An Investigation into the Factors that Influence Project Control Process in the Implementation of Construction Projects in Kenya

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Abstract - The aim of project control process is to ensure projects are delivered on-time, within-budget, desired quality amongst other performance measures (Jackson, 2004). In the construction industry of Kenya, many technological developments have occurred just like other developing countries leading to emergency of project control techniques to aid on the effectiveness of the control process, they include Gantt, Bar charts, Program evaluation and review techniques (PERT) and critical path method (CPM).In addition, many software packages have also been developed to support these techniques. Further, the Government of Kenya (GoK) uses the Building organization and operations manual (BOOM) as an official document to guide implementation of projects (Munano, 2012). Despite the wide use of these control methods and techniques, many projects still fail during implementation. Pointing to a potential gap on what influences the effectiveness of the control process in management of construction projects. This study therefore sought to investigate factors influencing project control process in an effort to enhance effectiveness in project controls. This cross-sectional research adopted a mixed-method design consisting of analysis of a questionnaire survey administered to active 67No. (NCA1, NCA2, NCA3 and NCA4) contractors selected by way of stratified random sampling. A similar approach was also used to select 53No.Consultants with a response rate of 78% and 81% respectively. Data analysis techniques employed include descriptive statistics and thematic analysis. The study established thirty six (36No.) factors that influence project control process. These factors were clustered into seven (7No.) groups. They include; Pre-construction planning (RII=0.786), Project communication (RII=0.801), Commitment to project (RII=0.763), Project administration (RII=0.817) and factors related to Monitoring & Evaluation (RII=0.785).It's recommended that project managers should enhance their pre-construction planning strategies and establish a good enabling environment for the execution of construction projects by constituting a competent project team, clearly defining the performance benchmarks, outlining the project scope, establish a sound communication plan for the project and receive commitment from all the project participants.

Keywords: Project control, construction industry, Project control factors, Kenya.

I. INTRODUCTION

The construction Industry is the backbone for economic development. Kenny (2007) observes that the construction sector's rolein economic development is huge and undeniable.

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It is a sector involved with erection, repair and demolition of buildings and civil engineering structures in an economy (Hildebrandt, 2000).According to Bechtel (2007). The construction industry is diverse with projects ranging from small to large and very large contracts such as $14.7 billion Channel Tunnel project and $20 billion Hong Kong International Airport. In Kenya, the construction industry is a crucial sector for the growth of the economy. According to the Kenya National Bureau of statistics (KNBS;2015),the construction industry contributed to 4.1%,4.2%,4.4 and 4.8% towards Gross Domestic Product (GDP) for the years 2011,2012,2013 and 2014 respectively. This is an average of4.3% compared to 10% GDP for developed countries (Kenny 2007 and, Hildebrandt 2000).Clearly there is need for growth of the construction industry in Kenya to match the developed economies. During the last few decades, numerous project control methods, such as Gantt, Bar Chart, Program Evaluation and Review Technique(PERT)and Critical Path Method (CPM), have been developed(Nicholas 2001,Lester 2000). In addition, a variety of software packages have become available to support the application of these project control methods, for example Microsoft Project, Asta Power Project and Primavera. In Kenya, despite the wide use of these control methods and software packages in practice, many construction projects still face performance challenges during implementation hence do not achieve their planned performance objectives. This has formed a basis for many construction researches by the industry players (See Gaya 2015, Muchungu 2012, Wanyona 2005, Gichunge 2000, Talukhaba 1999,and Wachira 1996). It's against this background that this article sought to assess the perceptions of contractors and consultants regarding the factors that influence project control in the construction industry of Kenya.

