



ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGY INVESTMENT ON PROJECT PERFORMANCE OF LARGE SUPERMARKETS IN KENYA; A CASE OF NAIROBI COUNTY

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ABSTRACT

The dynamism of the business environment in the current times is posing a challenge to the business making it difficult for the firms in the retail sector in Kenya to have a stable market position. This study was designed to analyze the Role of ICT investment on project performance of large scale supermarkets in Kenya with Nairobi County as the study area. The study was built upon theories of information systems success, Agency cost, Public interest theories of regulation and Weick's Model theory of Organization and reviewing four study variables namely ICT investment cost, ICT Employee competency, ICT policy and government regulations and organization structure. The study was carried out at the 5 major supermarket headquarters in Nairobi. The target population was 389 employees and the sample size of 39 employees was achieved who comprised of the top, middle and low (operational) level management. This study employed a descriptive case study design and used a questionnaire as the research instruments for data collection. The data was analyzed with the help of SPSS version 20 and quantitative data was presented into frequencies, percentages and tables while qualitative data was organized into themes/categories according to the objectives of the study. Findings of the study indicated that independent variables had a great contribution and there was a significant positive relationship between, ICT investment cost, Employee ICT competency, ICT policy and government regulations and organizational structure towards realization of increased project performance in large scale supermarkets in Kenya.

Keywords: ICT, project performance, investment cost, government regulations

INTRODUCTION

ICT Project Management plays a key role in administration of projects in organization today. Various studies have been conducted on the ICT project management to ensure that projects are being conducted accordingly and services are delivered respectively in line with the progress of information technology. The developments of ICT projects have increased in many organizations to ensure that overall needs of customers in business requirements are fulfilled. However, many ICT projects failed to take off such as a series studies (Ashraf, Sarfraz & Mohsin, 2010; Gartner Report, 2011; Liu, Wu & Meng, 2012; Stoica & Brouse, 2012, 2013) produced. Stoica & Brouse (2013) states that due to the ICT project failure and its impact to the organization, researchers and practitioners are asked to specifically look at the history of how the project is carried out to find an effective approach and comprehensive to overcome this issue. Despite of having a lot of standard on project management methodologies in ICT, however up to most ICT project have yet to show a good track record of success (Marchewka 2010; Standish Group Report, 2009).

Growth in global ICT spending over the past three decades has been considerable. Avram outlined in 2001 that global ICT expenditure was growing at a rate faster than worldwide GDP. In 2005, Gwillim, Dovey and Wieder (2005) suggested that global ICT spending exceeds \$1 trillion per annum. According to Agarwal and Lucas (2005), ICT is one of the most important business driving forces of the 21st century. The reasons for this considerable growth can be linked to the increased realization of ICT's importance in

achieving competitive advantage. The significant increase in ICT's scale, complexity, strategic focus, connectivity and processing power in recent years has further heightened awareness of ICT's potential to positively affect an organization's competitive position (Kohli & Sherer, 2002). Information and Communication Technology (ICT) is a multi-trillion dollar industry. It offers potential for significant organizational improvement and competitive advantage. However, ICT investment does not always translate into monetary rewards. According to Powell (2010), ICT investment in organizations has grown considerably throughout the past three decades. By 1998, in the developed world, ICT accounted for more than 50% of organizations annual capital investments and was expected to account for 5% of revenues by 2010 (Powell, 2010). The main driving force behind this large-scale ICT investment is the promise of increased competitive advantage (Hu & Plant, 2001; Piccoli & Ives, 2005), as ICT is regarded as a strategic weapon that can positively affect organizational change (Gregor, Martin, Fernandez, Stern & Vitale, 2006).

Kenya has 110 supermarkets, 8 of which have more than one branch, according to Yellow Pages (2013). Most of these supermarkets are concentrated in Nairobi where they are headquartered. Only the government-linked supermarket, Uchumi is listed in Nairobi Stock for Exchange, while the rest are privately owned and a number such as Nakumatt operate in several East African countries. There are a number of operations that are linked to ICT that are practiced in some of the supermarkets. According to the website, Balancing Act (2013), Uchumi installed an Enterprise Resource Planning system that took a period of 18 months and a cost of over USD 1.2 million for license and an additional USD 2 million for implementation and an annual maintenance cost of USD 150,000. Besides improvement in coordination and communication, there were no immediate benefits noted from this installation. Vendor Managed Inventory (VMI) was also found to have improved stock management, cash flows and risk management in the sampled supermarkets in Nairobi-based supermarkets, according to Irungu and Wanjau (2011). Generally, there is fast development of supermarkets in Kenya, most of which are based in Nairobi. One of the reasons for this is fast development of Kenyan economy which has the second most advanced supermarkets in sub-Saharan Africa (Neven & Reardon, 2003).

Though the Information and Communication Technology (ICT) Sector has been liberalized in Kenya in the last few years which has led to a rapid growth in Technology deployment in the country (Oyelaran-Oyeyinka & Barclay, 2004), past research has established a number of factors that affect ICT acceptance decisions and attitudes (Jungwoo, 2004). This has led to the low density of ICT whereby infrastructure, congestion and costs have been significant impediments of technology usage in Kenya (Oyelaran-Oyeyinka & Barclay, 2004). Inability to identify project costs and benefits, control budget overruns and manage actual achievements against expectations can be associated with failing to formally evaluate the ICT investment. According to Todorova (2006), the importance of evaluation in improving the ICT investment management process is well established.

