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## Effects of Total Quality Management Implementation on Electronic-Government in County Government of Kakamega

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### **Abstract:**

Several authors have since defined Electronic-Government in various ways but the keywords include the use of information and communication technologies (ICTs) to facilitate access to and provision of government services to people. The ultimate aim is to improve performance (efficiency, effectiveness, transparency and accountability) of government. The purpose of this study was to examine the effects of Total Quality Management practices in the implementation of Electronic-Government in County Government of Kakamega. The study had the following objective: To examine the levels of TQM practices and implementation of e-Government in County Government of Kakamega. This study was anchored on the conceptual framework that shows interactions of the variables. The study was guided by the descriptive survey design. The researcher employed purposive random sampling techniques to select the Ict Manager, Sub-County administrators, ICT officers and Procurement officers. A census study was used where all the respondents in the target population took part in the study. The reliability of the instruments was tested after conducting a pilot test and Cronbach Alpha Reliability coefficient value computed to determine how items correlated among themselves. The threshold value acceptable in this study was 0.7 and higher. The data collected was analyzed through both descriptive and inferential statistics using a computer programme (SPSS) where Pearson correlation coefficient and Chi Square tests were the statistical tools used. Results indicate that the levels of effects of total quantity management practices and implementation of e-government in County Government of Kakamega has not been well established; some of the TQM practices were being implemented to some good extent in the County Government of Kakamega like top management practices, strategic quality planning, employee management and involvement, customer focus, continuous improvement and innovation, training and education and results indicate that TQM practices had positive and significant effect on the e-Government implementation in County Government of Kakamega. Therefore it was concluded that the levels of effects of TQM practices and implementation of e-government in County Government of Kakamega was low; Some of the TQM practices were being implemented to some good extent in the County Government of Kakamega and that increasing the levels of TQM practices operations in the county could result in improved e-Government implementation. The study made the following recommendations: there is need to create high levels of awareness of TQM practices and e-government instruments in the County Government of Kakamega and that the development of information and communication technologies (ICT) in the County Government of Kakamega should be enhanced by the county investing heavily in this sector The research findings will assist policy makers and stakeholders to gauge stages of e-Government implementation in County Government of Kakamega and effects of TQM practices.

## **1. Introduction**

### *1.1. Background*

Total Quality Management (TQM) is one of the most popular and durable management concepts and it has passed through a number of phases since 1920,s. The roots of TQM go back to the teachings of Drucker, Juran, Deming, Ishikawa, Crosby, Feigenbaum and countless other people that have studied, practiced, and tried to refine the process of organizational management (Waqas, Mahmood and Shahab, 2011). TQM is a collection of principles, techniques, processes, and best practices that over time have been proven effective. In today's businesses there is a growing recognition of the use of TQM in the manufacturing sector that isolated improvements in particular aspects of business are no longer adequate and that a holistic strategy is needed to bring competitive advantage in the market place and this can only be achieved by adaptation of total quality management which is not just concerned with services and process development and customer delivery but also with the relationship with suppliers, customers, commercial and managerial processes and the contribution of all employees no matter where ever they work in the organization.

Over the past two decades, total quality management (TQM) has become most widely used management acronym and is considered as the buzz word in the management practices. It has been well accepted by managers and quality practitioners as a change management quality approach (Arumugam, Chang, Ooi, and Teh, 2009). It plays a vital role in the development of management practices (Prajogo and Sohal, 2003; Hoang, Igel and Laosirihongthong, 2006).

Many researchers asserted TQM as an approach to improve effectiveness, flexibility, and competitiveness of a business to meet customers' requirements (Oakland, 1993), as the source of sustainable competitive advantage for business organizations (Terziovski, 2006), as a source of attaining excellence, creating a right first-time attitude, acquiring efficient business solutions, delighting customers and suppliers (Mohanty and Behera, 1996) and above all as a source of enhancing organizational performance through continuous improvement in organization's activities (Claver-Cortés, Pereira-Moliner, Tarí, and Molina-Azorín, 2008; Teh, Yong, Arumugam, and Ooi, 2009).

The drive for Total Quality Management (TQM) has always been at the top of the agenda of many organizations in both private and public sectors to improve quality, productivity, and competitive position (Hunt, 1992). TQM application in the public sector generates for the most part several successful examples (Dobyns & Crawford-Mason, 1991). Since the 1990's, TQM has begun to spread far beyond the private sector into the public sector as well (Carr & Littman, 1991). Academic research focusing on public productivity has grown significantly during this period and assumes that TQM practices are indeed applicable to government services (Milakovich, 1990). In recent years, the TQM program appears to continue to maintain its strong presence in several public organizations of modern times (Van Seaton, 2010).

