

DETERMINANTS FOR ADOPTION OF QUALITY MANAGEMENT SYSTEM IN PROJECT IMPLEMENTATION: A CASE OF NYANDARUA COUNTY GOVERNMENT CONSTRUCTION PROJECTS, KENYA

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ABSTRACT

The purpose of this study was to establish determinants for adoption of Quality Management System, by assessing the extent to which the system can resolve Projects Implementation challenges in the construction of County Government's projects. The study was designed to analyze the role of Quality Monitoring and Evaluation and Quality Planning adoption in projects' implementation to resolve construction projects' challenges within the county. The survey' theoretical framework was premised on the Total Quality Management theories of Joseph Juran, Philip B. Crosby, and the International Organization of Standardization models for Quality Management System. The research was conducted in Ol-Kalou Sub-County with a sample size of 104 respondents. Purposive sampling technique was utilized to reach out to the top management and key informant suppliers while, random sampling was used to pick lower carder employees. Using Descriptive survey design, an analysis of relationships' significance was done which yielded measures of central tendencies such as mean, median, mode, standard deviation, variance, frequency, percentages and coefficient of correlation. The null hypothesis which assumed that benefits of introducing Quality Management System in Construction Projects were not significant to the challenges experienced in the construction of County Projects was rejected. The study found out that Monitoring and Evaluation challenges underscored the county's weaknesses especially where projects are not properly monitored. Quality Planning was necessary in supporting quality improvement on time, cost and project quality. Besides, determinants for Adoption of Quality Management System in Project Implementation were found to be a necessary system for county governments to adopt. The study realized that challenges of Quality projects can be addressed by Quality Planning, quality monitoring and evaluation, Innovating Organizational Context and Quality Training. The study recommends that there is need for the County Government to introduce Quality Planning to ensure they save on project cost, time and quality.

Key Words: Quality Management System, Quality Planning, Monitoring and Evaluation, Project Design.

1.1 Introduction

Having an integrated Quality Management System (QMS) ensures consistency and better performance of construction projects according to Ali & Rahmat (2010) which improves project

performance. Case studies of where QMS has been utilized have yielded positive response. According to Wan & Zeng (2013) in a study of W-Company in China, customer complaint handling declined by an average of 1.2575% annually after implementation of QMS in their operations. Moreover, it improved products and customer satisfaction from the previous average annual figure of 3.7075%.

In another instance of a Metal Industry Company, Prof Witold & Dr Maruszewska(2015) noted that, efficient QMS allowed organizational control, analyses of management system, continuous monitoring and improvement of QMS. They further noted that, for smooth operations of modern companies, the organization must adapt the QMS. To emphasize the importance of QMS Khan & Afzaa (2014) in her study of education institution; she says, “Education institute can lose quality education because they fail to adopt significant opportunities to improve their education standards as per the QMS guidelines. These case studies reflect on the wide scope QMS can be utilized in the currently globalized market. Construction in developing countries are characterized by low productivity, lack of standards and poor quality; Moreover, ISO based QMS does not adequately resolve construction challenges (Bawane, 2017). In Malaysia 75% of Top Management communicated customer’s requirements to subordinates to avoid problems and not for quality improvement; where over 50% of the construction stakeholders had problems in QMS implementation due to mainly: inadequate technical expertise, ineffective communication, contractor’s substandard work, and increase in cost and time (Keng & Abdul-Rahman,2011).

To address quality problems in construction of public buildings, Rwelamila (1995) noted that, South African Development Community (SADC) Countries should pursue and implement QMS. In South Africa, Contractors failed to undertake education and training on QMS leading to high Cost of Non-Conformance (Smallwood & Rwelamila, 1999). While in Ghana they faced challenges in project quality and Construction deadlines since QMS was most prominently driven by getting more jobs and not Tota Quality improvement (Agbenyega, 2014). A study in Swaziland by Mashwama, Aigbavboa, & Thwala, (2017) found out that, QMS and critical success factors in construction projects, can eliminate poor construction project quality. In Tanzania, Project Quality Plan as part of implementation of QMS was limited to only inspection and test plans due to lack of QMS knowledge by project consultants and owners (Shengeza, 2017). This underscore the importance of QMS training for the project stakeholders. In a case of Laboratories in Botswana, Uganda and Benin, QMS implementation was challenging to implement resulting to performance stagnation; training, motivation, stakeholder involvement,

additionally, resources were recommended as the solution to ensure QMS implementation in projects (Anisimova, et al., 2015). In Ethiopia, ISO 9001 certified companies faced the following challenges in QMS implementation: resistance to change from stakeholders; inconsistency in QMS implementation; and Turnover; They lacked tangible benefits due to poor QMS adoption strategy (Kidanu, 2014).

In Kenya, the government policies like the Public Finance Act, Public Procurement and Opportunity Act, Environmental Management and Coordination Act among others, spell out the policy frameworks involved in the project implementation. Most of the Acts in the state are geared inherently towards control of project implementation process. Githenya & Ngugi (2014) underlines the importance of a good project implementation which is essential for the success of the project. According to Ngundo(2014) devolution was a strategy meant to recuperate and remedy institutional deficiencies that were being experienced in the previous centralized government: These period has been marred with various challenges and success towards delivery of the services to the public.

In the current global industrialization and capitalism, the need of having standardized products and services is ever growing and the driving force towards economic growth. International organization of Standardization (ISO) has endeavored to support innovation and provide solutions to the global challenges (Haefner, Gallagher, & Rogers, 2017). These have endeared ISO quality standards to over 1,644,357 organization certification as of the ISO Survey 2016 according to (Charlet, 2017). The ISO standards are based on management system standards (MSS). MSS as explained by American Society of Quality (2017) is what the organization does to manage the activities and processes so as to attain the objectives of the products and services. MSS principles are derived from the Deming wheel cycle which is Plan-Do-Check-Act. MSS is the bases of ISO 9000 family that addresses quality management (American Society of Quality, (ASQ) 2017). ISO 9000 entail setting product and service quality improvements, of which quality is the degree to which inherent characteristics of the product or service attain the expectation stated and general implied (Hoyle, 2001). The current ISO 9001:2015 has reinforced the quality standards in line with the Total Quality Management by putting customer focus as the goal. Unlike ISO 9001:2008 that was based on quality assurance which is a scientific method of quality improvement.

