



**INFLUENCE OF TECHNOLOGICAL INFRASTRUCTURE ON STRATEGIC SOURCING PRACTICES ADOPTIONS IN  
DEVOLVED SYSTEM OF GOVERNANCE IN KENYA**

**Mbicho, P. M., & Omwenga, J. Q.**

---

**INFLUENCE OF TECHNOLOGICAL INFRASTRUCTURE ON STRATEGIC SOURCING PRACTICES ADOPTIONS IN DEVOLVED SYSTEM OF GOVERNANCE IN KENYA**

<sup>1</sup> Mbicho, P. M., & <sup>2</sup> Omwenga, J. Q.

<sup>1</sup> MSc candidate, Jomo Kenyatta University of Agriculture and Technology, School of Entrepreneurship, Procurement and Management, Kenya, P.O. Box 62000 - 00200 Nairobi, Kenya

<sup>2</sup> Doctor, Senior Lecturer, Jomo Kenyatta University of Agriculture and Technology, Kenya, P.O. Box 62000 - 00200 Nairobi, Kenya

**Accepted: March 15, 2022**

---

**ABSTRACT**

*The study findings revealed that the effect of ICT infrastructure (technology) in sourcing enhanced procurement performance in County Governments: A case of Kirinyaga County to a large extent. The results of the study showed that electronic sourcing and enhanced procurement performance had a positive and significant relationship. This finding implied that an effective electronic sourcing leads to improvement in enhanced procurement performance in County Governments: A case of Kirinyaga County. A self-designed questionnaire was structured for the study which included closed-ended and open ended questions. Descriptive statistics was used and statistical output was generated using SPSS version 22. Inferential statistics was also used to infer correlation analysis as well as linear regression. The results indicated that infrastructure technology and procurement performance had R of 0.440 and p-value of 0.000 at 95% confidence levels.*

*Keywords: Procurement, Management, ICT Infrastructure, Procurement Performance, Kirinyaga County*

---

**CITATION:** Mbicho, P. M., & Omwenga, J. Q. (2022). Influence of technological infrastructure on strategic sourcing practices adoptions in devolved system of governance in Kenya. *The Strategic Journal of Business & Change Management*, 9 (1), 914 – 922.

---

## INTRODUCTION

Strategic sourcing is broadly described as a process that directs all sourcing activities toward opportunities that enable an organization to achieve its long-term operational and organizational performance goals (Kitavi, Ochieng , & Sang , 2020).It focuses on improving how institutions purchase the goods and services they rely on to remain competitive using strategic sourcing techniques. It is a cost saving measure that can dramatically improve performance by exerting downward pressure on sourcing costs. The value proposition of strategic sourcing is that it enables buying organizations to obtain the highest quality of goods and services needed, with a predictable supply at the lowest total cost (Kim & Chai , 2017). Consequently, increasing research is being done to understand the value of strategic sourcing throughout the world. Despite the significant advancement of research in strategic sourcing, to date, there is limited research conducted in strategic sourcing in developing countries such as Kenya and barely no research in county governments. With citizens increasingly exerting pressure on performance of county government and improvement of procurement practices, there is a need to examine the status of implementation of strategic sourcing activities and their role on procurement performance of these devolved units.

Philippines mobile smart communications known as the daddy of all mobile money in developing countries, created secure platform permitting customer to access a bank account from phone (Moertini, Arthur , Kemit , & Saputro, 2011). In Uganda 25% of sports betting shops were licensed and mobile money was used throughout the day (Yawe & Kizito, 2014) .There's a huge need for strategic sourcing practices solutions in the market. The cost of mailing a check is significantly greater than the cost of making a strategic sourcing practice. Many large enterprises and mid-market enterprises are recognizing that they need to transform how they pay their suppliers. They want effective platforms that allow payments to be made

in a safe and low-cost way as well as provide clear remittance information to the supplier. Suppliers benefit, as well, from gaining much better visibility into the timing of their receipt of funds.