Despite its early lead in the past decade, Kenya's ICT sector has lagged behind its East African neighbors, Tanzania and Uganda. A key reason for this has been an outmoded regulatory regime and a lack of focus and coordination in addressing ICT challenges and opportunities. The Government of Kenya is committed to removing barriers to ICT development Kohli & Sherer, (2002). To guide and co-ordinate its efforts, the government needs a comprehensive policy driven by the input and commitment of all the groups and sectors who will be responsible for turning the policy into reality. This is a crucial point twice in the recent past, attempts to develop a national ICT policy in Kenya have failed. Besides neglecting to include all public and private sector stakeholders, these earlier processes were not directly linked to other national development plans (Oyelaran-Oyeyinka & Barclay, 2004). Determined to avoid these and other pitfalls, the government asked IDRC to support a consultative, participatory and inclusive process for developing, implementing and assessing the national ICT policy.

In collaboration with the Government of Kenya and Kenyan researchers and organizations, the IDRC team is identifying the social, technological and institutional structures required for successful ICT policy implementation helping develop effective implementation strategies and detailed plans raising ICT awareness through workshops and training for senior Government officials developing indicators for measuring the progress and impact of the policy's implementation and documenting the lessons learned

from Kenya's policy process to help other African countries grappling with similar challenges (Jungwoo, 2004).

Statement of the Problem

The Financial Year ending 2005 was a challenging one for Uchumi Supermarket Ltd. Apart from stagnated economic growth the company's financial performance was below expectations due to several factors. Top among them was that the turnover for the group declined to Ksh 6 billion in the year from Kshs 10 billion in 2004. With the decline in turnover, the loss for the year also increased from Ksh 654 million to Kshs 1.228 billion due to the lower sales volume and lower margins for the year (Uchumi Supermarkets Ltd, 2006). The rise in operational costs was another factor that affected its profitability and this heavily resulted from amortization of ERP/Computerization costs, a higher depreciation charge and a number of one-off costs that included derecognizing of the deferred tax assets. At the time of closure the chain stores owed the banks (KCB & PTA) Kshs 957 million in secured loans, and Shs.900 million to its regular suppliers and landlords, with a gaping Shs.1.1 billion negative on its equity that precipitated the technical insolvency. The insolvency caused Uchumi Supermarkets to close for a month in 2006 but reopened after the Government lent it Ksh675 million and receiving Kshs 300 million from its shareholders.

Empirical Studies done on information and communication technology investment on project performance include Yu and Ramanathan (2008) did a research in UK and found out that out of 41 retail businesses that included supermarkets, 20 had installed high technology in ICT and had achieved significant performance. Gichoya (2005) assessed factors that affected ICT adoption in government administration. This research found out that ICT was beneficial in several areas such as improvement of service delivery to citizens, reduction of cost of operations, transparency, faster decision making, improved access to information and file management system.

Despite the perception of the benefits of ICT in both public and the private sectors, there is a sluggish rate of ICT adoption in the country to achieve performance. Only few studies have been done on supermarkets in Nairobi where ICT is linked to performance. An example is where Vendor Managed Inventory (VMI) technology was found to increase effectiveness in stock management and cash flow management (Irungu & Wanjau, 2011). Besides, the studies have been concentrated on the constraints and assessment of rate of adoption of ICT in the country. The study aims to fill this gap by conducting a research to establish the role of ICT investment on project performance of large scale supermarkets in Kenya.

Objective of the study

The general objective of the study was to establish the role of information and communication technology investment on project performance in large scale supermarkets in Kenya.

The specific objectives of the study were to;

- i. Determine the influence of ICT Investment cost on project performance in large scale supermarkets in Kenya.
- ii. Establish the extent to which the Employee ICT Competency affects project in large scale supermarkets in Kenya.
- iii. Ascertain ICT policy and Government regulations on project performance in large scale supermarkets in Kenya.
- iv. Assess the effect of organizations structure on project performance in large scale supermarkets in Kenya.

Research Questions

The study sought to answer the following questions;

- i. How does ICT investment cost influence project performance in large scale supermarkets in Kenya?
- ii. To what extent does the Employee on ICT competencies affect project performance in large scale supermarkets in Kenya?
- iii. To what extent do ICT Policy and Government Regulations affect project performance In Kenya?
- iv. How does ICT organization structure influence project performance in large scale supermarkets in Kenya?

Theoretical Review

Information Systems Success Theory

Information systems success theory proposes that system quality and information quality affect users' usage of and satisfaction with information systems, further determining project performance (DeLone and McLean, 2004). Service quality was later incorporated into the model. The new model argues that system quality, information quality and service quality affect usage and user satisfaction, further affecting net benefits such as increased knowledge sharing and lower costs (DeLone and McLean, 2004). Since its inception information systems success theory has been widely applied and empirically validated in the contexts of traditional information systems and electronic commerce. Wixom and Todd (2005) noted that information quality and system quality affect data warehousing software users' satisfaction, perceived usefulness, perceived ease of use and usage behavior. Zhang (2010) proposed that both system quality and information quality affect social networking users' satisfaction and sense of community. Song and Zahedi (2007) reported that system quality and information quality affect users' trust in health intermediaries. Lin (2008) noted that system quality and information quality affect virtual community user satisfaction. Chatterjee *et al.* (2009) conducted a qualitative study and found that system quality, content quality and service quality affect the usage of mobile technology in healthcare. Lee *et al.* (2009) found that better information quality increased the usage of mobile data services, whereas lower system quality decreased usage. The information system success theory instigated the first objective in this study to determine the influence of ICT Investment costs on Project performance at large scale supermarkets in Kenya.