Nyandarua County as a devolved unit is composed of seven sub-counties. The county is predominantly rural-agriculture, thus the reason the county government of Nyandarua has a slogan of “a land of Milk and Potatoes”. In view of the county Annual Financial Plans for the last five years, 30% of

the total budget, was directed towards infrastructure development. The development included: grading and gravelling of roads, culvert installation, bridge constructions, Early Childhood classrooms construction, Polytechnic Classrooms construction, Hospital and dispensaries construction, County headquarters construction, water line construction among many other projects implemented. Construction project as explained by Githenya & Ngugi(2014), are a mix of complex processes: they further advocate the notion that, construction projects are considered implemented if the work is done on schedule, on budget and achieve the set goals and accepted by the client. In the last five years of devolution Ouko (2017) report, has presented a grey picture of the county expenditure in Nyandarua and a close all the 47 counties in Kenya. Question has been leveled on lack of prudent utilization of the county resource and service delivery. Ouko (2017) in his report of Nyandarua county financial year 2015/2016 he present the following grey picture of development project which compose majority been construction projects:

Nyandarua County Development projects affected were: 18 out of 273 projects were not implemented by end of June 2016 although budgeted and funds allocated for. During Auditing, no reason was provided, for the slow progress in the implementation of the projects; Road projects implemented were not linked to budget and budget figures. Which made him to question whether the project implemented were they budgeted for; Construction of the Youth Polytechnics implementation may take several years according to auditor's evaluation. He eludes these to the manners in which the procurement was done. Which could stall the project, take long to complete, or the money spent on the project already could go to waste. This would result to loss of value for public funds in the projects; Quality of Work at Laikipia-Huhoini-Bidii-Milangine road for road improvement was not done as per the specifications and he comment that no value for money spent in the projects. In certain section, the Auditors observed gravel patching was done instead of complete gravelling; the substandard quality of workmanship was not observed in construction of Heni stadium wall; the construction of the Horticulture pack house, 60% work was done, yet 150% implementation period had elapsed. 50% of the funds had been paid to the supplier of Kshs 24,815,708 from the total cost of kshs 50,175,680. He goes further to question how specifications were altered from the initial Bill of Quantities (BQ) of wooden roofing to steel without proper approvals.

According to (Ethics and Anti-Corruption Commission (EACC), 2015) survey report, County Government's procurement process was found to be 46% corrupt, while roads construction and infrastructure development were 11% corrupt: while, bribes were largest in roads and public works. Since

devolution, services have declined significantly from 26% to worse of 80% unlike in the health sector (Koikai , 2015). Additionally, Korir (2013) found out that 84% of the county employees felt their were no meaningful training to empower them. IPSOS Synovate survey reported by Asamba (2018), reveled that counties priorites are 27 % roads and 21% water that underscore the imprtance to interrogate construction projects and their quality since in more than 51% of all respondents in county related research projects, found faults in the county management of projects; yet, the acceptance of devolution is steadily increasing in constructions projects unlike in other sectors.

Therefore, this study sought to investigate the determinants for adoption of Quality Management System (QMS), on project implementation in Nyandarua County construction projects. The study assessed the County Government's readiness for adoption of QMS based elements like Planning, M&E, Communication, Organization Context and Training, the extent they can resolve construction project implementation challenges. These was to enable the County Governments to reflect on the ISO 9001:2015-based QMS on how appropriate QMS can help to resolve the many local government (County governments) challenges.

1.2 Objectives of the Study

The Study came up with the following Objectives:

1. To examine the extent to which Quality Planning adoption in projects implementation can resolve challenges in construction projects.
2. To explore the significance of Monitoring and Evaluation adoption in Construction project implementation.
3. To assess the innovation level of Organizational Context, to resolve project implementation activities in construction projects.
4. To scrutinize the magnitude to which adoption of Quality Training, can resolve project implementation challenges in construction projects.

1.3 Research Hypotheses

The study was based on the following research hypotheses:

1. H₀₁- Adoption of Quality Planning cannot resolve project implementation challenges in construction projects.

2. H₀₂- Adoption of Monitoring and Evaluation, has no significance in construction project implementation.
3. H₀₃- Innovating Organizational Context cannot resolve challenges of projects implementation activities in construction projects.
4. H₀₄ – Adoption of Quality Training, cannot resolve project implementation challenges in construction projects.

1.4 Research Methodology

1.4.1 Research Design

Research Design according to (University of Southern California (USC), 2018) is a strategy chosen to integrate different components under study in a logical and coherent manner, thus ensuring the study effectively handles the research problem. The study utilized Descriptive survey research design for deriving descriptive correlation and hypothesis testing. Descriptive design provided answers to ‘who, what, when and how’ by providing data like measurement of central tendencies (mean, median, mode, deviance from the mean, variation, percentages and correlation of variables) and measurement of spread (The Association for Educational Communications and Technology (AECT), 2001). While, inferential research design allowed the study to make inferences or predictions from the sample data gathered and analyzed, (Stephanie, 2018). The inferential statistics helped in estimating parameters and hypothesis testing thus eliminating biases, identifying causes and enabling the study to be replicable elsewhere.

1.4.2 Target Population

Target population in a survey include of the whole set of units in which the survey data generated, is to be utilized in making inference and arriving at generalized conclusions, (Encyclopedia of Survey Research Methods, 2008). In this instance, the study targeted 2000 County Government of Nyandarua employees, and 44 County Suppliers to the County Government of Nyandarua, specifically at Ol-Kalou Sub-County as per the approximation of projects implemented since year 2013-2018. The sample size was determined by use of Cochran’s and Yamane’s formula:

Where:

n_o . is the sample size

Z^2 - is the Z-value in the Z table, level of confidence = 1.96

e^2 - is the desired level of precision (i.e. margin of error) = 12%

P - is the estimate proportion of the population which has the attributes under study

The two Strata sample size distribution was: County Employees out of the total population (P) of 2000, the sample size (n) was to be 60 employees; Supplier who were determined by the number of construction projects undertaken in Ol-Kalou Sub-County since inception of devolution year 2013-2017, the total population (P) was 150 and the sample size (n) was 44; The total sample size was 104 respondents.

1.4.3 Data Collection Instruments

The research utilized questionnaires to collect data on opinion, knowledge, and attitudes of respondents in investigating the readiness for adoption of QMS on project implementation. The questionnaire were grouped into sections, each section addressing specific objective of the study. The questions were: opened ended for respondents to provide sufficient information; and closed ended questions, for ease of quantifying the qualitative data generated by the study. The questionnaires were self-administered by the researcher by: Giving the questionnaire to the literate sample size; interview guided questionnaire administration to the illiterate sample and in clarifying questions not fully comprehended by the respondents.

1.4.4 Validity of the Instruments

Validity according to Gakuu & Kidombo (2011) borrowing from the works of Joppe (2000), it is the degree to which the research instrument measure what it claims to measure; how truthful the research result are. Content validity of the instrument will be improved by use of expert judgement. In this instance the use of the reseach supervisor who is an expert in research will validate the instrument. Conctruct validity was carried out to ensure the questions in the questionnaire were clear to be comprehended by respondents and are not vague.

1.4.5 Reliability of the Instruments

Reliability is a way of assessing quality of the research instrument used in data collection to find out if it produces stable and consistent results. There are various reliability techniques to use in assessing for reliability. According to Phelan & Wren (2006), the split-half reliability was used where the researcher randomly split in half all questionnaire items of similar knowledge. The entire test is administered to the sample and the total score for each 'split set' is computed to obtain a split-half reliability via determination of correlation between the two 'split set' scores. The spearman coefficient of correlation was used to compute for the reliability because the split half utilizes dichotomous variables

where the incorrect scores of the instrument is 0 and for the correct score is 1. The formula below was used:

$$RELIABILITY\ OF\ SCORE\ ON\ TOTAL\ TEST = \frac{2 * RELIABILITY\ FOR\ \frac{1}{2}\ TEST}{1 + RELIABILITY\ OF\ \frac{1}{2}\ TEST}$$

Internal consistency was also determined by grouping the question in the instrument that measure same concept (Gakuu & Kidombo, 2011). SPSS was used to calculate Piloted instrument internal reliability by use of Cronbach alpha since the instrument was an attitude instrument using Likert Scale. Equivalent-Form method was used by developing two sets of instrument that measure the same variables. The instruments (Questionnaire) were administered to the Pilot respondents at the same time and completed at the same time. The two instruments were correlated to calculate consistency using Spearman correlation formula.