Initially, in state and local governments TQM concepts and techniques were used to improve productivity of government programs and projects (Hunter, O'Neill & Wallen, 1987). Since then, several success stories of TQM application in the public sector had been reported (Walters, 1992). In addition, results from a 1993 nationwide survey conducted in U.S. cities with populations between 25,000 and one million (with a 46 per cent response rate) indicated that TQM was on the rise at the city government level (Streib & Poister, 1995). Recently, an empirical case study suggests that TQM is indeed a successful experience in state and local governments due to the fact that it is guided by a leadership commitment and a common organizational vision which results in significant quantifiable benefits (Kluse, 2009).

In the federal government, various productivity improvement programs, particularly those of the U.S. Environmental Protection Agency (Cohen & Brand, 1990) and the Internal Revenue Service (Chen & Sawyers, 1994), coalesced under the TQM banner (Federal TQM Handbook, 1991, 1992). Results from a survey of 2800 federal installations conducted by the U.S. General Accounting Office (GAO) in 1992 indicated that about 1900 respondents (68 percent) said they were involved in TQM efforts (GAO, 1992: 9). This is an encouraging statistic for proponents of TQM. This 68 percent survey result indicated a wide level of support for TQM activities at the federal level.

However, TQM experience at the federal government level reveals a mixed picture over time. A recent study suggests that the U.S. Air Force, an early proponent of the TQM era since the early 1990's, embraced a new "partial quality" endeavor because the "total quality" of the past has been a failure, as they seem to be successful with this new endeavor to avoid the mistakes of the past (Rinehart, 2006). Similarly, the U.S. Navy recently embarked on a new continuous improvement effort due to failed initial TQM efforts in the early 1990's because senior leaders did not "get on board." They are "more serious this time" (Symonds, 2009).

Local government tends to be closer to the citizens it serves than central government, which represents a great chance to test new models of interaction. Thus, developments in the area of ICT represent an opportunity for Local Governments to provide better services, based on more flexible operational processes, at lower costs. By offering 24/7 availability to many services, it also helps to manage demand and supply, contributing to avoid "peaks" (Affisco & Soliman, 2006), thus reducing strain on physical and human resources. Moreover, the possibilities created by e-Government will be regarded as an important instrument to promote citizens' empowerment and improve the quality of democracy (Brewer, Neubauer and Geiselhart, 2006; Moon, 2002).

In fact, the use of ICT can be applied to different forms of relationship between governmental authorities and the citizens they serve: it facilitates the access to information at low cost; it allows the creation of discussion groups (forums) and the collection of feedback through surveys, and; above all, it permits real time interaction between them, thus promoting active citizens' participation. Ultimately, e-democracy enhances transparency and facilitates the implementation of policies due to the process of legitimating the measures which are to be carried out and to the increase of trust on the part of citizens (Brewer *et al.*, 2006). In general, e-Government will thus comprise electronic service delivery, electronic democracy and digital support for policy making and the policy process (Asgarkhani, 2005).

### 1.2. Statement of the Problem

In recent decades, the level of awareness towards TQM has increased drastically and has gone to its peak to become a well-established field of research (Arumugam, Ooi, and Fong, 2008) due to intense global competition, increasing consumer consciousness of quality, rapid technology transfer, and towards achieving world-class status. County governments have been investing considerable resources on information technology solutions and on quality assurance systems it is of great interest to analyze the synergies that might exist between TQM and e-Government will approaches. Findings have revealed that County Governments implementing quality management are indeed ahead of those that do not adopt it, both in terms of the provision of e-services and of the use of e-democracy tools (Mourasa, 2010). This study has been necessitated by poor service delivery, customer dissatisfaction, failure to conform to rules and procedures and goal attainment experienced in the Kakamega County. This explains why the study sought to investigate whether there was a casual link between effects of TQM practices and implementation of e-Government in County Government of Kakamega.

Previous studies have been conducted on the relationships between TQM practices and quality performance (Arumugam *et al.*, 2008; Prajogo and Sohal, 2003; 2004); the impact of TQM practices on quality management (Fotopoulos and Posmas, 2009); Sadikoglu, Zehir (2009) and Brun (2010) investigate the relationship between TQM practices with innovation and employee performance and Yi Sit (2009), Letica (2007), Nair (2006) explains how TQM effects customer satisfaction in the service sector. Though there is considerable literature available that have evolved to examine the link between TQM and e-Government will across the globe (Mourasa, 2010), but still little is known about the effect of TQM practices on e-Government implementation in County Government of Kakamega.