Agency Cost Theory

The growth in end-user computing (EUC) in organizations and its implications for the degree of centralization of the information services function have led to the need for a theory that will assist in the management of this process. The agency cost theory describes the development of ICT investment in organizations. The dramatic decline in the costs of hardware and the trend towards the increased power of microcomputers and minicomputers has enabled significant growth in ICT investment. This trend has implications not only for the management of EUC but also for the degree of centralization of the Information Systems (IS) function in organizations. Therefore, there has been increased focus on the organizational issues surrounding EUC, as evidenced by senior IS executives' responses in several recent surveys. The key issues that arise in an agent-theoretic analysis of the management of ICT are an identification of the economic actors and their objectives, an analysis of how these objectives result in conflict, and an analysis of the nature of the resulting organizational costs. These issues must be considered in conjunction with the microeconomic and technological characteristics of the ICT environment to determine the optimal strategies for the management of ICT resources. However, as noted by Eisenhardt (1989), agency theory distinguishes itself from transaction cost theory by its inclusion of the notions of risk aversion and information as a commodity. The agency cost theory instigated the second objective of this study to establish the extent to which the competencies (managerial skills) of ICT employees affect project performance at large scale supermarkets in Kenya.

Public Interest Theories of Regulation

According to the public interest theories, regulation can be explained not only by imperfect competition, unstable market processes and missing markets, but also by the need to prevent or correct undesirable market results. In a competitive market economy, participants in the economic process are rewarded according to their marginal productivity contribution. The first group of regulation theories proceeds from the assumptions of full information, perfect enforcement and benevolent regulators. According to these theories, the regulation of firms or other economic actors contributes to the promotion of the public interest. This public interest can further be described as the best possible allocation of scarce resources for individual and collective goods and services in society. Equalization of prices and marginal costs characterizes equilibrium in a competitive market. If costs are lower than the given market price, a firm will profit from a further expansion of production. If costs are higher than price, a firm will increase its profits by curtailing production until price again equals marginal cost. Market equilibrium, and more generally equilibrium of all markets is thus a situation of an optimal allocation of scarce resources. In this

situation supply equals demand and under the given circumstances can market players do no better. In the earlier development of the public interest theories of regulation, it was assumed that a market failure was a sufficient condition to explain government regulation (Baumol, 1952). But soon the theory was criticized for its Nirwana approach, implying that it assumed that theoretically efficient institutions could be seen to efficiently replace or correct inefficient real world institutions (Demsetz, 1968).the public interest theory of regulation instigated the third research objective to explore ICT policy and regulations on project performance at large scale supermarkets in Kenya

Weick's Model Theory of Organizing

One of the sophisticated theories of organizational structure is Weick's model theory of organizing. It takes into account the high-stressed, fast-paced nature of today's business and reduces equivocality (Patching, 2000). Equivocality boils down to any lack of productivity due to an employee, on any level, having to check with superiors which is brought about by bureaucracy and unaligned organizational structure which greatly affect the management style of the organization (Ashcraft, 2005). In the Weick's model, there is an information system, which includes frequently and sometimes previously tackled issues (Harenstam, Bejerot, Leijon, Scheele & Waldenstrom, 2004). Employees have access to this information and use it to combat any ambivalence or inertia that might hinder making business decisions (Borjas, 2012). The decisiveness gained by using the information system leads to higher productivity due to ease with which structures can be modified to suit the prevailing or anticipated needs. The Weick model theory of organizing instigated the fourth research objective of this study to assess the effect of ICT organization structure on project performance at large scale supermarkets in Kenya.

Conceptual Framework

The dependent variable was the financial performance. An independent variable is the one that influences the dependent variable in either a positive or negative way (Kothari.2003). The conceptual framework is as shown in figure 1 .

