Volume-3, Issue-2, February-2019: 103-113 P-ISSN: 2659-1561
International Journal of Recent Innovations in Academic Research E-ISSN: 2635-3040

Case Study

The Influence of Firms' Capability on Delivery of Quality Outsourced ICT Services in Kenya: A Case Study of a Public Institution

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Received: Jan 30, 2019 **Accepted:** Feb 6, 2019 **Published:** Feb 10, 2019

Abstract: Aim: The aim of this study was to establish the influence of a firms' capability on delivery of quality outsourced ICT services in Kenyan Public Institutions. This research focused on a case study of a typical public institution with branches in three towns herein coded as town1, town 2 and town 3. It was conducted between the month of May and September 2017. The specific objectives were to examine how the independent variables namely; IT capability, organizational capability and vendor management capability all have on delivery of quality outsourced ICT services in the selected institution. It further looked at the effect of intervening variables such as information sharing, communication quality and collaborative participation and their relationship with both the independent variables and the dependent variable. **Study design:** This study employed a mixed research design constituting both qualitative and quantitative type of research. **Methodology:** A mixed method constituting both qualitative and quantitative research design was used constituting both probability and non-probability sampling methods. The researcher used purposive sampling followed by stratified simple random sampling to select respondents for the study. A sample size of 95 respondents comprising of 22 ICT assistants, 15 ICT officers, 12 senior ICT officers, 9 ICT section leads, 2 ICT trainers, 2 ICT managers, 1 ICT director and 32 members from the management team were selected in line with Yamane's (1967) formula. Questionnaires and interviews were used as data collection instruments. **Research findings:** The research findings revealed that independent variables namely; IT capability, organization capability and vendor management capability contribute to delivery of quality outsourced ICT services. Each of these factors had a positive and significant influence on the dependent variable. The research further revealed that the intervening variables (information sharing, communication quality and collaborative participation) have an influence which is either significant or insignificant on the relationships between independent variables and dependent variable. The findings may be useful to both public and private institutions within the country and beyond in embracing outsourcing of services.
Keywords: ICT, outsourcing, firms' capability, IT capability, organization capability, vendor management.

Introduction

ICT outsourcing involves the use of external service providers to effectively deliver Information Technology (IT)-enabled business process, application service and infrastructure solutions for business outcomes. In Kenya, the major ICT companies that provide outsourced services include Access Kenya, Jamii Telkom and Safaricom Cloud services among others. Examples of the outsourced Information Systems (IS) functions include ICT infrastructure, helpdesk and transaction processing, cloud services including SaaS, IaaS, and PaaS etc.

Institutions/businesses and even governments outsource IT and IT-enabled business processes for a number of reasons. These include but are not limited to the need to lower costs, the need to exploit the technical expertise from the outsourced company(s), the need to mitigate risks, process reengineering, and the opportunity to focus on core capabilities (Ross and Beath, 2006). These are also similar to Gottschalk and Solli-Saether (2006) who argue that outsourcing ICT services help to avoid the potential headaches of managing IT and IT service delivery. They narrate that it is tempting to hand the job over to a company whose provision of outsourced services is its core business. Indeed, outsourcing appears to be a simple solution to managements' frustrations. As a result, senior management teams in many companies have negotiated contracts with large service providers to run their entire IT functions. At a minimum, these providers are often able to provide IT capabilities at a lower cost and with fewer hassles than the outsourcing companies are able to do themselves.

Companies carrying out outsourcing arrangements are currently trying to move away from the traditional way of thinking. The traditional outsourcing arrangement lacked strategic thinking behind it, but entailed the idea of solving a problem, saving some money or improving a function by means of some undefined solutions. The new way of thinking is to make IT outsourcing part of a strategic transformation of the IT function where new tasks and roles are implemented to replace old tasks and roles. The decision to outsource or in source enterprise-wide activities related to the acquisition, deployment, and management of IT represents one of the most complex choices facing firms managements. In-sourcing requires management to commit significant resources to a course of action while forgoing numerous advantages associated with the marketplace. On the one hand, the effects may be too costly to reverse.