The history of strategic sourcing practices can be traced back to 1918 the time when currency was first moved in United States (US) by the Federal Reserve Bank with aid of telegraph. However, that technology has not been widely used in US until the time when their Automated Clearing House (ACH) was incorporated in 1972. Since from that time, the electronic currency became widespread. This enabled U.S commercial banks and its central treasury with an alternative to cheque payment (Graham, 2013).

The introduction of the outsourcing and strategic sourcing practices has changed the buying process considerably with major benefits including costs savings, reduction in administration costs, enhanced market data and improved responsiveness to change in customer demand and the reduction procurement cycle. With the continuous advancement in technology and the transformation of business dynamics the world has seen an easy accessibility to reliable electronic support services available worldwide with an equal demand in almost all sectors (Shale 2014). Rankin (2006) shows a reduction in the complete procurement cycle time as a result procurement implementation. Panayiotou et al (2004) state that procurement solutions make corporate purchasing activities more efficient and cost effective.

In Kenya, the PPAD Act 2015 sets out instructions on how to conduct procurement for public entities. The Act sets out guidelines for the efficient acquisition and disposal by public entities of unserviceable, obsolete or surplus stores, property and equipment. It also offers for the other related matters including integrity, fairness, transparency, efficiency and increasing the public procurement process. The Act also establishes the Public Procurement Regulatory Authority (PPRA) which is an independent body to oversee and regulate procurement in the public sector. This body ensures

that the procurement procedures established under the Act are complied with, monitor the procurement system, initiate public procurement policy and propose amendments to this Act and to perform such other functions and duties as provided for under this Act. Given the size of public procurement, the Kenyan government decided to initiate reforms through policy, legal and institutional frameworks to enhance transparency, accountability, fairness and competition in the procurement process (Edward, 2011). PPAD Act 2015 lays down the Legal framework which guides public entities in sourcing their supplies. The Act define procurement as acquisition by purchase, rental, lease, hire, license, tenancy, franchise or by any other means any type of work, assets, services or goods including livestock or any combination. It also establishes procedures for the efficient public procurement and disposal of unserviceable, obsolete or surplus stores, assets and equipment.

The PPAD Act 2015, also sets thresholds which guide the procurement methods in public entities i.e. when to use international open tenders, national open tender, restricted tenders, request for proposal, direct procurement or request for quotation. The Act treats every purchase as a discrete transaction subjected to competitive bidding and therefore it fails to address other benefits that could be accrued if public entities categorize their spending and involve suppliers from early stages of purchase. Government procurement is long and bureaucratic. In order for devolved system to be efficient and remain competitive, it needs to exercise sourcing practices that will make it compete competitively with private institution who have less bureaucratic procurement process for the quality supplies at the right quantity, at the right price, time and delivered at the right place. Sourcing strategically can be crucial for devolved system to obtain or sustain its competitiveness in the marketplace.

Devolution in Kenya is the mainstay of the Constitution and tries to carry government closer to the people, with area governments at the Center of

scattering political force and financial assets to Kenyans at the grassroots. The declaration of the Constitution of Kenya 2010 denoted a significant achievement in the manner the nation is represented. It stipulated the dispersal of political force and monetary assets from the Center in Nairobi to the grassroots in a procedure known as devolution. Subsequently. 47 county governments and the Senate were set up following the March 4, 2013, General Election as a feature of the execution of devolution. With this, Kenya ended up at ground zero from pre-freedom days when a type of devolution, at that point known as Majimbo, was presented briefly in 1962 however rejected not long after autonomy. Majimbo came following extraordinary political fights between two freedom parties — Kenya African National Union (KANU) and Kenya African Democratic Union (KADU) — as they arranged the autonomy Constitution in Lancaster.

Sitting at the foothills of Mount Kenya, Kirinyaga County, some 112km from Nairobi, Kirinyaga County covers 1479.09 square kilometres. Kirinyaga borders Embu to the east, Machakos to the south, Murang'a to south west and Nyeri to the west. The county is named after Mount Kenya, which was originally known as Kirinyaga, meaning the crest of whiteness, synonymous with its snow-capped peaks. Kirinyaga County comprises of four constituencies: Mwea, Gichugu, Ndia and Kirinyaga Central.