1.5 Data Collection Procedure

The collection was carried out by self-administration of the structured questionnaire by the researcher to the various levels of the county employees, and suppliers. These generated primary data that was paramount to progress of the study. The use of key informant interview guided questionnaire administration was utilized in accessing the top management of the county and suppliers who had implemented construction projects in Ol-Kalou sub-county. The proposal research sought to acquire permit from the relevant government agencies, and the University of Nairobi. Appointments were done in order to access the key informants to the study. After acquiring the permit and the authorization letter, the researcher first administered the questionnaire to: the county employees mostly those at Ol-Kalou Sub-County; and finally the suppliers who undertook construction projects implementation at the Ol-Kalou Sub-County.

1.6 Data Analysis Techniques

Data analysis was done by use of both descriptive and inferential statistics. The Descriptive statistics yielded measures of central tendencies like mean, median, mode, standard deviation, variance, frequency, percentages and coefficient of correlation. While, inferential statistics measured the parameters, and tested the hypothesis by use of t-Test, MANOVA and ANOVA to show causation in order to develop variables inferences. Use of the Statistical Package for Social Scientist (SPSS) computer

aided programme was used to aid in the data analysis. The primary data was edited and coded for accuracy and completeness thus providing ease of data analysis and SPSS data entry.

The study sought to analyze the demographic composition of the respondents in terms of Gender, Age, Levels of Education and the period of association with the County Government of Nyandarua and given below are the findings;

Table 1: Gender Distribution of the Respondents

Gender distribution of Respondents					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	66	70.2	70.2	70.2
	Female	28	29.8	29.8	100.0
Total		94	100.0	100.0	

The Male Respondents were high at 70.2% than the female respondents at 29.8% in the study. Which is the indication of more men are involved in Projects Implementation than their female counterparts, thus the rule of 1/3 gender rule we can observe it was observed in the study. The study analyzed the respondents' ages and the results are as shown in the table below;

Table 2: Age of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-35	61	64.9	64.9	64.9
	36-50	25	26.6	26.6	91.5
	51-60	7	7.4	7.4	98.9
	60- Above	1	1.1	1.1	100.0
Total		94	100.0	100.0	

Table 2, show that most of the respondents were between the ages of 20-35 years representing a 64.9% of the total respondents, followed by the 36-50 respondents at 26.6%. This translate to most of the County project implementers in the study are middle aged the highest population been the youth. The respondent's age can be attributed to refusal of the illiterate population refusal to answer nor pick the questionnaire. In some instances, the Suppliers Head of Companies, relegated the questionnaire response to the sun-ordinates who were the youth and fresh graduate. The age distribution show that, the County

Governments have tried to employ youthful population though comparison it with the staff data shows the number is too low. Consequently, the older project implementers, show they lack comprehension skills of challenging task and some are involved in management level. The presence of youthful willing population informs that Government need to tailor make organizational orientation skills to young generation, since they are willing to engage in tasks. The low number of older citizens in the study, though they own the companies, shows they lack the literal skills to comprehend new technologies and system. QMS adoption in projects can only then happen if it is geared towards incorporating the youthful population. Respondents' education level was sought and given in the table below are the results;

Table 3: Education Level of the Respondents;

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Masters	15	16.0	16.0	16.0
	Bachelors	50	53.2	53.2	69.1
	Diploma	23	24.5	24.5	93.6
	Certificate	4	4.3	4.3	97.9
	None	2	2.1	2.1	100.0
	Total	94	100.0	100.0	

The study from the table above shows that there were more respondents with Bachelor's Degree at 53.2% while those with Diploma level of education were at 24.5% in the study. This is a relative reflection of the moderately high education levels in Nyandarua County Project Implementation. While those without education were at 2.1% meaning, thus not a significant number to influence the study on adoption but can be influential on project performance and utilization. The education level of the respondents being Bachelor's degree, shows the development of workforce in Kenya and the Counties is becoming more literate, mostly of the new recruits. It is also reflective of the elitism trend among the project implementers, yet the county literate index is low. This reflect a very big variance between the project implementers and the end users of the projects. It then affects project workforce who are the illiterate mass and project sustainability. We then need to interrogate the end user utilization of the projects which leads to vandalism, destruction, and misuse. In general, we can see that the project implementers in Kenya and the County levels are becoming more educated unlike if the same statistics study was conducted in the past. These is then a ready ground to start introducing QMS so as to comply

with international standardization of goods and services. These also informs the critical mass in the country is growing, thus able to question the quality standards of leadership and projects managements that affect the public utilization of funds. The study sought to assess how long the respondents had associated with the County Government of Nyandarua and their responses were as in the table below;

Table 4: Association with County Government of Nyandarua

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-6 Months	7	7.4	7.4	7.4
	6 months - 1 yr	7	7.4	7.4	14.9
	1yr - 2 yrs	16	17.0	17.0	31.9
	2 yrs - 3 yrs	18	19.1	19.1	51.1
	3 yrs- 6yrs	37	39.4	39.4	90.4
	6 yrs -Above	9	9.6	9.6	100.0
Total		94	100.0	100.0	

The study show that most of the respondents have associated with the County Government of Nyandarua for a period of between 3years to 6 year at 39.4%. Given the County governments are now 6 years Old since inception in the year 2013, this a high rate to have conceptualized the county Operations. 49% of the respondents who are almost half of the project implementers have engaged with the county half way. These shows the effect the population of project implementers may have in county decision making since as many who support it, majority do not have conceptualization ability of county functions. These affect the county organizational memory and that affect the manners in which daily policies are designed and implemented. It then influence the political decisions where the affected many understand not, the county operations, yet they make emotive changes like electing and sponsoring new leadership. These compromise on the Quality plans, and project being implemented.

Relating these with the education levels, show County are having a youthful population that is not well capacity built on the county government operation. It then affect the manners in which the decisions made are not well founded and grounded and lack historical justifications. Since they are the literate mass, without corporation with the older citizens, the decisions are rushed and lack quality in their implementation case of youthful elected leaders in the County Assemblies and the Un Educated ones in comparison with the bills presented in the County Assembly, drafted, debated and enacted as By-Law examples of the County Integrated Development Plan (1 &2) and the County Budgets.

The study also aimed at establishing what the status of operation of the Quality Management System in County Government of Nyandarua was and the results were as in table 5 below;

Table 5: Status of Quality Management System in Operation

		Frequenc y	Percent	Valid Percent	Cumulative Percent
Valid	YES	29	30.9	30.9	30.9
	NO	65	69.1	69.1	100.0
Total		94	100.0	100.0	

The 69.1% of the respondents felt there was no Quality Management System in operation at the County Government of Nyandarua. While only 30.9% of the respondents had a contrary opinion.