II. REVIEW OF PERFORMANCE CHALLENGES DURING PROJECTS IMPLEMENTATION

On-time, within-budget and desired quality are common requirements for all construction projects among other performance related requirements. Unfortunately, in reality many projects suffer from delays, budget overspends, poor quality, safety concerns amongst other challenges. For example, In Saudi Arabia, Assaf and Al-Hejji (2006) found that only 30% of construction projects were completed within the scheduled completion dates and that the average time overrun was between 10% and 30%. Odeyinka and Yusuf (1997) have shown that seven out of ten projects surveyed in Nigeria suffered delays in their

execution. Ogunlana and Promkuntong (1996) conducted a study on construction delays in Thailand. Al-Momani (2000) carried out a quantitative analysis on construction delays in Jordan. Frimpong et al. (2003) conducted a survey to identify and evaluate the relative importance of the significant factors contributing to delay and cost overruns in Ghana groundwater construction projects. Amongst many other studies globally. The concern in many of these studies is failure in timely delivery of construction projects which is one of the challenges project control process is meant to address. In the construction industry of Kenya, most projects do not achieve the implanted cost, time and quality objectives among other performance measures. These problems occur both in the public and private sector projects. Ayman (2000) in an article titled "Construction delay: a qualitative analysis" undertook a survey of 130 projects in the public sector where delay was attributed to poor pre-construction planning, change orders, late delivery, poor design and increase in quantities amongst other factors. The same author indicates that construction delay and time overruns are critical problems in the implementation of construction projects in Kenya. Interestingly, many construction researchers have spent considerable time studying this subject matter and the trend is still continuing. Munano (2012), in her research thesis, has observed that majority of projects undertaken for public sectors are not completed on time. For example project completion rates for the government of Kenya for 4 years up to 2010/2011 financial years were 37.97%, 47.53%, 33.14% and 21.88% respectively. This is happening despite the use of the Building Operations and Organization Manual (BOOM) an official government document which is meant to guide on the implementation of construction projects (Munano, 2012). This shows an average completion rate of 35.6% which is dismisal. According to this author, this state of affairs is attributed to causes such as; slow progress by the contractors; delays in decision making by various players, delayed payments to contractors amongst other factors. In the private sector, many authors have observed that the trend of poor performances of projects during implementation is a chronic problem. Gichunge (2000) in his research thesis amplifies this and notes that majority projects are dwarfed with cost and time overruns and has attributed this to poor planning, lack of experience in related projects, fluid brief from clients, indecisiveness, poor scope definition amongst many other reasons. The same argument is supported by Muchungu 2012, Wanyona 2005, Talukhaba 1999, and Wachira 1996.

III. ACHIEVING SUCCESSFUL PROJECT CONTROL

1.1 Project Control

PMBOK (2013) defines Project control as the process of ensuring that project objectives are met by monitoring and measuring progress regularly to identify variances from Plan, so that corrective action canbe taken when necessary. While Fortune and white (2006), indicate that project monitoring and control is a subsystem charged with observing the transformation process and reporting deviations for corrective action, IPMA (1999), observes that in project management, project control is based on comparison of baseline plans and contracts with actual events and re-planning when the two do not match. This position concurs with the views of (Kerzner, 2006 and Gardiner, 2005). In practice, project control is mainly exercised during execution stage, due to deviations effecting planned work. Project control mainly depends on field data for assessing, analyzing and corrective actions. So, quality and quick access to field data is important. This would be best possible, when the team works in co-ordination with site management. Also, Reschke, (1990) elaborates that Control is the skill required to bring a project from the start to the end without jeopardizing pre-defined goals. Though PMBOK 2013, Jackson 2004, Gardiner 2005, Ahen et al. 2001, and Reschke 1990 have elaborated the details of controls for various knowledge areas, there is always a need to understand the key project control factors which when implemented effectively will enhance success in control process.

2.6.1 Pre-Construction Planning.

The subject of planning and pre-construction planning is central to project control process. Ackoff,(1970)cited in Tucker (1987) defines planning as a decision making process derived in advance of execution, meant to design a desired future with ways of implementation where in planning answers questions what, how, by who, with what and when. The purpose of planning a sex plained by Tucker (1987) is to assist the manager to fulfill his primary functions of direction and control in the implementation of project components, coordinate and communicate with the many parties. George (2008)says that at the planning phase many potential problems are identified proactively before they can greatly affect project cost and schedule during the implementation phase. What is clear here is that planning and control are like Siame set wins, if you have no plan, you have no control. Project planning helps to create a benchmark for execution. (Harrison, 2007), argues that clear benchmarks are critical as they are used at execution to provide direction for the project team as events unfold. To do this task, the PM has to assemble the most competent team and take into consideration cultural differences. Muller, (2009) Advise that project team members from different cultural backgrounds will have varying decision– making styles.