Agriculture is Kirinyaga's main economic activity, with over 70% of residents being small scale farmers. Others are business people, teachers, civil servants working in government institutions and those who work for the various tea, coffee and rice factories. The county's leading farming industries include coffee, tea, rice, horticulture, dairy farming, maize and beans. Fish farming is being practiced lately with many farmers now creating space for fish ponds. The urban centers are well served by government hospitals, health centers and dispensaries. There are several private and mission health facilities in different towns.

## Objectives of the Study

The objective of this study was to establish the influence of technological infrastructure on strategic sourcing practices adoptions in devolved system of governance in Kenya.

## LITERATURE REVIEW

### Technology Acceptance Model (TAM)

This hypothesis was favored over the Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM) Davis (1989), proposed when a client is given another innovation, various components impact their choice with respect to how and when to utilize it. Manuelli et al., (2007), described advancement as saw value and saw convenience as being broadly utilized inside the appropriation approach that expands on TAM.

Forman and Goldfarb (2006) have demonstrated TAM to be hearty model that is as often as possible used to consider acknowledgment of Information Communication Technology (ICT). Cap is seen as Information framework hypothesis which assists with understanding the selection and utilization of re-appropriating (Gibbs et al., 2007). The hypothesis assists with seeing how adopters come to acknowledge or dismiss the utilization of ICT in their organizations. Be that as it may, Manuelli et al., 2007 censured TAM as less thorough contrasted with the dissemination approach which has more development qualities including time as a basic component of the hypothesis (Gibbs et al., 2007; Rogers, 1995). That was additionally scrutinized for not representing impact and individual control factors on conduct, including the absence of thought to different factors, for example, outside impact from contenders Manuelli et al., 2007. Hypothesis Reasoned Action (TRA) model which is broader than TAM, incorporates four general ideas to be specific; social mentality, abstract standards, goal to utilize and real use (Cloete 2006).

### Network Theory

System hypothesis is the center on the connections a firm has with different firms, and on how these connections impact a company's conduct and

results (Thorelli, 1986). System hypothesis illuminate on decision of which firms an association decides to purchase from or connect with as union accomplices. Centrality is a key idea inside system hypothesis. Centrality alludes to how basic a firm is inside a system. High matchless quality alludes to a firm that is constantly searched out as an accomplice. Such firms appreciate high respect and status among the system (Gulati et al., 2000). Being focal inside a system would appear to offer the possibility to improve the four key serious needs inside inventory chains: quality, speed, cost, and adaptability (Hult et al., 2006). A profoundly focal firm can tap its tight connections so as to surge orders when required, make consistent advances after some time and search out the supplier offering the best materials and least costs. Along these lines, concerning sourcing, a firm should attempt to be integral to its system and should look for sources that are key to their systems.

The system hypothesis considers the mind boggling cooperations of frameworks that can be spoken to graphically with additional structures. It centers around the connections among firms and how these cooperations influence the association's practices and results. Be that as it may, points out the decisions to exchange with or align themselves with as accomplices. Centrality is the manner by which fundamental a firm is inside the system. A firm with a higher centrality is exceptionally alluring as an associate. Being in the middle inside a framework offers four prime stresses inside stock chains: speed, quality, cost, and flexibility. A central firm can misuse its relationship with flood orders when the need arises, recognize the provider offering the most raised quality materials in any event cost and make spread advances up time. In this way, undoubtedly, a firm should make a solid effort to be vital to its system and should look for sources that are key to their systems. (Gulati et... al, 2000, Thorelli, 1986, Hult et... al, 2006)

### Empirical Review

Strategic sourcing practices are no exception; an unsecured strategic sourcing practices system may

not get trust from its users. Trust is very critical to ensure acceptance from users. According to (Gardachew, 2010) , strategic sourcing practices applications represent a security challenge as they highly depend on critical ICT that create vulnerabilities in financial institutions, businesses and potentially harm customers. “It is imperative for banks to understand and address security concerns in order to leverage the potential of ICTs in delivering e-banking applications” (Gardachew, 2010). For effective and efficient procurement in an organization, there must be an efficient strategic sourcing practices system with a guaranteed security features to protect the users and promote its usage in the transaction of business activities such as procurement.