Table 6: The 30.9% Yes respondents: Sectors or Areas they attributed Quality Management System in Operation

		Frequen cy	Perce nt	Valid Percent	Cumulativ e Percent
Val	Construction	5	5.3	5.3	5.3
id	Service Sector	18	19.1	19.1	24.5
	None	69	73.4	73.4	97.9
	All	2	2.1	2.1	100.0
Total		94	100.0	100.0	

The 30.9% Yes Respondents noted that the QMS is present in the Service Sector at 19.1% in areas like the Health services and Finance department attributed to IFMIS system. Unlike the 5.3% who attributed the Construction sector as having QMS in operation.

Table 7: The 69.1% No Respondents: Sectors or Areas that Lack Quality Management System

		Frequen cy	Perce nt	Valid Percent	Cumulativ e Percent
Val	None	35	37.2	37.2	37.2
id	Construction Sector	21	22.3	22.3	59.6
	Service Sector	18	19.1	19.1	78.7
	All	20	21.3	21.3	100.0
	Total	94	100.0	100.0	

For those who opined that there was no QMS in operation noted that 22.3% of the lack is in construction sector where the main areas were in road works and building works. QMS lack in Service sector at 19.1% was mostly in the procurement and payment of the projects works. There was also the variance between those who never responded to the question and those with Yes. (NONE 37.2- YES 30.9)=6.3%, which translate to those who never responded to the question even having noted there is lack of QMS in operation. The same is reflected in the Yes 30.9% sector with QMS in operation which is: (NONE 73.4 – NO 69.1) = 4% did not indicate their response. Where by 6.3%+4%=10.3% that show the percentage of the respondents who did don't either: understand the question; have no ability to conceptuality what is Quality Management System; or assumed the question.

The status of the QMS present is what Auditor General report has always questioned a close all the counties. With the absence of QMS the projects are poorly done which affect he political climate in most counties, which translate to very few leaders are reelected back to leadership in the Counties. For those who acknowledged the presence of QMS, they were well informed of the duties, functions and responsibilities of various departments in public works and health department. These results imply, the counties have had no quality standards, thus effect on meeting citizenly satisfaction in a more efficient and effective manners. It is then a call for introduction of QMS in the counties. The study sought to understand the satisfaction rates of the respondents with the way the construction projects have been implemented and the quality of the projects.

Table 8: The Quality Management status of County Construction Projects implementation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Satisfied	2	2.1	2.1	2.1
	Satisfied	36	38.3	38.3	40.4
	Dissatisfied	51	54.3	54.3	94.7
	Very Dissatisfied	5	5.3	5.3	100.0
Total		94	100.0	100.0	

The study shows that 59.65% of the respondents were dissatisfied with the manner in which the projects have been management and the quality of the said projects. While 40.4% of the respondents were satisfied with the manner in which the Construction projects have been managed and the quality of implementation works. In the 40.4% they felt they would not underrate their work performance thus not been honest. The 59.65% were dissatisfied by the manner in which projects have been implemented in Nyandarua County. It then justifies the recurrent public demonstrations over poor quality of projects and services a close all counties and lack of strategic solutions to resolve the never ending wars like introduction of QMS in projects and county operations.

The Kenya national government should then aim to ensure citizens satisfaction is meet at the counties by providing legislation on the adoption of QMS. Dissatisfaction leads to anarchy that results to frequent leadership changes due to corruption allegation which undermine consistency thus affecting quality of projects done in terms of project quality, time, plans, leadership and cost.

The study sought to establish if there was a Construction Projects Planning Challenges that affect Project implementation:

Table 9: Construction Project Planning Challenges

	N	Mean	Std. Error	Std. Deviation	Variance	Skewness Statistic	Std. Error
Long Time To Complete Projects	94	4.0106	.10314	.99994	1.000	-1.208	.249
Increased Cost	94	3.7447	.11413	1.10654	1.224	-.886	.249
Duplication Of Project Plans	94	3.5106	.12812	1.24213	1.543	-.541	.249
Lack Scenario Analysis	94	3.3830	.11126	1.07869	1.164	-.452	.249
Lack Of Quality Projects	94	3.3511	.10876	1.05451	1.112	-.243	.249
Lack Of Quality Plan Experts	94	3.3085	.13361	1.29537	1.678	-.203	.249
Valid N (list wise)	94						

The study show that the planning Challenges affect construction projects implementation greatly in the time duration taken to complete the project. Which is mean for Time Duration score ($M=4.0106$, $SD=.99994$) with a variance of 1.00 shows .Planning challenges affect cost of the project since the mean of increased cost is ($M=3.7447$, $SD= 1.10654$). The asymmetry is a normal univariate distribution between (-2 and +2) which is negatively skewed at (-1.208, -.886, -.541, -.452, -.243, -.203) meaning in all the variables outcomes, the means are less than the medians. These is a realization of the counties and the countries projects implementations challenges that have recently made the president of Kenya to demand that no new projects should be started before the old ones are completed. The planning challenges have greatly influenced the presence of ghost projects that are always started and never completed or poorly done. The case of Nyandarua Pack House, the County Assembly chambers, the ministry of lands offices at Ol-Kalou, Vatican Bridge, roads among others can be attributed to poor planning. The usual payment period of most construction projects that are started in December and Paid in June shows presence of poor planning. The report on the high rate of pending Billings supplementary Budgets and high Financial Balance Carried forward are results of challenges in Planning in the Counties and the National Government.

Table 10: Correlation of Planning Challenges and Project Satisfaction

		CPI Planning Challenges	QM Satisfaction In CPI
CPI Planning Challenges	Pearson Correlation	1	.254*
	Sig. (2-tailed)		.014
	N	94	94
QM Satisfaction In CPI	Pearson Correlation	.254*	1
	Sig. (2-tailed)	.014	
	N	94	94

*. Correlation is significant at the 0.05 level (2-tailed).

The correlation between Construction project Implementation Planning challenges ($M=3.5514$, $SD=.79239$) and the Quality Management satisfaction in Construction Project implementation ($M=2.6277$, $SD=.62190$). Pearson r data analysis yielded a positive weak correlation $r = .254$ at , and statistically Significant at $p=.014$ when $\alpha \leq .05$ in a case where $N=94$ respondents were surveyed. This shows that, the implementer's satisfactions levels can be explained by looking at planning challenges. When counties have not planned their operations well, the customers are more dissatisfied. The crisis in the lack of proper planning has seen suppliers issue legal orders to the counties to pay the pending bills of work done and goods delivered, which cost the County Governments in terms of penalties and accumulating interests. It has also resulted to Suppliers Demonstration, and go slow which affect the Time duration taken to complete a project case of Nyandarua Pack House, Pedestrians Sidewalks, County government offices, Ol-Kalou Stadium among others.