1.2 Project communication.

Communication plays an important role in leading, integrating people, and taking decisions to make a project a success. There must be shared project vision, where the project manager identifies the interests of all relevant stakeholders and ensures that there is buy-in to the project (Yang, 2009). According to Zwikael, (2009), once the project objectives are set and the scope clarified, there must be constant update as the project progresses. Progress on activities assigned to individuals or groups needs to be monitored with a view to achieving overall goals. These updates must be communicated to the relevant parties. Newton, (2005) believes that a detailed communication plan is necessary for the effective dissemination of information. To this end, frequent project meetings are necessary.

1.3 Commitment to project plans.

The literature reviewed in

the current study, have pointed out the need for unwavering commitment to project in an effort to ensure success of the project controls. Commitment emphasizes the support of top management, commitment to the project, clear objectives and scope, and political support. The support of top management goes beyond the provision of funds and making resources available (Johnson, Scholes & Wittington, 2006). Kerzner (2006) believes that commitment to the project is very closely linked to a sense of collectivism, rather than individualism. An environment needs to be created, in which team members experience job satisfaction and are, therefore, motivated to be part of the team. Optimal performance by team members is important. Having clear objectives and scope are key in providing direction to team members. Objectives must be clear and scope should be as simple as possible in order to avoid "grey areas". It is inevitable that changes will occur during the course of the project. Flexibility and adaptability are, therefore, central to achieving success.

1.4 Project administration.

Quality of record keeping, Quality review of plans, change approval procedures and Quality of corrective measures adopted are among factors suggested as key to successful project administration. (Nguyen *et al*., 2014; Chau *et al*., 1999 and, Sookhalal, 2010).In addition, all relevant stakeholders have to enter into contractual agreements regarding the activities to be performed in the project. The PM has to ensure that even internal stakeholders, such as functional managers, have signed performance contracts. The contracts must clearly stipulate the quality, time and cost parameters to be met. If no contract is signed by parties, it would be difficult to implement and administer any project goals (Kerzner, 2006). The growing number of lawsuits, nowadays, between contractors and project managers, is not encouraging (Sookhalal, 2010). This calls for the simplification of the contract documents and involvement of a mediator before a lawsuit is considered. The mediator should have in-depth knowledge of the building construction industry.

1.5 Monitoring & Evaluation.

Monitoring & evaluation is central to the project control process. Many times, actual progress do not match the planned progress making it essential to keep the management , client, engineer, and sponsor informed of the progress and the precise conditions that can effect each occurrence. Fringenti (2002) cited in Duna and Burela (2008) mentions that controlling includes monitoring, but it also includes taking timely, corrective action to meet project objectives or goals. So, depending upon the extent of variation between planned and actual, the management should initiate appropriate control actions. Similar views are held by Aitken (2000) who argues that most information is analyzed by variance i.e. difference between planned and actual performance and it is the management which is will determine what is useful in analyzing individual situation.

1.6 Leadership style.

A project's success is, in part, contingent on effectively managing the constraints of time, costs, and performance expectations. In order to achieve this it is essential that the project manager possess and display appropriate leadership skills (Ahmed 2008, Hyvari 2006, Sumner *et al*., 2006, Finch 2003, Zimmerer & Yasin 1998). By applying the appropriate leadership attributes such as balance, proficiency, persistence, sound decision making, imagination, vision, values, integrity, trust, and sincerity a project manager could direct projects effectively and efficiently (Maylor, 2003). Schmidt (2001) indicated that an effective leader motivates the project team towards achieving the desired outcome of a project. Ahmed (2008) purported that a project manager should be recognized as a leader not only by the project team but also by everyone involved in the process, inclusive of clients and the organization. In striving for this recognition, the project manager is required to keep the spotlight on the vision, inspire the team, promote teamwork and collaboration, champion the project, and remove obstacles to progress (Ghattas & McKee, 2004). Knutson (2001) suggested that the project manager as a leader needs to fulfill the following requirements:

IV. RESEARCH METHODOLOGY

Literature review on project control was undertaken to identify the factors that influence project control (PMBOK 2013, PMBOK 2000, Sookhalal2010, Wideman 2010, Anantatmula 2010, DvirandSadech2009, MullerandOzcan2009, Zwikael 2009, Gorge R 2008, Christenson 2008, Forsythe 2008, Samuelson 2006, IyerandJha 2006, Newton 2005, Jackson 2004, Othman 2004, Chanet al.2004, Nguyenetal.2004, Lan 2004, Al-jibouri 2003, Chauet al.1999, Clelandetal.1998, Laufer&Tucker 1987,and Souder et al.1975) 36 factors influencing project control were selected. These factors were clustered into 7 groups based on literature review. These groups include; Pre-construction planning, Factors related to project communication, Commitment factors, factors related to project administration, Monitoring& evaluation factors, external factors and factors related to leadership style of the project leader. To assess the perceptions of the contractors and consultants regarding these factors, a structured questionnaire survey approach was adopted. The relative importance Index method (RII) was used here to determine the contractors and consultants perceptions of the relative importance of the factors identified. The index was computed as per equation I below ;(Cheung et al, 2004; Lyer and jha, 2005; Ugwu and Haupt, 2007)

$$RII = \frac{\sum W}{A \times N} \quad \text{.....Equation I}$$

Where,

- W is the weight given to each factor by the respodents and ranges from 1 to 5
- A =the highest weight=5
- N=The total number of respondents

For purpose of this study, a sample of 67 Contractors was randomly selected from Active NCA1, NCA2, NCA3 &NCA4contractors in Kenya and 53 Consultants (Practitioners) were selected from their respective registration bodies through

stratified random sampling. Fifty Two contractors and Forty Three consultants responded, constituting a response rate of 78% and 81%, respectively. The questionnaire was divided into two sections, namely an introduction section and a section related to factors that influence project control. Closed-ended questions using a five point scale (not important – extremely important, where 1 indicates not important and 5, extremely important) were used in responding to section two of the questionnaire. Closed-ended questions were preferred as they reduce the respondent`s bias and facilitate coding of the questionnaire (Akintoye& Main,2007). Descriptive and inferential statistics were used to analyze the quantitative data. The data analysis was performed using the Statistical Package for Social Sciences (SPSS).The level of significance was set at 95% (p=0.05).

V. RESULTS AND DISCUSSION

5.1 Industry experience.

The majority of contractors, 34.6 %, had between six to ten years' experience working with projects. This was closely followed by 28.8 % who had between three to six years. 26.9% had over ten experiences lastly 9.6 % of the responding contractors had experience between one to three years. On average 61.5% had experience of over six years. (See Table 1). It emerged that majority of consultants, 37.2% had over ten years of working experience in projects. This was followed by 30.2% who had between three to six years.

Table 1: Tabulation of participants' years of working experience.

	Contractors (N=67)		Consultants (N=53)	
Years of Working experience	Frequency	Percentage (%)	Frequency	Percentage (%)
1-3 Years	5	9.6%	3	6.9%
3-6 Years	15	28.8%	13	30.2%
6-10 Years	18	34.6%	11	25.5%
Over 10 Years	14	26.9%	16	37.2%
Total	**52**	**100%**	**43**	**100%**

Source: Research`s field survey (2015)

5.2 Results and discussion on factors influencing project control process.

5.2.1 Pre-construction Planning Factors.

Table 2: The relative Importance Index (RII) and rank of factors related to Pre-construction planning.