For a firm to accumulate resources necessary to generate or maintain a competitive advantage, in-sourcing may be required. The complexity of this decision is demonstrated in research conducted by Leiblein *et al.,* (2002) who examined the relationship between governance choice and technological performance. In contrast to popular arguments they suggested that in-sourcing or outsourcing leads to superior technological performance. They found that decisions on governance per se do not significantly influence technological performance directly; rather, differences in the performance of transactions governed by different organizational forms are driven by factors underlying governance choice. The increasing rapidity of technological change and the increasing dispersion of knowledge suggest an increased role for outsourcing in the economy while the relationship between governance choice and performance is dependent on the distribution of relevant capabilities and the degree to which performance is driven by autonomous or systemic innovation. Furthermore, empirical evidence suggests that carefully crafted outsourcing strategies increase the overall performance of a firm. Outsourcing is generally considered as a very powerful tool for cutting costs and improving performance. Through outsourcing, firms can take advantage of the best external vendors and restructure entrenched departments that are reluctant to change. Outsourcing can also help organization to focus on their core business. Since building core competencies and serving customer needs are critical to a firm's success, anything that detracts from this focus may be considered for outsourcing (Barthélemy, 2003). Successful outsourcing is no different from any other business relationship. It requires nurturing and management so that the needs of all parties are met.

It is critical that both the outsourcer and the service provider of outsourced services understand each other's expectations and dependencies, as well as focus on maintaining a strong communication channel. Regular monitoring and reporting, for example, provide

valuable information on the health of the relationship. Moreover, the organizations needs to consider carefully any risks involved in the outsourcing engagement and perform necessary up-front planning before selecting the vendor (Mosher and Mainquist, 2011).

Statement of the Problem

Outsourcing ICT services has been on the rise in developed as well as developing countries in the world. It entails multi sourcing which is basically outsourcing IT services to a main contractor as well as other ICT vendors. According to the Gartner Group, the worldwide outsourcing market size rose from US$ 21.3 billion in 1997 to US$ 59.6 billion in 2005, with an annual growth rate of 14% (Terdiman, 1993). Currently, the ICT outsourcing market size in public institutions in Kenya is also on the rise. Outsourcing ICT services attract benefits such as: cost effectiveness (which come as a result of a shift from CAPEX to OPEX); quality service that results from the utilization of trained, experienced, qualified and certified professionals; focus on core business; increased efficiency and competitiveness. Kenyan public institutions have not been left behind in outsourcing of ICT services. Some of the services they outsource include: network and internet provision services; network security solutions; ERP solutions; service desk solutions; hardware/software maintenance as well as document imaging and archiving services.

Factors on capability determine a firms' success in an outsourcing arrangement. Han *et al.,* (2008) identifies three capability factors of a firm as having an influence on outsourcing success. These include; the IT capability, organizational relationship capability and vendor management). However, there is a rising need for organizations to exhibit the value gained from this arrangement.

Abdolvand, (2016) and Lee, (2001) studied the effects of human factor on the success of Information Technology (IT) outsourcing and the impact of knowledge sharing, organizational capability and partnership quality on ICT outsourcing success respectively. From their findings, it is clear that the capability of a firm dictates its outsourcing success. It is because of these aspects that the researcher sought to establish the influence of a firms' capability (IT capability, organizational relationship capability and vendor management) on delivery of quality outsourced ICT services in Kenyan Public institutions.

Main objective

The main objective of this research was to examine the influence of a firms' capability on delivery of quality outsourced ICT services in Kenyan Public institutions.