Table 11: Adoption of Quality Management System Planning Descriptive Statistics

	N	Mean	Std. Deviation	Std. Error Mean
QMS Planning Adoption	94	4.3638	1.37660	.14199

Mean of Quality Management System Planning score ($M=4.3638$, $SD= 1.3766$) was higher than the than the population normal Quality Management System Planning assumed score of 4.0. Most of the

respondents at ($M=4.3638$) felt that the adoption of the Quality Planning will resolve the challenges in the project implementation.

Table 12: One-Sample Test for Hull Hypothesis Testing

Test Value = 4						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
QMS Planning Adoption	2.562	93	.012	.36383	.0819	.6458

Using the significance level of 0.05, the adoption of QMS Planning was found to be statically significant, lower than the normal adoption of QMS planning score in project implementation, $t(93)=2.562, p=0.012$. There was then the statistical significance between mean at ($p < 0.05$), Thus we reject the null hypothesis ($H_0=$ Adoption of Quality Planning, cannot resolve project implementation challenges in construction projects) and accept the alternative hypothesis ($H_1=$ Quality Planning can resolve the project implementation challenges in construction projects). When projects are well planned in cases of institutions like International Organizations and Multinationals, the projects are implemented on time, at that cost and of quality, without duplication using quality trained experts. These would remedy the counties current challenges and improve on service delivery to the voters as well ensure the elected leaders manifestos are attained.

		CPI Planning Challenges	QMS Planning Adoption
CPI Planning Challenges	Pearson Correlation	1	.242*
	Sig. (2-tailed)		.019
	N	94	94
QMS Planning Adoption	Pearson Correlation	.242*	1
	Sig. (2-tailed)	.019	
	N	94	94

*. Correlation is significant at the 0.05 level (2-tailed).

In a survey of $N=94$ respondents, using Pearson r Data analysis found out that there was a weak positive correlation $r = 0.242$ between the CPI Planning challenges ($M= 3.5514, SD=.79237$) and QMS planning for adoption in Construction Projects Implementation ($M=4.3638, SD=1.37660$) at a statistical

$< .05$

significance of $p = 0.019$ which is lower than α . It then show that the need to have Quality Planning adopted may be explained by the presence of Planning Challenges currently being experienced. These in one among the many factors influencing county project implementer to desire QMS introduction in the county planning. It implies that the challenges in Planning contribute to the majority of the people in Nyandarua to desire a more superior efficient system in which QMS is one such system.

Quality planning is the demission of undertaking planning where no gaps are not addressed. These would ensure project success and better governance in the County Governments with ripple effect to the country greater governance. In cases where government parastatals are ISO certified, the issue of quality planning infusion with mainstream planning mostly in budget making is still a challenge. As such, the ISO certification should not be only for audit and compliance purposes, but geared towards citizenly satisfaction exemplified by what is happening in European states and international organizations.

The study sought to establish the extent in which Monitoring and Evaluation Challenges are experienced in the County Construction Projects Implementation.

Table 13: The Monitoring and Evaluation Descriptive Statistics

	N	Mean	Std.	Std.	Skewness	Std.
	Statistic	Statistic	Error	Statistic	Statistic	Error
Stakeholders Are Not Involved In M&E Projects Not Properly Monitored	94	3.8191	.10798	1.04689	-.662	.249
Lack Of M&E Quality Expert	94	3.6596	.11574	1.12214	-.876	.249
Lack Of M&E Reports	94	3.5106	.12357	1.19807	-.505	.249
Lack Of M&E Reports	94	3.4362	.11771	1.14120	-.261	.249
Valid N (list wise)	94					

The Monitoring and Evaluation is mostly challenging in the stakeholders not being Involved with a score ($M= 3.8191$, $S.D= 1.04689$), followed by realization that most projects are not properly monitored with a score ($M=3.6596$, $S.D= 1.12214$), and the lack of M&E expert with a score ($M=3.5106$, $S.D= 1.19807$). The asymmetry is a normal univariate distribution which is negatively skewed (-.662, -.876, -.505, -.261) meaning in all the variables outcomes the means are less than the medians. This shows County Governments, have poor or lack M&E system while still having M&E departments and allocating substantial funds on the same. It then translate to the reoccurring CPI problems in all the Auditors General’s reports since 2013 to date.

Thus, Decision Making is not founded on facts developed deductively by use of documented information in M&E reports of various indicators and how the imaging indicator challenges were addressed. These consequently, affect the quality of oversight and budget design and implementation, which is evident by lack of substantial developments in most of the Counties after 6 years since inception. These shows M&E is a need conquering with the Ministry of Devolution report, even though their exist a National government M&E system that has not been implemented in the Counties.

Table 14: M&E Adoption Descriptive Statistics Table

	N	Mean	Std. Deviation	Std. Error Mean
QMS M&E If Adopted	94	4.3378	1.24796	.12872

The of Monitoring and Evaluation readiness for Adoption in CPI score ($M=4.3378$, $SD=1.24796$ $n=94$) was higher than the assumed Normal M&E adoption population mean of 4.0.

Table 15: M&E adoption t-Test Null Hypothesis testing table

Test Value = 4						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
QMS M&E If Adopted	2.62	93	.010	.33777	.0822	.5934
	4					

Using the significance level of .05, the adoption of QMS M&E if adopted was found to be statically significant, lower than the normal adoption of QMS M&E score in project implementation,

< .05)

$t(93)=2.624, p=.010$. These was statistical significance between mean at (p , Thus we reject the null hypothesis ($H_0=$ Adoption of Monitoring and Evaluation has no significance in construction projects implementation) and accept the alternative hypothesis ($H_1=$ Adoption of Monitoring and Evaluation in Construction projects implementation will be significant). The results shows M&E can be the solution to CPI challenges. As the Kenyan Government calls for more accountability and transparency in the public funds utilization and tendering process; M&E is one such tool that can drive that agenda. This mitigate on project risks acting as project control mechanism. Providing better measure of project indicators against the project milestone that inform on midterm, short term and strategic developments. Thus providing tracking of County Government’s project cycle which is a challenge in Kenyan Public projects. Descriptive Statics was utilized to assess the variability of means between the assumed variable of organizational context challenges in Nyandarua County Government Construction Projects Implementation activities. The table below shows the results:

Table 16: Organizational Context Challenges in Projects Descriptive Statistics

	N	Mean	Std.	Std.	Skewness	
	Statistic	Statistic	Error	Deviation	Statistic	Std. Error
Ineffective Communication In Projects	94	3.6702	.12690	1.23034	-.722	.249
Difficult To Adopt It In CPI	94	3.6702	.11558	1.12056	-.625	.249
Lack External Support For QMS Adoption	94	3.6170	.09698	.94022	-.823	.249
Lack Internal Support For QMS Adoption	94	3.5000	.10005	.96998	-1.011	.249
Lack County Interested Parties Analysis	94	3.2021	.10323	1.00086	-.354	.249
Valid N (list wise)	94					

He respondents were N=94 in the descriptive statistical analysis. The mean of ineffective communication score was (M=3.6702, SD=1.23034) this a greater hidderance towards building

organizational synergy and chain of command. The mean for Difficulty in Utilizing Information Technology mean score was (M=3.6702, SD= 1.12056) it can well be related by the underdeveloped IT infrastructure in the County. It further can be relatable to the manner in which IT application are utilized in the county, where only two major Enterprise System are used ie IFMIS for procurement and payment of suppliers and PPD for employees salary payments.