	Contractors (N=67)		Consultants (N=53)		All Response	
Planning Factors	RII	Rank	RII	Rank	RII	Rank
Clarity of Scope Statement	0.903	1	0.889	1	0.896	1
Clarity of Performance benchmarks	0.883	2	0.847	2	0.865	2
Competency of project Team	0.725	4	0.639	5	0.682	5
Contractor Selection criteria	0.723	5	0.729	4	0.726	4
Clarity of roles definition	0.741	3	0.788	3	0.764	3

Source: Researcher`s field survey (2015)

The relevant importance index distribution of items that constitute planning factors as indicated in Table 2, reveal that both the contractors and consultants rank as "extremely important" to clearly state the scope statement for the project from the on-set, this was ranked first by the contractors and consultants with RII equal to 0.903 and 0.889 respectively. Clarity of benchmarks was ranked second by contractors and consultants with RII equal to 0.883 and 0.847 respectively, this finding concurs with Harrison (2007) who argues, that clear benchmarks are critical as they are used at execution to provide direction for the project team as events unfold. Clarity of roles definition has been ranked position three by both the contractors and consultants with RII equal to 0.741 and 0.788 respectively. Interestingly, the contractors rank last the selection criteria used to procure the contractor (RII=0.723), this position differs with consultants who consider awarding bids to the right contractor critical for successful implementation of projects by ranking it fourth with RII equal to 0.729.In order to have a competent contractor on site (Philips and Prince 2008) advocate the use of multiple criteria when selecting contractors. These criteria need to take into consideration, *inter alia*, track record, safety practices, quality management and technical ability. Considering both the contractors and consultants perceptions, the following factors in the order of importance were therefore confirmed to influence project control; Clarity of scope statement (RII=0.896), Clarity of benchmarks (RII=0.865),Clarity of roles definition (RII=0.764), Contractor selection criteria (RII=0.726) and competency of project team (RII=0.682).

5.2.2 Project communication factors.

Table 3: The relative Importance Index (RII) and rank of factors related to project communication.

	Contractors (N=67)		Consultants (N=53)		All Response	
Project Communication	RII	Rank	RII	Rank	RII	Rank
Project vision	0.760	5	0.839	3	0.799	5
Update of project plans	0.858	2	0.765	5	0.811	4
Quality of decision making process	0.904	1	0.896	1	0.900	1
Change approval procedures	0.839	3	0.832	4	0.835	2
Progress reporting system	0.672	6	0.600	6	0.636	6
Frequency of Project Meetings	0.776	4	0.874	2	0.825	3

Source: Researcher's field survey (2015).

It emerged from the relative importance index and rank of factors Table 3 for items constituting project communication, that both contractors and consultants consider quality of decision making process during project implementation key to project control process, both respondent groups ranked this first with RII equal to 0.904 and 0.896 respectively. While Contractors consider regular update of project plans as a second important factor (RII=0.858) in ensuring success in project control, Consultants perceive project meetings most important

with RII equal to 0.874, this can be attributed to the fact that Meetings are a great way of communicating, where any grey area in the implementation of a project can be addressed early enough. It does appear then that the PM has to formulate a detailed communication plan and schedule of meetings and inspections for the entire project duration and to this end, regular meetings are highly encouraged. Contractors consider change approval procedures as the third most influencing factor with RII equal to 0.839, consultants rank this number four in the order of importance with RII equal to 0.832. Overall, considering contractors and consultants perceptions, the following communication factors in the order of importance were therefore confirmed to influence project control process; Quality of decision making process (RII=0.900), Change approval procedures (RII=0.835),Project meetings (RII=0.825), Update of project plans (RII=0.811),Project vision (RII=0.799) and Progress reporting system (RII=0.636).

5.2.3 Commitment factors.

Table 4: The relative Importance Index (RII) and rank of factors related to Commitment

	Contractors (N=67)		Consultants (N=53)		All Response	
Commitment factors	**RII**	**Rank**	**RII**	**Rank**	**RII**	**Rank**
Top Management Support	0.889	1	0.617	5	0.753	4
Adherence to project plans	0.788	4	0.813	2	0.800	2
Degree of motivation to project team	0.839	2	0.848	1	0.843	1
External environment	0.584	5	0.662	4	0.623	5
Commitment to contractual provisions	0.808	3	0.739	3	0.773	3

Source: Researcher`s field survey (2015)