Specific Objectives

1) To determine IT capability and its influence on delivery of quality outsourced ICT services in Kenyan Public institutions.
2) To establish organizational capability and its influence on delivery of quality outsourced ICT services in Kenyan Public institutions.
3) To determine vendor management capability and its influence on delivery of quality outsourced ICT services in Kenyan Public institutions.
4) To establish the influence of information sharing on the relationship between IT capability, organizational relationship, vendor management and quality outsourced ICT services in Kenyan Public institutions.
5) To establish the influence of communication quality on the relationship between IT capability, organizational relationship, vendor management and quality outsourced ICT services in Kenyan Public institutions.

6) To establish the influence of collaborative participation on the relationship between IT capability, organizational relationship, vendor management and quality outsourced ICT in Kenyan Public institutions.
7) To propose a model for establishing the effect of a firm's capability on delivery of quality outsourced ICT services in Kenyan Public institutions.

Significance of the Study

The findings in this study provide a guide on ICT outsourcing for Kenyan Public Institutions, and the influence of firms' capability on delivery of quality outsourced ICT services. This is important since many organizations and businesses have embarked on outsourcing as seen in the increasing market size. It focuses on critical aspects required for the delivery of quality outsourced ICT services.

Methodology

This study was conducted in a Kenyan Public institution with branches in three towns across the country. The study adopted the deductive approach where both mixed method approach was adopted. The target population was 124 respondents and a sample size of 95 respondents were chosen. This represented acceptable sampling error of 5% and confidence level of 95%. These respondents comprised of ICT assistants, ICT officers, ICT trainers, Senior ICT officers, ICT section leads, ICT managers, ICT director and members drawn management. The population was divided into eight different stratas where purposive sampling was used to select respondent-ICT director, while simple random sampling was used to select respondents from the other seven stratas. Data was collected using both questionnaires and interview schedules. Data was analysed using descriptive statistics, correlation analysis and simple regression data analysis models.

Data Analysis, Results and Discussion

This study adopted both qualitative and quantitative methods. The data obtained from the study has been clearly tabulated, analyzed, and presented using SPSS version 21.0 analytical tool. A total of 95 questionnaires were administered and 81 were returned. This represented 85.3% response rate.

Table 1. Number of Questionnaires Issued and Returned

No. of questionnaires issued	No. of questionnaires returned	Response rate (%)
95	81	85.3%

The 81 filled and returned questionnaires were drawn from the three stations. These were 41 of them representing 50.6% were drawn from Town 1 branch. 24 respondents representing 29.6% were drawn from Town 2 branch and finally 16 respondents representing 19.8% were drawn from Town 3 branch.

No.	Responses	Percentage (%)
1	Town 1 (41)	50.6
2	Town 2 (24)	29.6
3	Town 3 (16)	19.8

Three independent variables formed this study. These were IT capability, organisational relationship capability and vendor management capability. It also studied the effect of the intervening variables information sharing, communication quality and collaborative

participation on the relationship between independent variables and the dependent variable (delivery of quality outsourced ICT services). As such, all the metrics used to determine IT capability were as follows: encourage IT standardization; availability of highly integrated IT services; ability to understand IT trends; the existence managerial IT capability; the ability of management to understand the value of IT; the existence of blueprint of IT strategy as well as being able to continuously update of IT strategy. These metrics had a mean of 4.02. The second independent variable was organizational Relationship Capability. The metrics used to measure these were as follows: the use of ICT department's decisions; IT department communicates well with management; IT department and end-users communicate well and the existence of trust between IT and business. These metrics had a mean of 4.25. The third and last independent variable was vendor management capability. The metrics used to measure this were: the existence of formalized processes of selecting vendors; the ability to evaluate IT outsourcing performance; the existence of management processes for ICT outsourcing; the existence of systematic processes to manage contracts and the existence systematic processes to control outsourcing. These metrics had a mean of 4.32. In order to establish the relationships between variables, correlation analysis using the Pearson correlation method was conducted. The test was conducted to establish the relationships between independent variables and dependent variable. It also involved the test to establish the influence of the intervening variables on the same relationships.

