement might be improved in order to increase the predictor variable.

The statement number 4 of the variable aimed on establishing whether there should be monitoring and control payments to the contractor. The results indicated that 80(46.0%) strongly agreed, 68(39.1%) agreed, 18(10.3%) were neutral, 7(4.0%) disagreed and 1(0.6%) strongly disagreed with a mean and a SD of 4.26 and 0.844 respectively. The comparison to the composite mean (4.192) in the statement suggests that this line item significantly influenced the variable.

On the fifth statement, the study revealed the subsequent outcomes on whether there is financial control on site;67(38.5%) agreed, 88(50.6%) were neutral, 17(9.8%) disagreed and 2(1.1%) strongly disagreed with a mean of 4.25 and a SD of 0.679 accordingly. In comparison to the composite mean (4.192), the statement suggests that financial control on site has a positive contribution to the variable cost related risks influencing completion of commercial building construction projects.

The variable's sixth statement aimed to ascertain if there was consistent payment to subcontractors by contractors' descriptive statistics obtained were; 71(40.8%) strongly agreed, 89(51.1%) agreed, 14(8.0%) were neutral with a mean and SD of 4.33 and 0.619 respectively. The outcomes suggest that the line itempositively contributes to the variable cost related risks in comparison to the composite mean (M=4.192) and the line item (M=4.33).

On statement number 7 on whether there should be any complexity of financial procedures by the client, the descriptive statistics obtained were; 75 (43.1%) strongly agreed, 93(53.4%) agreed, 5(2.9%) were neutral and 1(0.6%) disagreed. The statement had a mean of 4.39 with a standard deviation of 0.576 which was higher than the composite meansof 4.192 suggesting that the statement had a positive contribution to the predictor variable and was represented by respondent'spercentage agreement of 96.5%.

The last statement on project overtime costs should be applied in construction projects, the data obtained showed that 40(23.0%) strongly agreed, 122(70.1%) agreed, 11(6.5%) were neutral and 1(0.6%) disagreed. The mean obtained was 4.16 with a SD of 0.542. the line item mean was less compared to the composite mean of 4.192 showing that the statement had divergent views on completion of commercial building projects. The study concluded that there was a moderate relationship between the independent variable and response variable.

Correlation Analysis between Cost Related Risks and Completion of Commercial Building Construction Projects

The study aimed on determining the association amongst cost related risks and completion of commercial building construction projects while using Pearson Correlation Coefficient. This allows establishment of the strength and the direction of the association amongst cost related risks and completion of commercial building construction projects

Correlation analysis between cost related risks and completion of commercial building construction projects

Variable		Cost related risks	Completion of Commercial Building Construction Projects
Cost related Risks	Pearson Correlation Sig. (2 -Tailed) N	1 174	+0.430** 0.000 174
Completion of commercial Building Construction Projects	Pearson Correlation Sig. (2 -Tailed) N	+0.430** 0.000 174	1 174
**. Correlation is significant at 0.05 level (2-Tailed)			

The Pearson Correlation outcomes of 0.430 indicates a statistically significant moderate positive correlation between cost related risks and completion of commercial building construction projects, that's shows a significant association with p-value of 0.000 which is less than the test level of 0.05 significance level which is ($p<0.05$). this indicates that cost related risks influence completion of commercial building construction projects in Kisumu County.

ANOVA was applied to determine the appropriatness of regression model. It found that F-signifance value of 0.000 was below the 0.05 that is $p<0.05$. the F-ratio $F_{(1,\ 173)} = 47.79$ was more than the critical value of 3.86 and the model was deemed significant.

ANOVA for Time-related Risks and Completion of Commercial Building Construction Projects

Factor	Sum of Squares	Df	Mean Square	F	Sig.
Regression	5.816	1	0.485	47.79	0
Residual	16.328	173	0.101		
Total	22.144	173			

1. **Dependent variable: completion of commercial building construction projects**
2. **Predictor: cost related risks**

The model summary showed extent of the predictor variable cost related risk for the whole model variability. The R Square value of 0.185 implies that only 81.5 percent of the variability in the completion of commercial building construction projects is taken into account by the model, leaving 18.5 percent to be accounted for or explained by cost-related risk. This suggests that cost related risk have an influence on the completion of commercial building construction project

Coefficients of Cost Related Risks and completion of Commercial Building Construction Project

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	6.725	2.3656		0.004	0
Cost Related Risks	1.886	1.541	0.4267	7.151	0

The findings on table 4.12 revealed a standardized beta value of 0.4267 showing that increment with a unit in cost related risks contributed to 42.67% increment in the disparities of completion of commercial building construction projects. At p<0.0, the regression model would be effective overall in forecasting when construction projects will be completed;

Completion of construction building projects = 6.725+ 0.4267 (cost related risks) + e; t=7.151; p<0.05. The research study demonstrated cost related risks have a significant influence on completion of construction building projects therefore the null hypothesis was rejected. The outcome of the study on the first variable for cost related risks (R^2 =0.185) explains that 18.5% of the changes in completion of construction building projects. The researcher in addition examined the qualitative data obtained from the interview guides. The qualitative data suggested that fund income is important in construction projects. Cash flow can procure materials, pay contractors, and finance other functions in the construction projects. In response, one engineer had this to say;

"Commercial construction projects tend not to be completed within schedule and this is because of failure to comply with the contractual agreement by the contractors. Proper monitoring of construction activities by the contractor and controlling payments being done to the project leads to a successful project. Project managers must ensure that there is integrity in which finances are being handled on site and to avoid scope creep. To build moral and ensure there is consistency in which activities are being undertaken in a construction project there must be continuous supply of funds in the project. if there are no beau acracies in releasing funds to the projects by the project sponsors, purchasing of construction materials and acquiring equipment becomes easy."

CONCLUSION

The findings of cost related risks on completion of commercial building construction projects outlined a 4.1925 composite mean and resulted in a 0.430 Pearson Correlation with a p-value of < 0.001 indicating a positive correlation and a statistically significant connection amongst cost related risks and completion of commercial building construction projects. The outcomes on regression analysis indicated that the odds of being in a higher level on completion of commercial building construction projects increased by a factor of6.595 for every one unit increase in cost related risks, while holding the other factors constant, this wasstatistically significant because it has a p-value of 0.001.

The respondents claim that project funding has an impact on the success of commercial building development projects in Kisumu County. Additionally, they listed the following financial concerns as having an impact on the completion of commercial building construction projects: prompt disbursement of money, supplier payment, and consistent contractor payment. According to 54% of respondents, cash flow affects whether commercial building development projects in Kisumu County are completed while 70% reported that construction schedule and project overtime are aspects to be considered as they influence completion of commercial building construction projects in Kisumu County.

A positive correlation was found to be statistically significant with cost related risks and completion of commercial building construction projects. The findings highlighted a significant influence on cost related risks and the completion of commercial building construction projects.
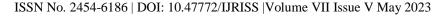
RECOMMENDATIONS

The study recommended the following;

- Future studies should be conducted to critically understand each of the above variables. That kind of study will help commercial building construction projects work on the most critical factors so that risks can be managed properly.
- Cost is a critical factor in every project and should be analyzed intensely before start of the project-either by forecasting based on previous occurrences or through technical analysis to avoid incompletion of projects.

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