### 1.3. Overall Objective

The study investigated the effects of TQM implementation on e-Government in County Government of Kakamega by focussing on the following TQM practices: Management commitment and leadership, communication, teamwork, training and education and employee management and involvement and how these practices affect e-Government implementation.

Specifically the study endeavored to:

Examine the levels of TQM practices and implementation of e-Government in County Government of Kakamega

### 1.4. Scope of the Study

The study was conducted in County Government of Kakamega and targeted Kakamega County ICT Manager, Sub- County Administrators, ICT Officers and Procurement Officers.

### 1.5. Significance of the Study

The research provides valuable information to explore the relationships between TQM and e-Government will and to develop a conceptual framework and research model of TQM effects and e-Government will implementation in relation to County Governments in Kenya. Therefore, the findings of this research will be helpful to managers, academicians, researchers, project managers in examining the effects of TQM practices and implementation of E-Government in County Government of Kakamega.

## 2. Findings

The objective of this study sought to establish the levels effects of TQM practices and implementation of e-Government in County Government of Kakamega. Several levels of total quality management practices in Kakamega County were analyzed descriptively and the results are presented in the Table 1.

Variables of Measures of Level of Effects of TQM Practices	Mean	Std. Deviation
Organization is flexible in adapting changes arising out of quality improvement program	2.6875	0.01448
Organization adopts customer oriented approach and not product oriented approach in all its activities	2.2500	0.45760
Organization undertakes 100% inspection of the goods before delivery	2.6250	0.20416
Organization undertakes initiatives for continuous improvement of the goods/services produced	2.9375	0.28938
Customer feedback is obtained the end of every transaction	2.8125	0.10868
Award programs are in place for recognizing the efforts of employees in meeting or exceeding quality standards	2.1875	0.98107
Organization is ISO certified	2.0000	0.96609
Organization actively pursues the issue of ISO certification in assuring the employees and customers of the quality standards followed	2.6875	0.25000
Customer's specifications are always met	2.8750	0.14746
Staff is trained on the TQM initiatives and practices	2.4375	0.31498
Staff suggestions are always considered for implementation	2.5333	0.18723
Organizations upgrades itself keeping track of technical innovations	2.4667	0.245946
<b>Overall Mean And Standard Deviation</b>	<b>2.5417</b>	<b>0.34726</b>

Table 1: Level of Effects of TQM Practices

From the results, it was clear that the means and standard deviations were between 2 and 3. For instance organization is flexible in adapting changes arising out of quality improvement program had mean of 2.6875 and standard deviation of 0.01448; organization adopts customer oriented approach and not product oriented approach in all its activities had a mean of 2.25 and standard deviation of 0.45760; organization undertakes 100% inspection of the goods before delivery had a mean of 2.6250 and standard deviation of 0.20416; organization undertakes initiatives for continuous improvement of the goods/services produced had a mean of 2.9375 and standard deviation of 0.28938; award programs are in place for recognizing the efforts of employees in meeting or exceeding quality standards had a mean of 2.1875 and standard deviation of 0.98107. The overall mean from the statistics was 2.5417 and standard deviation of 0.34726. Since the overall mean was between 2 and 3, it can be inferred that the respondents are in agreement with the fact that the levels of effects of total quantity management practices and implementation of e-government in County Government in Kakamega County was still low.

The results illustrated that there was a significant ( $p>0.05$ ) variation in the gender distribution among the respondents since the expected 50% was not attained because there were more males 9(56.3%) than females 7(43.8%) who participated in the study. Therefore, gender equity among the respondents was not achieved in this study. The study results on age brackets of the respondents in Table 4.3 show that, 62.5% of respondents were in the age bracket of 35-47 years, 25% of respondents were in the age bracket of 25-34 years, 6.3% in the age bracket of above 48 years while 6.3% in the age bracket of above between 18-24 years. Results indicated that there was a significant ( $P<0.05$ ) difference in the variation among age groups since the expected uniform distribution across age groups of 20% in each age bracket was not achieved. Study findings indicated that 6.3% of the respondents had worked for one and two years, 6.3% indicated that they have worked for 3 years while 81.3% indicated they had worked for over 4 years. Results on the formal educational levels of respondents in Kakamega County, reveal that there was a significant ( $p<0.05$ ) difference in the levels of education of respondents. Results in Table 4.5 show that 56.3% of respondents had achieved that bachelor's education, 31.3% had diploma education level, and 12.5% had masters' education levels. This shows that most of the respondents (68.8%) had bachelor's degree and above which was very important to the study.