The research findings showed that IT Capability, Organizational Capability and Vendor management had strong positive correlation coefficients of (r=.620**, r=.787**and r=.845**) respectively. The intervening variable Communication quality, Information Sharing and Collaborative participation also had strong positive correlation coefficients of (r=.762**, r=.956**and r=.567**) respectively. All the independent and intervening variables had their levels of significance being strong Sig. (2 tailed) of 0.000. This meant that the three independent variables were statistically significant to the delivery of quality outsourced ICT services in Kenyan Public institutions as seen in Table 2 below showing the Pearson correlation analysis.

Table 2. Pearson Correlation Analysis

No.	Variable	Pearson Correlation	Sig. (2-tailed)
1	IT Capability	.620**	.000
2	Organisational Capability	.787**	.000
3	Vendor management	.845**	.000
4	Information Sharing	.956**	.000
5	Communication quality	.762**	.000
6	Collaborative participation	.567**	.000
Source: Researcher, 2017			

A further multiple regression analysis was also conducted to ascertain the causal relationship of independent variables and dependent variable. The rule is always if R-Square (R2) is 1.0 then given the value of one term, you can perfectly predict the value of another term. If R2 is 0.0, then knowing one term does not help to know the other term at all. More generally, a higher value of R-Square means that you can better predict one term from another. The rule of thumb is that, usually an R square of more than 50% is considered as better. Combining the three independent variables (IT capability, Organizational capability and vendor management) contributed 0.721 as represented by R-square. This means that the three independent variables contribute 72.1% to the delivery of quality outsourced ICT services in Kenyan public sector.

The analysis further showed that independent variables were highly significant in contributing to delivery of quality outsourced ICT services at significance level of 0.000 as shown in the Sig. F Change in the Anova and model summary. The regression analysis further showed that there are other factors (27.9%) contributing to delivery of quality outsourced ICT services.

Table 3. Regression analysis

Regression Analysis									
Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.849[a]	.721	.710	.23855	.721	66.412	3	77	**.000**
a. Predictors: (Constant), Vendor management, IT Capability, Organizational Capability; Source: Researcher, 2017									

A further interpretation of ANOVA table results showed that independent variables were statistically significant at .000 percent level of significance to the dependent variable. It was also important to rank these independent variables to know which independent variables contributed to the prediction of the dependent variable–delivery of quality outsourced ICT services in their priority.

Vendor management made the strongest unique contribution of .687 followed by organizational relationship capability at 0.152 and finally IT capability which contributed at 0.034. The researchers were interested in examining the effect of the intervening variables information sharing, communication quality and collaborative participation on the relationships between independent variables and the dependent variable.

To explore whether the three intervening variables (information sharing, communication quality and collaborative participation) statistically significantly moderated the relationships between independent variables and dependent variable, moderated multiple regression was conducted. The following are the results of every moderating variable as shown in tables below.

Table 4. Summary showing moderating effect of intervening variables

No.	**Relationship**	**Intervening variable**	**R Square without intervening variable**	**R Square after introducing intervening variable**	**R Square change**	**Sig. F Change**
1	Relationship between IT capability and delivery of quality outsourced ICT services	Information sharing	.384	.921	53.7%.	.000
2	Relationship between	Information sharing	.620	.938	31.8%.	.000

	organizational relationship and delivery of quality outsourced ICT services					
3	Relationship between vendor management and delivery of quality outsourced ICT services	Information sharing	.714	.956	24.2%.	.000
4	Relationship between IT capability and delivery of quality outsourced ICT services	communication quality	.384	.615	23.1%.	.000
5	Relationship between organizational relationship and delivery of quality outsourced ICT services	communication quality	.620	.647	2.7%.	.015
6	Relationship between vendor management and delivery of quality outsourced ICT services	communication quality	.714	.716	0.2%.	.457
7	Relationship between IT capability and delivery of quality outsourced ICT services	Collaborative Participation	.384	.502	11.8%	.000
8	Relationship between organizational relationship and delivery of quality outsourced ICT services	Collaborative Participation	.620	.698	7.8%	.000