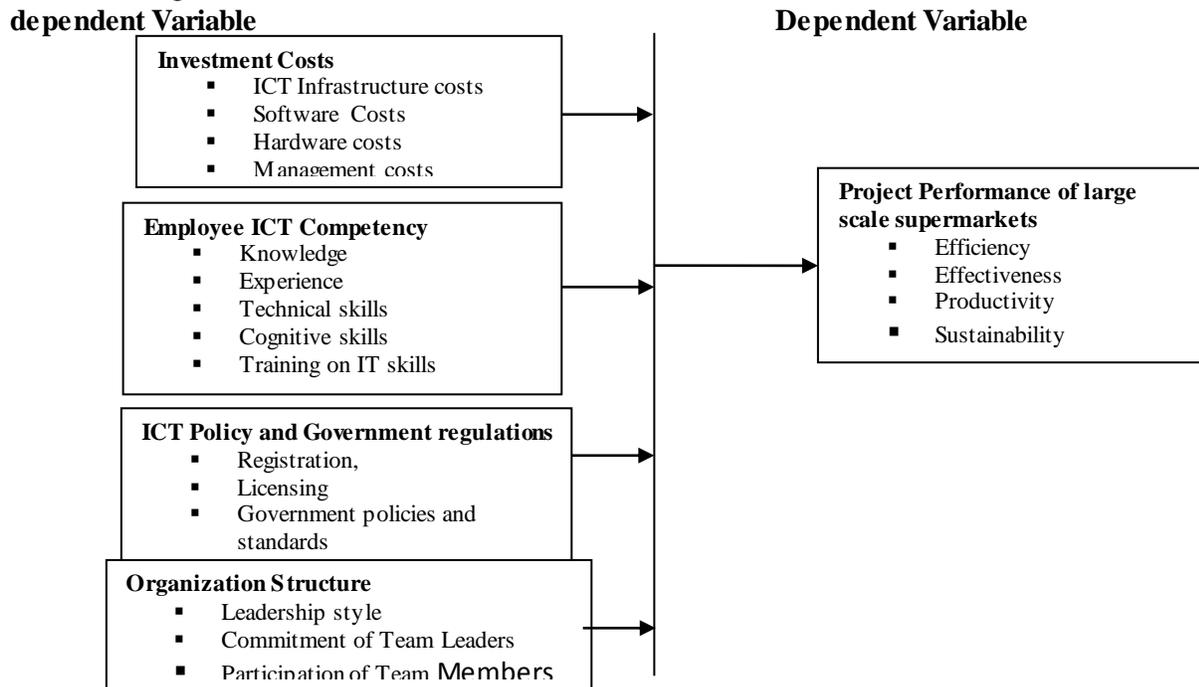


Figure 1: Conceptual framework for the study

RESEARCH METHODOLOGY

A descriptive research design was used in this study. For the purpose of this study, the researcher targeted the 389 management staff. Consultants and Engineers of large scale supermarkets in Kenya (Tuskys Supermarket Limited, Nakumatt Holdings Limited, Ukwala Supermarket Limited, Naivas Supermarket Limited and Uchumi Holdings Limited) operating in Nairobi according to the yellowpageskenya.com (2013). These supermarkets, therefore, formed the target population for this study. The sampling frame was selected large supermarkets in Nairobi County which included: top management, Consultants and Engineers. The study used stratified random sampling procedure to select a sample of 39 respondents that represents the entire population. This information is as shown in Table 1.

Table 2: Target Population and Sample

Supermarket	Population				Sample	
	Staff	Consultants	Engineers	Total Population	Sample (%)	Sample size
Tuskys	102	10	22	134	10	13.40
Ukwala	25	5	5	35	10	3.5
Naivas	28	3	12	43	10	4.3
Uchumi	48	6	13	67	10	6.7
Nakumatt	87	5	18	110	10	11
Total	290	29	70	389	10	38.9

The study utilized quantitative and qualitative questionnaire that was developed for generating information on key variables of interest from the targeted respondents in this study. The research also undertook desk review of existing information about the study areas and collect qualitative data through in-depth interview from respondents who were conversant with the subject through various interactions or experiences. The open-ended questions were used to limit the respondents to given variables in which the researcher was interested, while unstructured questions were used in order to give the respondents room to express their views in a more pragmatic manner (Kothari,2003).

Out of the 39 questionnaires administered to the respondents, 13 of them were partially filled or not returned representing 33.33% while 26 of them were dully filled by respondents and returned giving a response rate of 66.67%.

A pilot study was undertaken on at least 4 respondents to test the reliability and validity of the questionnaire. The rule of thumb is that 10% of the sample should constitute the pilot test (Neumann, 2000). Cronbach alpha is the basic formula for determining the reliability based on internal consistency and standard minimum value of alpha of 0.7 is recommended for item loadings. The constructs used in the study were tested for internal consistency and a value of 0.79 was achieved .This implied the instrument was reliable as emphasized by Malhotra (2004).

The content validity was achieved by subjecting the data collection instruments to an evaluation group of experts who provided their comments and relevance of each item of the instruments. The content validity formula by Amin (2005) was used in this study. The formula was; Content Validity Index = (No. of judges declaring item valid) / (Total no. of items). It is recommended that instruments used in research should have CVI of about 0.78 or higher and three or more experts could be considered evidence of good content validity (Amin, 2005). The validity of test yielded an average index score of 85%. This implied the instrument was valid as emphasized by (Amin,2005).

Before processing the responses, the completed questionnaires were edited for completeness and consistency. Quantitative data that was collected was analyzed with the help of SPSS version 20.The information was displayed by use of bar charts, graphs and pie charts and in prose-form. This was done by tallying up responses, computing percentages of variations in response as well as describing and interpreting the data in line with the study objectives. This study was interested to establish the Role of

ICT investment on project performance with reference to large scale supermarkets. The variables were regressed at 95% level of significance. The regression equation was as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon \quad \text{whereby;}$$

- Y = Project performance of Large scale supermarkets,
- X₁= ICT Investment costs,
- X₂= Employee ICT Competency,
- X₃= ICT policy and government regulations and
- X₄= ICT organization structure;
- β₁, β₂, β₃ and β₄ are coefficients of determination and
- ε =is the error term.

RESULTS AND DISCUSSION

Demographic Information

The study went further to establish the gender of the respondents from the identified area of study. The findings were as shown in Figure 2.