Infrastructure is necessary for the successful implementation of strategic sourcing practices. Proper Infrastructure for strategic sourcing practices is a challenge (Taddesse & Kidan, 2005). For strategic sourcing practices to be successful there is the need to have reliable and cost-effective infrastructure that can be accessed by majority of the population. Strategic sourcing practices communication infrastructure includes computer network such as the outsourcing and mobile network used for mobile phone. In addition, banking activities and operations need to be automated. A network that links banks and other financial institutions for clearing and payment confirmation is a pre-requisite for strategic sourcing practices (Taddesse & Kidan, 2005).

Mobile network and Outsourcing are readily available in the developed world and users usually do not have problems with communication infrastructure. However, in Africa mobile networks and outsourcing are not easily accessible. “Poor communication infrastructure is one of the reasons that hinder the strategic sourcing practices system in Africa” (Taddesse & Kidan, 2005). According to (Gardachew, 2010) low level of outsourcing penetration and poorly developed telecommunication infrastructure impede smooth development and improvements in e-commerce in

Ethiopia. Both consumers and business enterprises have limited knowledge of what services exist, how they operate and what benefits to be derived. Due to high level of illiteracy, most of the people do not recognize the economic importance of electronic governance payments. Most Kenyans especially the aged, lack the skills and knowledge required to ensure efficient and effective use of the system (Ngereza & Iravo, 2013).

## **METHODOLOGY**

This study adopted both descriptive and qualitative research designs. The descriptive design was preferred because the questions raised in the study required collecting data through administration of questionnaires from the respondents and was effective since the study involved quite a large population. A descriptive study was appropriate since it contributed towards minimizing bias and optimizing on the reliability of data.

Validity is concerned with whether the findings are really about what they appear to be about (Saunders et al, 2009). It is concerned with how accurate data obtained in the study represents the variables of the study. For a data collection instrument to be considered valid, the content selected and included must be relevant to the need or gap established. Before the actual study, the questionnaire was discussed by the supervisor. Validity is the accuracy and meaningfulness of inferences which is based on the results.

The researcher used the Cronbach’s Alpha to assess internal consistency reliability for the five-point Likert scale items with 0.7 and above being the cut-off point or acceptable range. The goal of this was to design a reliable instrument for scores on similar items to be related, but for each to contribute some unique information as well.

## **ANALYSIS AND RESULTS**

This study derived the results from descriptive analysis, inferential statistics and hypothesis testing.

## Chi-square

The chi-square is used to test the main hypothesis. The chi-square is a statistical test that focuses on measuring the comparison expected to be observed in the data variables. This analysis involves the distribution of statistical data obtained in the research (Wagner & W, 2011). It is aimed at fitting the test for an independent variable based on the sampled data that represents the whole population.

Independent chi-square test is based on the question that shows relationship between independent and dependent variables in the research (Perin). The chi-square test is in a degree of freedom utilised in the determination of the null hypothesis. It rejects or accepts the null hypothesis based on the total population of the variables, as shown in Table 1 below.

**Table 1: Chi-square of testing the formulated hypotheses**

|                              | Value                | df  | Asymp. Sig. (2-sided) |
|------------------------------|----------------------|-----|-----------------------|
| Pearson Chi-Square           | 198.905 <sup>a</sup> | 150 | .005                  |
| Likelihood Ratio             | 102.460              | 150 | .999                  |
| Linear-by-Linear Association | .333                 | 1   | .564                  |
| N of Valid Cases             | 1026                 |     |                       |

Pearson's chi-square value obtained in this analysis was 0.005 and a likelihood ratio of 0.99 with a linear association of 0.564. The value of the Pearson's chi-square is less than the standard significant value of 0.5; this value rejects the null hypothesis to accept the alternative hypothesis. From the chi-square test, the alternative hypothesis is accepted that there are significant statistics the role of sourcing practices on procurement performance in devolved government of Kenya because of legal regulatory employment, employees' competence, top management support, and technological infrastructure. The chi-square was used to control the rival hypothesis by testing the formulated hypotheses (Bhattacharyya, 2009) The hypothesis is formulated based on the approach to determine the roles of sourcing practices on procurement performance in devolved government of Kenya.