Majority of contractors, rank first (RII=0.889) the need for top management support to the project this differs greatly consultants who ranked this factor fifty with RII equal to 0.617.This can be attributed to the fact that contractors could be perceiving financial support and resource mobilization from the top management as central to successful execution of projects. However, as Johnson (2006) observes the top management support goes beyond the provision of funds and making resources available. It includes aspects such as providing clarity on the project objectives and reassuring project team members that they will be valuable after the project. Changes that would come about due to the project can cause team members to be highly skeptical of their future in the organization. This will directly affect their level of performance towards the project. Adherence to project plans was ranked by consultants and contractors as second and fourth respectively with RII equal to 0.813 and 0.788 in that order. Commitment to contractual provisions was ranked third by both the contractors and consultants with RII equal to 0.739 and 0.808 respectively. The respondents therefore, confirmed the following commitment factors in order of importance to have influence to project control process, they comprise of; Degree of motivation to project team (RII=0.843), Adherence to project plans (RII=0.800), Commitment to contractual provisions (RII=0.773), Top management support (RII=0.753) and External environment (RII=0.623).

4.2.2.4 Project administration factors.

Table 5: The relative Importance Index (RII) and rank of factors related to project administration.

	Contractors (N=67)		Consultants (N=53)		All Response	
Project Administration	**RII**	**Rank**	**RII**	**Rank**	**RII**	**Rank**
Quality of record keeping	0.858	2	0.741	4	0.799	3
Quality review of plans	0.760	5	0.832	2	0.796	4
Quality of progress tracking	0.896	1	0.902	1	0.899	1
Quality of contract documentation	0.812	4	0.726	5	0.769	5
Quality of corrective measures adopted	0.832	3	0.813	3	0.822	2

Source: Researcher`s field survey (2015).

It emerged that majority of contractors and consultants perceive quality of progress tracking as key to project control process this was ranked first with RII equal to 0.896 and 0.902 respectively. These findings are reflected in table 5 above. The findings appear to be in line with PMBOK (2013), who view progress tracking as a continuous process that should involve monitoring and measuring progress regularly to identify variances from Plan, so that corrective action can be taken when necessary. Quality of record keeping was ranked second by contractors with RII equal to 0.858 however, consultants ranked this fourth with RII equal to 0.741 this can be attributed to the fact that contractors often times are required to justify claims or variations for payments and therefore find record keeping more important to them than to consultants. Interestingly, contractors rank last quality review of plans with RII equal to 0.760, consultants however rank this second with RII equal to 0.832. Zwikael (2009) advises that special focus be given to redefinition of activities and development plan updates this ensures any changes to original plans are clearly captured and properly communicated to relevant parties. Overall, the following contract administration factors were confirmed in order of importance to project control process; Quality of progress tracking (RII=0.899), Quality of corrective measures adopted (RII=0.822), Quality of record keeping (RII=0.799), Quality review of plans (RII=0.796) and quality of contract documentation (RII=0.769).

5.2.5 Monitoring & Evaluation factors.

Table 6: The relative Importance Index (RII) and rank of factors related to Monitoring and evaluation factors.

	Contractors (N=67)		Consultants (N=53)		All Response	
Monitoring & evaluation	**RII**	**Rank**	**RII**	**Rank**	**RII**	**Rank**

Monitoring tools used	0.788	3	0.812	3	0.800	3
Quality of field data collection methods	0.847	1	0.889	1	0.868	1
Team effort	0.725	5	0.729	4	0.727	4
Degree of analytical skill required	0.729	4	0.688	5	0.708	5
Degree of technical know-how	0.832	2	0.813	2	0.822	2

Source: Researcher`s field survey (2015)