Results on the rate of effects of TQM in the organization indicate that there was an average rate effect of TQM (62.5%). The results in Table 4.19 signpost that the levels of effects of total quantity management practices and implementation of e-government of County Government in Kakamega County has not been well established.

### 3. Discussion

From the results in Table 4.1, there were several TQM practices implemented to some good extent in the County Government of Kakamega. These TQM practices include: top management practices, strategic quality planning, employee management and involvement, customer focus, continuous improvement and innovation, training and education, information and analysis, process management, quality system, teamwork, communication and product service design.

Study findings between the effect of TQM on e-Government implementation were: leadership had 0.764 with  $p<0.05$ . This implies that 76.4% of e-Government implementation was attributed to leadership. Employee management, had an  $r$  value of 0.695 with  $p<0.05$ . This implies that 69.5% of the e-Government implementation was due to employee management initiatives. Generally, the overall mean is 0.6359 with standard deviation of  $p<0.05$ . This means that 63.59% of the e-Government implementation was attributed to TQM practices. On overall, the results therefore, indicate that TQM practices had positive and significant effect on the e-Government implementation in County Governments of Kakamega County ( $r = 0.6359$ ,  $b = 0.3776$ ,  $p<0.05$ ).

#### 3.1. Ways of Enhancing TQM Practices and Implementation of e-Government

The following were the suggestions on how to improve the effects of TQM practices and implementation of e-Government in the County Government of Kakamega County. These suggestions were ranked from the best to the least as shown in Table 2.

Enhancing Effects of TQM Practices and Implementation of e-Government	Percentage	Rank
Training and retraining staff and administration through workshops and seminars	28.0	1
Outsourcing of services	24.5	2
Allocation of enough resources-computers, internet/networking	19.3	3
Establishment of reliable IT structure supported by well grafted policies	9.6	4
Training on TQM practices and e-Government	5.5	5
Seeking alternatives to electricity due to frequent black outs	4.3	6
Provision of scholarships and grants to aid staff with fee problems to further their studies	3.7	7
Both administration and Government to closely monitor implementation of e-Government	2.8	8

Carry out e-readiness assessment to establish the current state of e-Government	2.3	9
<b>Total</b>	<b>100.0</b>	

Table 2: Ways of Enhancing TQM Practices and Implementation of e-Government

Among the suggestions on how to improve the effects of TQM practices and implementation of e-Government was training and retraining staff and administration through workshops and seminars (28%) while outsourcing of services had a score of 24.5%. Allocation of enough resources-computers, internet/networking had a score of 19.3% and this was ranked third. Establishment of reliable IT structure supported by well grafted policies was another suggestion on how to improve TQM practices and implementation of e-Government (9.6%). Allen *et al.* (2001) also noted that one of key prerequisites for implementing e-Government services is to have the necessary infrastructure in place, such as include computer hardware and software, together with reliable telecommunications services for connectivity. To ensure users' easy access to government information online, availability of the infrastructure should be coupled with availability of human resources with necessary skills to collect and organize information. All these require political will and adequate commitments from top government officials for successful e-Government implementation.

The other suggestions were provision of scholarships and grants to aid staff with fee problems to further their studies (3.7%); both administration and Government to closely monitor implementation of e-Government (2.8%) and carrying out e-readiness assessment to establish the current state of e-Government (2.3%). According to Hargittai (2002), Miller (2001), Netchaeva (2002), Nanthikesan (2001), Norris (2001), NTIA (2001) and Sagasti (2001) one of the fundamental issues associated with barriers is the question of access to e-Government services, that is the whole concept of digital divide: the gap between those with full access to electronic information and those without it due to such factors as socio-economic conditions, language barriers, physical situations, age, education, and so on. These are the real challenges to governments because establishment of e-Government services is one issue but access to those services by the intended citizens is another issue altogether, and the former can be easier than the latter.

#### 4. Conclusion

The conclusion of the study derived from the study findings was that:

The levels of effects of total quantity management practices and implementation of e-government in County Government of Kakamega has not been well established. This could be interpreted to mean that there is need to empower employees, enhance customer interaction, teamwork, flexibility, education and training (IT skills).

#### 5. Recommendations

The following recommendations were made based on the findings and the conclusions of the study: There is need to create high levels of awareness of TQM practices and e-government instruments in the County Government of Kakamega. This could increase the levels of effects of effects of total quantity management practices and implementation of e-government.

#### 6. Areas for Further Research

The following suggestions were made after research findings and discussions for they were not adequately underscored:

- A similar study should be conducted in other Counties in the country to ascertain if similar results can be achieved.
- Given that the County Governments are still under one year after they were formed, further research is encouraged a few years later to change on the trend.

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