9	Relationship between vendor management and delivery of quality outsourced ICT services	Collaborative Participation	.714	.729	1.5%.	.046

The results from data analysis as shown in the above table shows that information sharing had a significant moderating effect on the relationships between independent variables (IT capability, organisational capability and vendor management) and the dependent variable (delivery of quality outsourced ICT services). Communication quality had a significant moderating effect on only the relationship between IT capability and the dependent variable. Analysis showed insignificant moderating effect of the intervening variable on the relationships between independent variables (organisational capability and vendor management) and the dependent variable (delivery of quality outsourced ICT services). Furthermore, collaborative participation had a significant moderating effect on only the relationships between independent variables (IT capability and organisational capability) and the dependent variable (delivery of quality outsourced ICT services). Analysis showed insignificant moderating effect of the intervening variable on the relationships between independent variables (vendor management) and the dependent variable (delivery of quality outsourced ICT services).

Discussions, Summary, Conclusion and Recommendations

Discussion of the Findings

This study investigated the influence of firms' capability on delivery of quality outsourced ICT services in Kenyan public institutions. The specific components of the firms' capability that this research focused on were; IT capability (management and technical capabilities), organizational relationship capabilities (effective and efficient involvement of IT department) and finally the vendor management capability that involved vendor selection, IT performance, outsourcing management processes and vendor process controls. This study further looked at the moderating effects of communication quality, information sharing and collaborative participation on delivery of quality outsourced ICT services.

IT Capability

IT capability has a positive influence on delivery of quality outsourced ICT services in Kenyan Public Institutions. This variable looked at the technical IT capability (IT standardization, ability to integrate IT and the ability to understand the trend of IT) as well as the Managerial IT capability (ability to integrate functional requirements, ability to leverage IT as strategic core competence, existence of IT strategy that supports the overall business strategy). This variable had a correlation coefficient of .620** and at the significance of 0.000. The standardized Beta Coefficients obtained from performing a regression analysis also showed that IT capability had a coefficient of 0.034. These research findings corroborate the research findings of Han *et al.,* (2008) who established that there existed a significant indirect relationship between IT capability and success of IT outsourcing.

Organizational Relationships

This was the second independent variable. It consisted the ability of management to use IT advice in making decisions, existence of good communication platform between the IS/IT

department and the management, the existence of good communication platform between the end users of IT and IT/IS department and finally the trust between the IT and business departments. The research finding showed that organizational relationship capability had a positive and strong correlation of 0.787 at significance of 0.000 with the delivery of quality outsourced ICT services. The Standardized Beta Coefficients also showed a value of 0.152. These findings were in tandem with the results of Han *et al.,* (2008) who noted that there is a positive strong and indirect relationship between organizational relationship capability and IT success.

Vendor Management

Vendor management was the third independent variable that looked at existence of formalized processes of selecting vendors, evaluation of the performance of IT outsourcing, existence of ICT outsourcing management processes, existence of systematic processes to manage outsourcing contracts with vendors as well as the existence of systematic processes to control outsourcing vendors. The research findings showed that vendor management had the highest correlation coefficient value of .845** and significance of 0.000. The regression analysis further showed a standardized Beta Coefficient of 0.687. This concurs with the finding of Arshad *et al.,* (2008) who notes that the risk of excessive dependence on the outsourcer spurs the need for the vendor management group to improve on the measurement used to determine a vendor's business performance, especially in terms of businesses outcomes and vendor performance. Moreover, the vendor or contractor from the outsourcing organization may be faced with the inability to respond rapidly to changing business needs owing to a lack of experience on the part of the vendor. Han *et al.,* (2008) in their research findings also established that there existed an indirect positive influence of vendor management capability on outsourcing success.