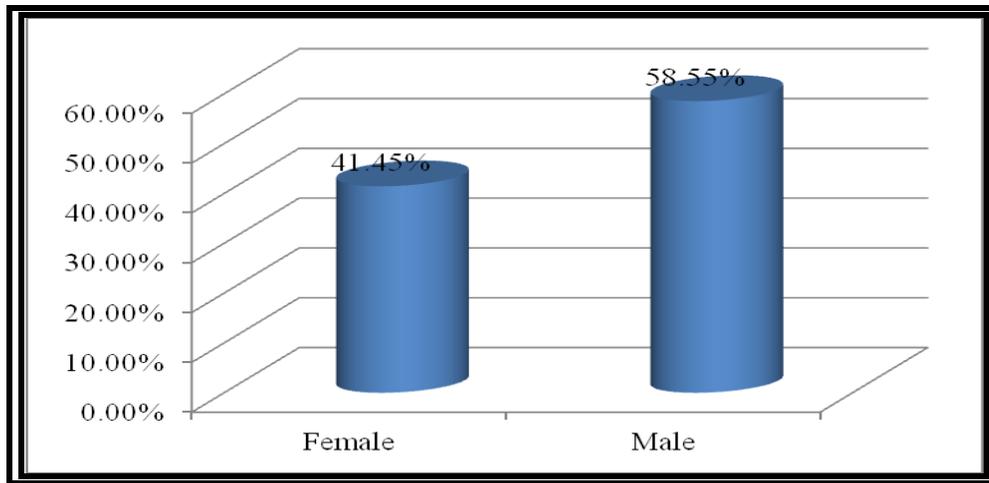


Figure 2. Gender of Respondents

From the results in Figure 2 above, it was found out that 41.45% of the respondents were female and 58.55% were male. This implies that majority of respondents were male who were involved in the ICT on project performance in the supermarkets.

Work experience in Supermarkets

In relation to the Number of years the respondents have been in the large scale supermarkets, the findings indicated that majority (63%) of the respondents have been in the supermarkets for 3 to 5 Years, 26% have been in the organization for 2 years, while the remaining 11% of the respondents have been in the organization for 5 years and above. The findings of study are presented in the Figure 3.

Inferences can therefore be made that over 50% of the respondents had worked in the Supermarkets in Nairobi County for a long time and thus understood technical issues on the role of information and communication technology investment on project performance of large scale Supermarkets in Nairobi County. These findings were in tandem with findings by Braxton (2008) who found out that respondent with a high working experience assist in providing reliable data on the problem in hand since they have technical experience on the study problem.

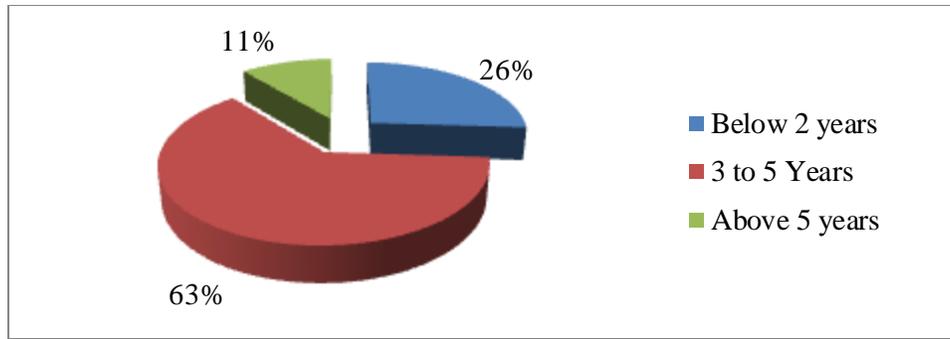


Figure 3; Years of experience

ICT Investment cost

The first objective of the study was to determine the influence of ICT Investment cost on project performance in large scale supermarkets in Kenya.

Extent to Which ICT investment cost affects project performance of supermarkets

The respondents were further asked to indicate the extent to which they ICT investment cost affects project performance of large scale supermarkets The information is as shown in Table 2;

Table 2. Extent to which ICT investment cost affects supermarkets project performance

Extent	Frequency	Percentage
To a very large extent	9	36
To a large extent	6	23
To a moderate extent	5	18
To a small extent	4	14
Not at all	2	9
Total	26	100

From the findings in Table 2 majority of the respondents (36%) indicated ICT investment cost affects organization performance to a very large extent, 23% to a large extent, 18% to a moderate extent, 14% to a small extent and 9% not at all. These findings corroborates with Rukwaro (2013) who observed that implementation of ICT investment cost affects organization performance in many organization have led to good performance in retail operations and development of new products which have in turn increased the performance of retail . The findings collates with Wairagu (2011) who found out that there is no doubt that many supermarkets have embraced ICT investment cost as way to increase efficiency and improve the performance. The study infers that ICT investment cost helps retail supermarkets to develop new products that made it possible for the supermarkets to venture into new market and implement new ICT investment cost in its operation functions hence leading to increased performance.

ICT investment cost issues Influence on the supermarkets project performance

The study aimed to determine the extent to which statements of investment costs issues notably; ICT investment offers potential for significant organizational improvement and competitive advantage, ICT infrastructure cost is an important ingredient of ICT investment cost and that it influences project performance, Software cost is an important ingredient of ICT investment cost and that it influences project project, Hardware cost is an important ingredient of ICT investment cost and that it influences project performance and ICT Management cost is a key factor of ICT investment and that it influences project performance. A scale of 1-5 was used where 1= not at all, 2 = small extent, 3 = moderate extent, 4 = large extent, 5 = very large extent. The findings are as shown in Table 3.

From the findings in Table 3, ICT investment offers potential for significant had a mean score of 4.133, ICT infrastructure cost is an important ingredient(M=4.234); Software cost is an important ingredient of ICT investment cost and that it influences project(M=4.691); Hardware cost is an important ingredient of ICT investment cost and that it influences project performance(M=4.190) and ICT Management cost is a

key factor of ICT investment and that it influences project performance(M=4.309).These findings concurred with Bhavika (2012) that performance of many supermarkets is greatly determined by new

Table 3; ICT investment cost issues influence on the supermarkets project performance

Statement	N	Mean	Std	Variance
ICT investment offers	26	4.133	0.754	0.569
ICT infrastructure cost	26	4.234	0.706	0.499
Software cost	26	4.691	0.74	0.548
Hardware cost	26	4.190	0.862	0.743
ICT Management cost	26	4.309	0.765	0.589

product development, acquisition of new market and implementation of new operation management processes. The findings also corroborates with a study on the elusive nature of delivering benefits from IT investment by Remenyi (2000) found that ICT investment costs, software cost and management cost influence project performance of large scale supermarkets.