The results, indicated in table 6, reveal majority of contractors and consultants rank first the quality of field data collection methods used in the monitoring process with RII equal to 0.847 and 0.889 respectively. These findings are in line with views of; Aitken (2000), Frigenti (2002) and Jackson (2004) who hold that the quality of information is important. Ordinarily the work sites are busy and do not provide monitoring personnel with much needed information. So, getting complete and accurate data from field is very important and is also a weak link in the project control process. Degree of technical know-how has been ranked second by both contractors and consultants with RII equal to 0.832 and 0.813 clearly indicating the significance of those tasked with the project control process to have a technical mastery of the whole process. Interestingly, both the responding contractors and consultants are of the view that monitoring tools are important in the control process; this has been ranked third with RII equal to 0.788 and 0.812 respectively. Contractors rank degree of analytical skills and team effort forth and fifty respectively with RII equal to 0.729 and 0.725 respectively. On the other hand consultants rank team effort and degree of analytical skills forth and fifty respectively with RII equal to 0.729 and 0.688 respectively. Therefore, in overall, the following monitoring and evaluation factors have been confirmed to have influence on the project control process and include; Quality of field data collection methods (RII=0.868),Degree of technical know-how (RII=0.822),Monitoring tools used (RII=0.800),Team effort (RII=0.727) and degree of analytical skills required (RII=0.708). This analysis indicate that during monitoring and evaluation, there is a great importance on tools and techniques, team work, quality of field data collection methods and necessity to have analytical skills to interpret and analyze information for decision making.

5.2.6 Leadership factors.

Table 7: The relative Importance Index (RII) and rank of factors related to leadership style.

	Contractors (N=67)		Consultants (N=53)		All Response	
Project leadership	**RII**	**Rank**	**RII**	**Rank**	**RII**	**Rank**
Ability to mobilize project team	0.821	1	0.812	1	0.816	1
Conflict resolution ability	0.759	3	0.779	3	0.769	3
Ability to inspire project team	0.792	2	0.804	2	0.798	2
Emotional maturity	0.639	5	0.726	5	0.682	5
Decisiveness	0.736	4	0.769	4	0.752	4

Source: Researcher`s field survey (2015).

It emerged from table 7 above, that both the contractors and consultants perceive the ability to mobilize project team in executing project activities as critical in the control process by ranking it first with RII equal to 0.821 and 0.812 respectively. These views are in line with Hackman & Johnson (2000) who believe that to be effective, the leader ought to be able to balance many variables while mobilizing the project team in pursuit of a common objective. They further alleged that achieving such objectives required the unification of purpose for both leader and followers. To achieve balance does not necessarily rely on the development of any particular trait or style of leadership but more on the leader's ability to analyze the situation and adopt a leadership approach that mobilize followers (Winston, 1997).This has been closely followed by the ability to inspire the project team which has been ranked second by both the contractors and consultants with RII equal to 0.792 and 0.804 respectively. Bass (1990) suggests that leadership is the ability to influence and inspire those you are leading towards the achievement of goals and objectives. Freiberg and Freiberg (1996) concur that leadership is a dynamic relationship based on mutual influence and common purpose between leaders and collaborators in which both are moved to higher levels of motivation and moral development as they influence others through action to accomplish an objective. Conflict resolution ability was ranked third by the responding contractors and consultants with RII equal to 0.759 and 0.779 respectively. Decisiveness of the project leader and emotional maturity were ranked forth and fifty respectively with RII equals to 0.0.736, 0.639, 0.769 and 0.726 in that order for contractors and consultants. These findings are in line with Dvir *et al*., (2002) who suggest that good leaders should be trusted by their followers for whom they provide a sense of autonomy. The leader should be consistent with decision making for followers as well as the overall good of the organization. The leader should also be able to envision potential problems and pitfalls before they happen. Salovey & Mayer (1990) believe emotional maturity is particularly important. They argue that Emotional maturity is a subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and, to use this information to guide one's thinking and actions. The ability to recognize and regulate one's and others' feelings can help project leaders to better connect to, and interact in a balanced and empathetic way with competing stakeholder interests (Turner & Lloyd-Walker, 2008). Emotional abilities can prove beneficial in helping leaders relate to and maintain good relationships with different stakeholders. The ability to be empathetic and considerate about others needs and feelings, especially in difficult situations, can help to neutralize relational tensions e.g., those stemming from conflicting values and interests among stakeholders in a project. Overall, the responding groups confirmed the following

leadership factors in the stated importance index to have influence on the project control process. These include; ability to mobilize project team (RII=0.816), Ability to inspire project team (RII=0.798), Conflict resolution ability (RII=0.769), Decisiveness of the project leader (RII=0.752) and Emotional maturity (RII=0.682).