From the results, it is noted that amongst the three independent variables, vendor management was the most influential and having a significant determination on the delivery of quality outsourced ICT services, formalized processes of selecting vendors, evaluation of the performance of IT outsourcing, existence of ICT outsourcing management processes, existence of systematic processes to manage outsourcing contracts with vendors as well as the existence of systematic processes to control outsourcing vendors. This is then followed by organizational capability and coming last according to the research is IT capability. This means that the respondents acknowledge that the key aspect in ICT outsourced environment is the ability to provide and manage vendors effectively and efficiently.

Intervening Variables

This study further looked at the moderating effects of communication quality, information sharing and collaborative participation on delivery of quality outsourced ICT services. Some of these variables also had significant moderating effect on the dependent variable while others did not show any significant moderating effects on the relationships between variables.

Information Sharing

This variable had a significant moderating effect on the relationships between all independent variables (IT capability, organizational relationships and vendor management) on the delivery of quality outsourced ICT services. This is interpreted to mean that all outsourcing organizations in Kenyan public institutions must and should encourage the sharing of each other's own information, sharing business knowledge of core businesses processes, encourage timely provision of information as well as sharing business and technical information between the outsourcing and outsourced company/business.

Communication Quality

This variable had a significant moderating effect on the relationships between IT capability and delivery of quality outsourced ICT services. The results showed non-existence of any significant effect on the relationships between organizational capability as well as vendor management on the dependent variable. These entails timely communication between the organization and vendors, accurate communication between the outsourcing organization and the vendors, complete communication between outsourcing organization and the vendors as well as credible communication between outsourcing organization and the vendors is mandatory in order for the outsourcing organization to exploit full potentialities of the service.

Collaborative Participation

This variable had a significant moderating effect on the relationships between IT capability, organizational relationships and delivery of quality outsourced ICT services. The results also showed non-existence of any significant moderating effect on the relationship between vendor management and the dependent variable. The aspects of collaborative participation included collaborative decision making, collaborative problem solving, willingness to comply with requests and the general cooperation in conducting businesses.

Summary of the Findings

The main objective of this study was to examine the influence of firms' capability on delivery of quality outsourced ICT services in Kenyan public institutions. The study used the variables of Process Theory namely: IT capability, organizational relationships and vendor management forming the independent variables. It further used information sharing, communication quality and collaborative participation as intervening variables. The dependent variable for this study was delivery of quality outsourced ICT services in Kenyan public institutions. The research findings indicated that up to 72.1% of quality outsourced ICT services could be attributed to the combined effects of all the variables that form firms' capability.

The IT capability, organizational relationships and vendor management were all established as having a significant influence on delivery of quality outsourced ICT services. The research further established that information sharing had a significant moderating effect on the relationships between all independent variables and the dependent variable. Communication quality had a significant moderating influence on only the relationship between IT capability and the dependent variable. This variable did not have any influence on the relationships between independent variables organizational relationships, vendor management on delivery of quality outsourced ICT services. Similarly, collaborative participation was the third intervening variable. This variable had a significant moderating influence on the relationships between IT capability and organizational relationships on the delivery of quality outsourced ICT services.

Conclusion

Many public institutions/organizations have moved towards outsourcing some their services from other external parties. This is with the thought of enabling the institutions/businesses/organizations to fully focus on their core business and letting their support services to be delivered by external parties who are deemed to have expertise built over time. However, the research findings have shown that firms' capability has an influence on the delivery of quality outsourced ICT services. It is important for institutions to enhance their IT capability, organizational relationship capability as well as vendor management

capability. The research findings further showed the imperative necessity to build and enhance information sharing, communication and collaborative participation amongst all the stakeholders involved in an outsourcing engagement.

Conflicts of interest: There is no conflict of interest of any kind.

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Citation: Sally L. Kiteme and Agnes N. Wausi. 2019. The Influence of Firms' Capability on Delivery of Quality Outsourced ICT Services in Kenya: A Case Study of a Public Institution. International Journal of Recent Innovations in Academic Research, 3(2): 103-113.