Employee ICT competency

The second objective of the study was to establish the extent to which the Employee ICT Competency affects project performance in large scale supermarkets in Kenya.

Extent to which Employee ICT competency affects organization performance

The study sought to determine the extent to which Employee ICT competency affects project performance in large scale supermarkets in Kenya. The findings were as shown in Table 4.

Table 4. Extent to which Employee ICT competency affects project performance in supermarkets

Government Policies	Frequency	Percentage
To a very large extent	7	27
To a large extent	8	32
To a moderate extent	5	18
To a small extent	4	14
Not at all	2	9
Total	26	100

From the findings in table 4.8, majority (32%) indicated that Employee ICT competency affects project performance in supermarkets to a very large extent, 27% to a very large extent, 18% to a moderate extent, 14% to a small extent and 9% not at all. These findings correspond with those by English (2005) who found out that, every employee in the ICT firm needs to be aware of the ICT competency, ICT- security risks as well as the potential consequences of such security breaches which ensures confidence which in the process contributes towards more business. Employee ICT competency entails the behaviors and skills of employees expected to demonstrate to carry out the mission and goals of the organization (UNCTAD, 2011).

Extent of Employee ICT competency and literacy affects project performance supermarkets

The study sought to determine the extent to which factors of Employee ICT competency and literacy notably; Knowledge of ICT employees is a key factor of competency and that it influences project performance, Experience of ICT employees is an important factor of competency and that it influences project performance, ICT employees with Technical skills is a critical factor and that it influences project performance, ICT employees with Cognitive skills is a key competency factor and that it influences project performance, and Training on ICT Skills is a factor that influences project performance. A scale of 1-5 was used where 1= not at all, 2 = small extent, 3 = moderate extent, 4 = large extent, 5 = very large extent. The findings were as shown in table 5.

From the findings in table 5, Knowledge of ICT employees is a key factor of competency and that it influences project performance had a mean score of 4.166, Experience of ICT employees is an important factor of competency and that it influences project performance had a mean score of 4.333, ICT employees with Technical skills is a critical factor and that it influences project performance had a mean

score of 3.928, ICT employees with Cognitive skills is a key competency factor and that it influences project performance had a mean score of 4.452, and Training on ICT Skills is a factor that influences project performance had a mean score of 4.190. These findings concur with findings by Raju (2011) who found out that technological factors such as implementation of effective communication systems, adoption of ICT based organization systems, employment of professional IT staff and existence of effective IT training policy, to a large extent influences performance of many supermarkets. Therefore inferences can be made that Employee ICT competency and literacy factors notably Knowledge of ICT employees, Experience of ICT employees, ICT employees with Technical skills, ICT employees with Cognitive skills, and Training on ICT Skills affects organization performance to a large extent. The results are in line with Prasad (2006) who also noted that ICT factors such as the use of ICT based organizations systems, training of supermarkets staff on IT and technology acceptance by the society has helped many supermarkets to increase on performance.

Table 5. Employee ICT competency and literacy affects project performance of supermarkets

Statement	N	Mean	Std. Deviation	Variance
Knowledge of ICT employees	26	4.166	.8530	.728
Experience of ICT employees	26	4.333	.9016	.813
ICT employees with Technical skills	26	3.928	.8942	.800
ICT employees with Cognitive skills	26	4.452	.7054	.498
Training on ICT Skills	26	4.476	.7404	.548

ICT Policy and Government Regulations

The third objective of the study was to ascertain the ICT policy and Government regulations on project performance in large scale supermarkets in Kenya..

Extent to Which ICT Policy and Government Regulations affects organization performance

The study sought to determine the effect of ICT Policy and Government Regulations on the project performance large scale supermarkets. The study sought to determine the extent to which ICT Policy and Government Regulations influence on project performance of ICT Policy and Government regulations. The findings were as shown in Table 6;

Table 6. Extent to Which ICT Policy and Government Regulations affects organization performance

Extent	Frequency	Percentage
To a very large extent	8	32
To a large extent	6	23
To a moderate extent	5	18
To a small extent	5	18
Not at all	2	9
Total	26	100

From the results in table 6, majority (32%) indicated that ICT Policy and Government Regulations influenced organization performance to a very large extent, 23% to a large extent, 18% to a moderate and small extents, 9% not at all. These findings correspond with those by Mbiti and Wiel (2011) who found out that ICT policy is a key factor that influences project performance.

Extent to which you agree with the following government regulations issues

The study sought to determine the extent to which you agree with the following government regulations issues notably; Registration is an important aspect of government regulations and it influences project performance, licensing a critical factor of government regulations and it influences project performance, and the existence of National ICT Policy and standards influence project performance. A scale of 1-5 was used where 1= not at all, 2 = small extent, 3 = moderate extent, 4 = large extent, 5 = very large extent. As presented in table 7, a mean of 4.357 was scored on Registration, a mean of 4.357 was scored licensing a

critical factor of government regulations, a mean of 4.357 was scored on the existence of National ICT Policy and standards. This demonstrates that all the factors of government

Table 7. Government regulations on project performance of large scale supermarkets

Statement	N	Mean	Std. Deviation	Variance
Registration	26	4.347	.6265	.438
Licensing a critical factor of government regulations	26	4.543	.1016	.813
The existence of National ICT Policy and standards	26	4.234	.6574	.543

regulations to a large extent influence the project performance. These findings were validated by Oliveira and Martins (2011) that government regulations challenges such as change of project regulations, change of political climate affects project operating environment and this has negative impact on project performance. One can therefore infer that that factors of regulations such as Registration, Licensing a critical factor of government regulations and the existence of National ICT Policy and standards to large extent affects project performance of large scale supermarkets.