The mean for Lack of external support in innovation organizational context mean score (M=3.6170, SD=.94022) which include the National government, donor organization the political class and lobbyist are not supporting Counties towards establishing QMS. While the mean score for Lack of internal environment support in the adoption of OC was (M=3.5000, SD=.96998) translate to the level in which the internal factors like human resource, operation systems and procedures are challenges towards quality OC. And the mean score of lack of the county interested parties analysis was (M=3.2021, SD=1.00086). The asymmetry is a normal univariate distribution which is negatively skewed (-.722, -.625, -.823, -1.011, -.354) translated that in all the variables outcomes the means are less than the medians, which show that more respondents agreed to the presence of the challenges than those who did not. The organization context vary in various County Government though as per the Kenya County Governments Act of 2012, they have same organizational structure. Understanding OC, provide the unique generic problem given County Government faces. The results reflect the challenges in Nyandarua County Government OC.

A correlation analysis was carried out to ascertain the respondents’ opinions on projects management quality in Nyandarua County Government, has a relationship with the County Organizational Context.

Table 17: Organizational Context and the Quality of Project Correlations

		Organizational Context CPI	Mean QM Satisfaction In CPI
Organizational Context CPI Challenges	Pearson Correlation	1	.170
	Sig. (2-tailed)		.101
	N	94	94
QM Satisfaction In CPI	Pearson Correlation	.170	1
	Sig. (2-tailed)	.101	
	N	94	94

The correlation between Construction projects Organizational Context challenges ($M=3.5319$, $SD=.65158$) and the Quality Management satisfaction in Construction Project implementation ($M=2.6277$, $SD=.62190$). Pearson r data analysis yielded a positive weak correlation at $r = .170$, not statistically Significant at $p=.101$ when $\alpha \leq .05$ in a case where $N=94$ respondents were surveyed. These show a relationship that as the OC challenges increases, the dissatisfaction levels increases and opposite is true. To improve on satisfaction levels, the County Governments needs to reengineer the OC for Individual County and for specific projects to derive maximum customs satisfaction in projects cycle.

4.10 Null Hypothesis Testing (Three), Organizational Context to resolve Project Implementation Challenges

The survey was used to test the Null hypothesis which stated that: Innovating Organizational Context, cannot resolve challenges of project implementation activities in construction projects, as shown below:

Table 18: Organization Context Adoption in Project Implementation t-Test

Test Value = 4						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
QMS OC If Adopted	-2.06	93	.042	-.23191	-.4553	-.0086
	2					

The independent sample t-test, show that the mean of Innovating Organizational Context for adoption in Construction Projects Implementation activities with a mean ($M=3.7681$, $SD =1.09045$, $n =94$) is statistically significant at .042 level of significance ($t(93) = -2.062$, $df =93$, $p < .05$) from (test value = 4). The (Mean difference = $-.23191$, 95% CI ($-.4553$, $-.0086$)). The null hypothesis that suggested Innovating Organizational Context cannot resolve project implementation activities in Construction Projects is rejected. These is a true reflection of the need to have Individual County to begin to start innovating their specific environment to suit their specific quality project’s needs. In as far Benchmarking is an important endeavor, the County from this results can only attain quality standards if

they individually reengineer the manner into which their context operate and function towards quality for maximum benefits culminating to county public satisfaction. It would be improper to assume they all have similar outfits while even the economic production, social composition and political environments vary a close all counties. A Descriptive statics was used to assess opines of the respondents on the challenges assumed to be facing Training in Construction projects implementation.

Table 19: Training Challenges in Construction projects implementation Descriptive Statistics

Training Challenges	N Statistic	Mean Statistic	Std. Std. Error	Std. Deviation Statistic	Skewness Statistic	Std. Std. Error
Training On Project Quality	94	2.1277	.11036	3.06996	.655	.249
Employees Training On Quality	94	2.0745	.09230	.89490	.495	.249
On Site Quality Training	94	2.0532	.10627	1.03037	.615	.249
Suppliers Quality Training	94	1.7872	.09904	.96020	1.187	.249
Valid N (list wise)	94					

From the Descriptive statistics table with respondents $N=94$ above; The Training on Projects Quality was ($M=2.1277$, $SD=3.06996$) show the quality is fairly done. The mean score of Employees Training was ($M=2.0745$, $SD=.89490$) that is fairly done. The mean for On-site Training was ($M=2.0532$, $SD=1.03037$) and the mean for Suppliers Quality Training was the lowest at ($M=1.7872$, $SD=.96020$). The asymmetry is a normal univariate distribution which is positively skewed (.655, .495, .615, 1.187) meaning in all the variables outcomes the means are more than the medians, thus the variables score more poorly. With the range between poor and fair reflect the need for capacity building initiatives. It is then not prudent then to have expected change of tactics and exponential growth since the human development towards quality has been neglected for the last five years in the Counties.

These also bears the burden on the quality of material Kenya School of Government (KSG) has been training the county Workforce. Yet, the training budget a close all counties is always high and the World Bank has committed a significant funds to train County Employees Nyandarua County being a pioneer in that program. However, if the training is not reviewed towards quality improvement in projects, we may be recycling same generic problems over time. For seamless operations, counties need to rethink the training on quality and funding for the same, while KSG needs to review its syllabus and content. On suppliers training that is all level poor, the institutions like National Construction Authority

(NCA) should be reviewed on their mandate. If we desire to be developed and improve projects quality, these institutions of certifications need to reengineer the manner in which certification are done and also have mandatory training for suppliers employees a close all counties.

The table below was used to correlate between the two variables to establish if there exist any relationship between the Quality Management of Construction Projects and the Training challenges in the project implementation.

Table 20: Training Challenges and Quality of Projects Correlations

		Training Challenges	QM Satisfaction In CPI
Training Challenges	Pearson Correlation	1	-.448**
	Sig. (2-tailed)		.000
	N	94	94
QM Satisfaction In CPI	Pearson Correlation	-.448**	1
	Sig. (2-tailed)	.000	
	N	94	94

** . Correlation is significant at the 0.01 level (2-tailed).

Ninety Four respondents were surveyed, on the Construction project Implementation Training challenges ($M= 2.0106$, $SD=.83434$) and the Quality Management satisfaction in Construction Project implementation ($M=2.6277$, $SD=.62190$).Pearson r data analysis was used for correlation, a negative

$$r = -.448$$

moderate correlation at was realized and a Statistical Significance of $p= .001$ which is lower than the correlation significance when $\alpha \leq .01$. These depict the lack of civic education, suppliers' county training engagement, customer service desks and employees who have low conceptual understanding of county operations. The satisfaction levels can improve if stakeholders are informed and understand through training, facilitation and public participation initiatives.The study was used to test the Null Hypothesis that, the adoption of Quality Training, cannot resolve project implementation challenges in construction projects. The below table represent the results:

Table 21: Quality Training Adoption and Project Implementation Null Hypothesis t-Test

Test Value = 5						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Quality Training If Adopted	-12.129	93	.000	-.90691	-1.0554	-.7584

The independent sample t-test, show that the mean of Adopting Quality Training to resolve construction project implementation challenges with a mean ($M=4.0931$, $SD =.72492$, $n =94$) is statistically significant ($< .001$)

at .001 level of significance ($t(93) = -12.129$, $df =93$, p from (Test value = 5). The (Mean difference = $-.90691$, 95% CI ($- 1.0554$, $-.7584$)). The null hypothesis that proposed that Adoption of Quality Training, cannot resolve project implementation challenges in Construction projects is rejected. These been the variable with highest score set the precedence that, if we desire to introduce QMS in the counties, we require to first train the stakeholders. With the external support form World Bank and KSG we need more quality oriented training. In other instances, we can legislate on Quality requirements for suppliers to reduce the rate of failed and substandard public and private projects been experienced in the developing states. The results shows that, we are in need of quality training in as far we envision to promote drastic development and transformation of quality county projects. These will address the human variable in projects to ensure compliance to the set standards of all projects.