5.2.7 External factors.

Table 8: Relative Importance Index RII and rank for external factors

	Contractors (N=67)		Consultants (N=53)		All Response	
External factors	**RII**	**Rank**	**RII**	**Rank**	**RII**	**Rank**
Site conditions	0.712	3	0.804	2	0.758	3
Economic conditions	0.788	1	0.813	1	0.800	1
Weather conditions	0.696	4	0.726	4	0.711	4
Relationship with neighbours	0.736	2	0.797	3	0.766	2
Strikes/Civil unrest	0.647	5	0.604	5	0.625	5

Source: Researcher`s field survey (2015)

Table 8, shows that both the contractors and consultants perceive economic conditions as the most important factor influencing project control, both responding groups have ranked it first with RII equal to 0.788 and 0.813 respectively. Contractors consider relationship with neighbours second most factor (RII=0.736) while consultants rank it third most important (RII=0.797). This result reflects the impact of neighbors and adjacent lands on the project. Perhaps contractors are taking into consideration the view that resistance from the neighbours to the project as a result of poor relationship will affect the progress of the project. The use of project location by others also may affect the project activities, so many times the activities of project may be stopped in such like cases. Site conditions has been ranked third by contractors (RII=0.712) while consultants consider it to be second most important factor (RII=0.804). According to Mohamed (2008), the poor site condition is one of the major factors that cause delay, but this factor depends on the type of project, whether construction or infrastructure project or geographical location, so the delay may occur which will impact on the project schedule. Contractors have ranked weather conditions fourth (RII=0.696) this view is in line in terms of order with consultants perceptions (RII=0.726).Both responding contractors and consultants are of the view that civil unrest and strikes have the least impact on the project control process. This has been placed at position five by contractors and consultants with RII equal to 0.647 and 0.604 respectively. This can be attributed to peaceful environment experienced in the construction industry in Kenya. According to all respondents as shown in Table 8, the following external factors have been confirmed to influence the project control process in the order of importance as follows; Economic conditions (RII=0.801),Relationship with neighbours (RII=0.766),Site conditions (RII=0.758), Weather conditions (RII=0.711) and Strikes/Civil unrest (RII=0.625).

Table 9: The relative Importance Index (RII) and rank of all factor groups influencing project control in the implementation of construction projects in Kenya according to all categories.

	All Response	
Factor group	**RII**	**Rank**
Pre-Construction Planning factors	0.786	3
Project Communication factors	0.801	2
Commitment factors	0.758	6
Project administration factors	0.817	1
Monitoring & Evaluation	0.785	4
Leadership factors	0.763	5
External factors	0.732	7

Source: Research`s field Survey (2015)

VI. CONCLUSION

This article sought to assess the perceptions of contractors and consultants on the factors that influence project control in Kenya. The findings suggest that both the contractors and consultants strongly support the factors identified and encapsulated into seven groups. It emerged that factors influencing project control process should comprise of; Project administration factors (RII=0.817), Communication factors (RII=0.801), Pre-construction planning factors (RII=0.786), Monitoring & Evaluation (RII=0.785), Leadership style (RII=0.763), Commitment factors (RII=0.758) and external factors (RII=0.732).

This can be expressed as a linear function as follows:

P.C.P=0.817P.A+0.801P.C+0.786PeP+0.785M.E+0.763LS+0.758CF+0.732E.F±e

Where P.C.P=Project control Process

P.A=Project Administration factors.

P.C=Project communication factors.

PeP=Pre-construction planning factors.

M.E=Monitoring & Evaluation factors.

L.S=Leadership factors.

C.F=Commitment Factors

E.F=External factors

e=Other factors not included in the function

Based on the findings of this study,It's recommended that project managers should enhance their pre-construction planning strategies and establish a good enabling environment for the execution of construction projects by constituting a competent project team, clearly defining the performance benchmarks, outlining the project scope, establish a sound communication plan for the project and receive commitment from all the project participants.

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