ICT Organization Structure

The fourth objective of the study was to assess the effect of organizations structure on project performance in large scale supermarkets in Kenya

Extent to which organization structure affects organization performance

The objective was to examine the extent to which organization structure affects project performance of large scale supermarkets in Kenya. The findings were as shown in table 8;

Table 8. Extent to which Organization Structure affects organization performance

Extent	Frequency	Percentage
To a very large extent	9	36
To a large extent	11	41
To a moderate extent	3	12
To a small extent	2	7
Not at all	1	4
Total	26	100

From the findings in table 8, majority (41%) indicated that organization structure affects project performance of large scale supermarkets to a large extent, 36% to very a large extent, 12% to a moderate extent, 7% to a small extent and 4% not at all. These findings were in agreement with Nahod and Radujkovic, (2007) who found that organizational structure factors which influence projects include project manager’s authority, resources availability, control of project’s budget, role of project manager and project management administrative staff. Therefore, it can be concluded that organizational structure is a key factor in organization performance.

Extent to which you agree with the following issues regarding to organization structure

The study sought to determine the extent to which factors of organization structure notably; Leadership style is a major contributor of ICT organization structure and it influences project performance, Commitment of Team Leaders is a critical ingredient of organization structure and it influences project performance, and an organization structure that enables participation of team member’s influences project performance. The study sought to examine the influence of ICT Organization Structure on the performance of organization. Organization structure is the typically hierarchical arrangement of lines of authority, communications, rights and duties of an organization. The findings were as shown in table 9.

Table 9. Organization structure on project performance of large scale of supermarkets

Statement	N	Mean	Std. Deviation	Variance
Leadership style	26	4.023	.8968	.804
Commitment of Team Leaders	26	4.095	.9578	.918
An organization structure that enables participation of team members	26	4.357	.7593	.577

As can be observed from Table 9, Leadership style had a mean score of 4.023, Commitment of Team Leaders had a mean score of 4.095 An organization structure that enables participation of team members. Inference from the findings and existing literature shows that organization structure factors notably; Leadership style, Commitment of Team Leaders, and An organization structure that enables participation of team members influence project performance to a large extent. Organizational structure determines how the roles, power and responsibilities are assigned, controlled, and coordinated, and how information flows between the different levels of management (Milgrom & Roberts, 2000).

Project Performance

The study aimed to establish the key factors that determine project performance.

Project Performance

The study sought to determine the extent to which key factors notably ICT Investment cost, Competency of ICT employees, ICT Policy and Government regulations influenced the project performance. The findings were as shown in Table 10.

Table 10. Project Performance Factors Mean, Std. Deviation and Variance Results

Statement	N	Mean	Std. Deviation	Variance
ICT Investment cost	26	4.523	.7404	.548
Competency of ICT employees	26	4.309	.7152	.512
ICT Policy and Government regulations	26	4.642	.6176	.382

From the findings in table 10, ICT Investment cost had a mean score of 4.523, Competency of ICT employees had a mean score of 4.309 and ICT Policy and Government regulations had a mean score of 4.642. It implies that ICT Investment cost, Competency of ICT employees, ICT Policy and Government regulations to a large extent determines project performance of large scale supermarkets. These findings were in line with those of Drunker (2010) who found out that performance of many large scale supermarkets.

Multiple Linear Regression Analysis

The researcher conducted a multiple regression analysis so as to determine the project performance of large scale supermarkets in Kenya. The researcher applied SPSS version 20 to code, enter and compute the measurements of the multiple regressions for the study. The results are shown in table 11;

Table 11. Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.786 ^a	.618	.343	.655

a. Predictors: (Constant), ICT Investment Cost, Employee ICT Competency, ICT policy and Government Regulations, ICT Organization structure

From the results in Table 11; The coefficient of determination (R^2) explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (project performance of large scale supermarkets in Kenya) that is explained by all four independent variables (ICT Investment Cost, Employee ICT Competency, ICT policy and Government Regulations, ICT Organization structure). According to the four independent variables studied, they explain only 61.80% of the influence on the project performance of large scale supermarkets in Kenya as represented by R^2 . This therefore means that factors not studied in this research contribute 38.20% of the influence. Therefore, a further research should be conducted to investigate the other factors (38.20%) that influence the project performance of large scale supermarkets in Kenya.

Table 11. Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	P-Value.
1	Regression	9.119	4	2.280	47.899	.000
	Residual	1.000	21	.0476		
	Total	10.119	25			

a. Predictors: (Constant), X1, X2, X3, X4

b. Dependent Variable: Y

The reports summary ANOVA and F statistic (47.899) is significant at 0.05 confidence level. The significance value is .000 and the value of F is large enough to F critical and we conclude that the set of independent variables; ICT Investment Cost, Employee ICT Competency, ICT policy and Government Regulations, ICT Organization structure influence the project performance of large scale supermarkets. The table shows that the independent variables statistically significantly predict the dependent variable, $F(4, 21) = 47.899, p < .0005$, this shows that the overall model was significant.