Table 22: Quality Management System Adoption vs County Government reasons, Multivariate Test

	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Pillai's trace	.284	1.701	16.000	356.000	.045	.071
Wilks' lambda	.735	1.742	16.000	263.372	.039	.074
Hotelling's trace	.334	1.763	16.000	338.000	.035	.077
Roy's largest root	.237	5.282 ^a	4.000	89.000	.001	.192

Each F tests the multivariate effect of County Government Reasons to Introduce Quality Management System. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

Analysis of MANOVA shows, There was no statistically significance between The County Government need to introduce QMS for Quality improvement, Process System Benefits, Financial Benefits, and Public Benefits in projects implementation when considered jointly with the variables of the QMS adoption variables of Quality Planning, Monitoring and Evaluation, Organizational Context and Quality Training, Wilk's $\lambda = .735$, $F(16,263.372)$, $p = .039$, partial $\eta^2 = .074$. In this case we will commit a Type I errors and reject the null Hypothesis given the result of the Projects Quality Management satisfaction levels, the QMS in operation where NO response were majority and the Need for Quality Training with the highest mean. Thus, the respondents could not objectively conceptualize the QMS reasons to be introduced and adopted having not interacted and conceptualized the scientific application meaning of QMS.

Table 23: Quality Management System Adoption vs County Government reasons Univariate Tests

Dependent Variable		Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Quality Planning Adoption	Contrast	5.055	4	1.264	.657	.623	.029
	Error	171.182	89	1.923			
QMS M&E If Adopted	Contrast	5.025	4	1.256	.800	.529	.035
	Error	139.814	89	1.571			
QMS OC If Adopted	Contrast	13.106	4	3.276	2.991	.023	.119
	Error	97.478	89	1.095			
Quality Training If Adopted	Contrast	3.604	4	.901	1.772	.142	.074
	Error	45.269	89	.509			

The F tests the effect of REASON TO INTRODUCE QMS. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

$< .025$

ANOVA was used separately on each dependent variable, with a significant level of α . There was a statistical significance between the QMS Organizational Context and County Government reasons for introducing QMS in Projects Implementation, , $F(4,89)=2.991$, $p = .023$, partial $\eta^2 = .119$. While there was no Statistical significance between the reasons for QMS introduction and the other three variables of Quality Planning $F(4,89) = .623$, $p = .623$, partial $\eta^2 = .029$, Monitoring and Evaluation F

(4,89) =.800, $p = .529$, partial $\eta^2 = .035$ and Quality Training $F(4,89) = 1.772$, $p = .142$, partial $\eta^2 = .074$.

It is then proper to conclude that: the reasons of need to introduce QMS in County Government projects implementation, can be explained by the variable county organizational context.

H₀₆: Benefits of introducing Quality Management System in Construction Projects are not significance to the challenges experienced in the County Construction Projects Implementation

Table 24: Benefit of Quality Management System vs Projects Challenges Multivariate Tests

	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Pillai's trace	.187	.865	20.000	352.000	.633	.047
Wilks' lambda	.823	.855	20.000	282.863	.645	.047
Hotelling's trace	.202	.845	20.000	334.000	.658	.048
Roy's largest root	.103	1.809 ^a	5.000	88.000	.119	.093

Each F tests the multivariate effect of QMS BENEFITS IN CPI WHEN ADOPTED. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

a. The statistic is an upper bound on F that yields a lower bound on the significance level.

Using MANOVA, There was no statistically significance difference between the Benefits of quality management System which included Quality, Time, Bill of Quantity Specifications, service improvement and control in Projects implementation when considered jointly with the variables for Challenges experienced in projects Planning, Monitoring & Evaluation, Organizational Context and Training, Wilk's $\lambda = .823$, $F(20,282.863)$, $p = .645$, partial $\eta^2 = .047$. We accept the Null hypothesis given that, the perceived benefits are not as a result of the Project Implementation Challenges but maybe, can be attributed to other factors like: The 85.1% above one year of interaction with the County Government, making it possible to have realized the need to have Quality Management System. Additionally, the result can also be attributed to the 55.3% of respondents who felt the questionnaire was insight as well as the 31.9% who felt it was a good guide towards QMS introduction in the County Government. This is well elaborated by learning a Spearman's Non parametric correlation analysis were the two factors were

< .05

significant at α . Results are: Non Correlation between the benefits and Period of engagement with the county Government of Nyandarua, Statistically significant at $p= .057$ while Spearman’s correlation coefficient $r_s = .197$ which suggests a positive weak correlation. Moreover, the Quality Management Projects benefit and the respondents exercise general opinion non parametric correlation yielded a statistical significance of $p= .049$ while Spearman’s correlation coefficient $r_s = .203$ which suggest a positive weak correlation on the sample used.

Table 25: Benefit of Quality Management System vs Projects Challenges Univariate Tests

Dependent Variable		Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Planning CPI Challenges	Contrast	3.642	5	.728	1.171	.330	.062
	Error	54.748	88	.622			
M&E Challenges In CPI	Contrast	5.678	5	1.136	1.425	.223	.075
	Error	70.133	88	.797			
Organizational Context CPI Challenges	Contrast	2.221	5	.444	1.049	.394	.056
	Error	37.263	88	.423			
Training In CPI Challenges	Contrast	1.738	5	.348	.485	.786	.027
	Error	63.002	88	.716			

The F tests the effect of QMS BENEFITS IN CPI WHEN ADOPTED. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

< .025

ANOVA was used separately on each dependent variable, with a significant level of α . There was no significance between the Benefits of QMS in Construction Projects Implementation and the Projects Planning Challenges. There was no significance between the QMS benefits if adopted and the projects planning challenges, $F(5,88) = 1.171, p = .330$, partial $\eta^2 = .062$. There was also no significance between the other three challenges variables and QMS benefits associated with QMS when introduced in projects. Monitoring and Evaluation with partial $\eta^2 = .075$ had the strongest effect count on the dependent variable than the other three variables.

The study sought to find out the respondents opinion of the ways they would prefer County to Use in the Introduction and adoption of Quality Management System in Projects Implementation.