Table 12. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	P values
		B	Std. Error	Beta		
1	(Constant)	7.878	4.483		2.439	.002
	ICT Investment Cost	.554	.108	.002	.535	.004
	ICT Employees	.653	.346	.135	.366	.003
	Government Regulations	.865	.444	.017	.311	.000
	Organizational Structure	.721	.654	.109	.469	.001

a. Dependent Variable: project performance of large scale supermarkets in Kenya.

From the findings in Table 12 it presents the results of the test of beta coefficients which indicates that the significant relationship between independent variables notably; (X_1) ICT Investment cost, (X_2) Competency of ICT employees, (X_3) Government regulations and (X_4) ICT Organization Structure and dependent variables Y =project Performance of large scale supermarkets. As presented in table 4.17, (X_3) ICT Government policy coefficient of 0.865 was found to be positive at significant level of 0.000 and this indicates that ICT government policy has a positive influence on project Performance of large scale supermarkets. (X_2) Competency of ICT employees coefficient of 0.653 was found to be positive at significant level of 0.003 and this indicates that Competency of ICT employees has a positive influence on project Performance of large scale supermarkets. (X_3) Organizational structure coefficient of 0.721 was found to be positive at significant level of 0.001 and this indicates that organizational structure has a positive influence on project Performance of large scale supermarkets. (X_4) ICT investment cost coefficient of 0.554 was found to be positive at significant level of 0.004. This clearly demonstrates that all the independent variables significantly influenced project Performance of large scale supermarkets but the relative importance of each independent variable was different. However, since the significance values were less than 0.005, all the coefficients were significant and thus the regression equation was;

$$Y = 7.878 + 0.554X_1 + 0.653X_2 + 0.865X_3 + 0.721X_4$$

The regression model above has established that taking all the independent variables into account notably; (X_1) ICT Investment cost, (X_2) Competency of ICT employees, (X_3) Government regulations and (X_4) ICT Organization Structure constant at Zero influences project performance (7.878). The results presented also shows that taking all other independent variables at zero, a unit increase in ICT Investment cost leads to a 0.554 increase in project Performance of large scale supermarkets; a unit increase in Competency of ICT employees leads to 0.653 increase in project Performance of large scale supermarkets; a unit increase in Government regulations leads to 0.865 increase in project Performance of large scale supermarkets and a unit increase in ICT Organization Structure leads to 0.721 increase in project Performance of large scale supermarkets. Inferences can therefore be made that ICT government regulations followed by ICT Organization Structure, Competency of ICT employees and investment cost influence project Performance of large scale supermarkets. These findings echoed findings by Oliveira and Martins (2011)

who found out that performance of selected supermarkets in many developing nations is greatly influenced by the ICT Investment cost, Competency of ICT employees, Government regulations and ICT Organization Structure. The study therefore concluded that through improvement of ICT Investment cost, Competency of ICT employees, Government regulations and ICT Organization Structure project Performance of large scale supermarkets would be increased. The findings also collates with Gichoya (2005) assessed factors of ICT adoption in supermarkets which included ICT investment cost, ICI Policy and government regulations, ICT competency and organization structure improved the performance business entities. These factors are the most important business driving forces for performance of supermarkets (Agarwal & Lucas, 2005).

CONCLUSION

The study concludes that ICT Investment cost, Competency of ICT employees, Government regulations and CT Organization Structure influence the project performance in large scale supermarkets in Kenya. The study found out that ICT policy and government policy was the most significant factor followed by organization structure. The employee ICT competency and ICT Investment cost equally played a significant role in influencing project performance in large scale supermarkets. The study also concludes that 61.80% of the project performance in large scale supermarkets was explained by ICT Investment cost, Competency of ICT employees, Government regulations and CT Organization Structure. This means that the other factors not studied in this research contributed 38.20% of project performance of large scale supermarkets. Therefore, the researcher concludes to say that there is need for further research to be conducted to investigate the other factors (38.20%) that influence project performance in large scale supermarkets.

RECOMMENDATIONS

To improve on ICT investment cost and influence realization of increased project performance, the study recommends that the project management should invest in research and development and develop new products that are competitive in the target market. The supermarkets should also venture into new market and re-engineer business processes through business process outsourcing.

To improve on Employee ICT competency the supermarkets should recruit professional trained ICT staff and continuously train them on emerging issues on ICT application. The supermarkets should also improve on ICT policy and train customers on how to use ICT based services such electronic payment services.

To improve on government regulations, the government should enact effective supermarket policies that create a favorable environment for supermarket operations. The government should not enact regulations that interfere with internal supermarket management functions and instead it should collaborate with supermarkets in order to improve on various supermarkets regulations that interfere with project performance. The government should improve on investment policies by giving tax incentives. The study infers that enactment of new supermarkets policies and directives from CAK interfered with supermarkets internal management functions hence making it difficult for supermarkets management to effectively implement various strategies that lead to increased supermarkets performance. Government Regulations entails the general principles by which a government is guided in its management of public affairs, or the legislature in its measures. In this case, it involves retail regulations, political climate, investment policies and CAK directives

To improve on ICT Organization Structure the supermarket management should recruit management staff with effective leadership skills, human resource management skills, technical and conceptual skills, analytical and decision making skills, higher education level on management, higher work experience and effective communication skills. The supermarket should offer better remuneration packages and provide career development opportunities to the staff of selected supermarkets.

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