Table 26; Ways to Introduce Quality Management System in Projects Implementation Frequency Analysis

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Parallel Approach	10	10.6	10.6	10.6
	Complete Face-Out of Old System	12	12.8	12.8	23.4
	Gradual in Phases	52	55.3	55.3	78.7
	Diffusion	12	12.8	12.8	91.5
	I Don't Know	8	8.5	8.5	100.0
Total		94	100.0	100.0	

The frequency table show that out of the $N=94$ sampled respondents, 55.3% of the respondents felt that the gradual process of introducing Quality Management System would be the most preferred. These most common gradual process been training on the QMS developments. Within the next few years we would experience changes if we aim to transform and adopt QMS in Public projects and private ones. While Diffusion of the QMS with the ongoing process was at 12.8% together with the need to completely face-out the old system and introduce the QMS management system in totality. These means in cooperating elements of QMS in the current system. In other instance, we can nullify the old ways of things and demand all the project implementers to comply with certain procedure for better project implementation. The use of having QMS parallel to the other ongoing processes was 10.6%, is a difficult process but can be utilize where we use certain departments as controlled group vs test group so as to develop unique QMS as per the given County OC.

The study in this section, explored the manner in which the sample respondents would be willing to support the introduction of Quality Management System in Project Implementation.

Table 27: Self Support in the Introduction of Quality Management System Frequency Analysis

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Getting Retrained	25	26.6	26.6	26.6
	Ethical Operation	12	12.8	12.8	39.4
	Quality Services	34	36.2	36.2	75.5
	Quality Products	7	7.4	7.4	83.0
	I Don't Know	16	17.0	17.0	100.0
Total		94	100.0	100.0	

The frequency table of N=94 sampled respondents, show that, 36.2% of the respondents felt that to ensure quality in adhered to in County Government project implementation, they would offer quality services towards project being implemented. Adherence to this, would ensure corruption and poor quality or works is reduced or completely eliminated. While 26.6% willing to and want to get retrained on the Quality Management System. These further shows the QMS basic need in its introduction would be to first train the stakeholders to ensure compliance to quality. 12.8% opined on the need to uphold ethical operation standards and 7.4% were of the opinion to ensure they receive or deliver and request quality products. 17% of the respondents had no opinion on the question given either the questionnaire was too long or they were reluctant to answer or did not understood the question. Which further show the need to inform the stakeholders the meaning and conceptualization of QMS. The Gospel of QMS benefits and procedures need to be advocated where the Counties should be ISO certified and Quality Policy to be internalized by all stakeholders.

1.7 Conclusions

On the first objective, with planning challenges mean of 3.7447, is a true reflection that the County projects implementation are not properly planned where they take longer duration to be completed than projected time. Consequently, the cost of project increases than budgeted for, which justifies Ouko (Report of Auditor General on Financial Statement of County Executive of Nyandarua for the year ending 30 June, 2017) of the effectes of the poor county planning, and financial prudence. While still justifying the Ngacho & Das (2014), the projects need to overcome challenges of quality, time, cost as necessary to projects. The Correlational findings show how poor planning affect project Quality Management by discreasing satisfaction levels, thus reinforcing Pick (2013) linear relationship between planing and project performance how they affect stakeholders atitudes. The need to adopt or introduce Quality Planning for better quality project implementation support Kim, Kang & Hwang (2012) the need to have quality as an objective in CPI and supooort the need to have QMS for future survival (Meissner & Wulf, 2013).

Monitoring and Evaluation challenges underscore the (Ministry of Devvolution 2015 report) counties weaknesses in Kenya where projects are not properly monitored. While dimissifying Waithera & Wanyoike (2015) relationship between Stakeholders and M&E where in this study Stakeholders lack of involvment affected M&E more with a mean of 3.8191. With a moderate positive correlation between the M&E and the Project Quality Management, show that when the projects implementeation is well

conducted, the stakeholders satisfaction levels increases. The testing of relevance of intruding or adopting M&E in project implementation where it was found to be necessary in support of Tullet (1996) importance of M&E reporting , and Kariuki, et al. (2016) importance of M&E reporting for better decision making.

The results show that the county projects implemtation is in need of Quality driven M&E to compliment the other similar effots like projects audity and oversight by county assembly. To ensure ensure projects quality, financial benefits, public proejects benefits and project controls, we need to undertake proper projects implementation M&E as noted by this study and (Gaturu & Muturi, 2014).

The understanding of Organizational Context in these study was key in understanding the generic challenges County Government go through in their unique environment. Communication Challenges in Projects with a mean of 3.6702 was the biggest barrier when it comes to Construction project implementation. Thourhthe need for adopting Quality communication was highly in support of Hussen (2016) on QMS based communication ensures customer fcused startegy, action plans, missions and Project goals. Information Technology was also a challenges mean of 3.6702 while the adotion need was also higher thus reinforcing Adraanse et.al. , (2010) on the need of IT to improve information exchange in project communication.

Cooumication and IT needs in County Government if adopted would improve projects performance as notd by (Dubem & Amaka, 2016). While the Internal and External environment challenges are still theres, both environment are also the drive that the County Governemnts need to support QMS adoption. It thus means the need to redevelop startegy to relate with internal supports like Human resources , and undertaking market intelligence survey to understand , globa trends, suppliers needs and country development agendas supporting (QSG, 2015) analysis and (Foster, 2012).

Trainig challenges were below the standards with Project Quality training needs been fairly done, while the lack of suppliers trainig with mean of 1.7872 was poor . This affected the project quality which when related with the ways to support QMS adoption most repondents felt the need for gradual process55.3% which included training on quality standards towards customers satisfaction. At the same time 26.6% of the respondnets felt their was need to geet retrained on Quality, thus showing the Quality training needs as a main challenge to be addressed in the County Governements. The need to adopt Quality Training with a mean of 4.0931 which was a higher mean than all the other QMS variables, reflect the need-gaps to be addressed in introducing QMS in county Projects Imlementation. The study support Njenga, (2017) results that Quality training will support operational performance in service

sector and construction sectors, at the same time reducing negative perceptions in projects (Khalonyere, 2013). The Quality training adoption is in correlation with Al-Rifai & Amoudi (2016) that, it will enhance suppliers skills. The need for On-site training reinforce Maduma, et al. (2015) to ensure the suppliers employees gain new quality driven skills on the project sites, given the geographical vast areas various projects are implemented in the County Governments.

The determinants for Adoption of Quality Management System in Project Implementation were found to be relevant new system to be introduced by the County Governments. The challenges of Quality projects can be addressed by the variable of Quality Planning, M&E, Innovating Organizational Context and Quality Training to change the current status of things. The need for Quality Training was rated higher than all the other QMS variables. The County Government need to then start retraining their employees on the new quality phenomenon.

The suppliers need also to be trained and given most of them are youthful or have youthful population as employees, it would be prudent to train or demand to get trained and certified on QMS before they bid for County Government tenders. The study need a comparison review and found out that, the project implementation challenges can only be addressed by introducing gradually a superior system than the current status of operation. QMS adoption would then ensure Quality services close all sectors where the key benefits would be having quality projects been implemented by County Government implementers who are employees and suppliers.

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