The rival hypothesis in this case, the alternative hypothesis is adopted in the research phenomenon as the results shows the role of sourcing practices on procurement performance in devolved government of Kenya. The roles of sourcing practices on procurement performance in devolved government of Kenya were on legal regulatory employment, employees' competence, top

management support, and technological infrastructure (Fieldhouse, Green, Evans, & Mellon, 2021). The study approaches the address on the uncertainty of the phenomenon. In this research, there is limited literature regarding the phenomenon and the intention to define the nature of the problem. The design may not satisfy the research, and in such cases, the case study may be applied, as done by (C, Henning, & Sankaran, 2016), based on the intention of investigating the roles of sourcing practices on procurement performance in devolved government of Kenya.

## Correlations Analysis

The bivariate correlation of Pearson between variables is based on the statistical analysis the produces a correlation on the sample coefficient that is used to determine the direction and strength of the linear relationship between the continuous variables identified in the research. The correlational relationship between the variables was defined, as shown in Table 2 below. The bivariate correlation was based on the variables and their relation to the phenomenon in this study.

**Table 2: Correlation**

|                              |                     | Legal regulatory employment | Employees' competence | Top management support | Education level (summary) | Technological infrastructure |
|------------------------------|---------------------|-----------------------------|-----------------------|------------------------|---------------------------|------------------------------|
| Legal regulatory employment  | Pearson Correlation | 1                           | -.002                 | -.018                  | .009                      | .000                         |
|                              | Sig. (2-tailed)     |                             | .913                  | .564                   | .631                      | .996                         |
|                              | N                   | 3130                        | 3130                  | 1026                   | 2999                      | 1675                         |
| Employees' competence        | Pearson Correlation | -.002                       | 1                     | .006                   | -.018                     | -.017                        |
|                              | Sig. (2-tailed)     | .913                        |                       | .847                   | .260                      | .423                         |
|                              | N                   | 3130                        | 3946                  | 1187                   | 3768                      | 2096                         |
| Top management support       | Pearson Correlation | -.018                       | .006                  | 1                      | -.019                     | .079**                       |
|                              | Sig. (2-tailed)     | .564                        | .847                  |                        | .522                      | .009                         |
|                              | N                   | 1026                        | 1187                  | 1187                   | 1161                      | 1086                         |
| Education level (summary)    | Pearson Correlation | .009                        | -.018                 | -.019                  | 1                         | .075**                       |
|                              | Sig. (2-tailed)     | .631                        | .260                  | .522                   |                           | .001                         |
|                              | N                   | 2999                        | 3768                  | 1161                   | 3768                      | 2047                         |
| Technological infrastructure | Pearson Correlation | .000                        | -.017                 | .079**                 | .075**                    | 1                            |
|                              | Sig. (2-tailed)     | .996                        | .423                  | .009                   | .001                      |                              |
|                              | N                   | 1675                        | 2096                  | 1086                   | 2047                      | 2096                         |

The Pearson's correlation coefficient in analysis evaluates the available evidence based on the linear statistical relationship on the variables in the study (C W. , 2019). Correlation height and weight for the pairwise changes' analysis-based coefficient and linear relationship *p*-value are less than 0.1 showing a positive relationship between the variables, meaning they correlate positively. It shows that legal regulatory employment, employees' competence, top management support, and technological infrastructure are roles of sourcing practices on procurement performance in devolved government of Kenya.

**CONCLUSIONS AND RECOMMENDATIONS**

The research study was based on an investigation into the role of strategic sourcing practices on procurement performance in devolved system of governance in Kenya. It was intended to analyze how legal and regulatory environment, employee's

competency, top management support, and technological infrastructure as part of strategic sourcing practices affect procurement performance in devolved system of governance in Kirinyaga County, Kenya.

Based on the findings of this study, it could be concluded that devolved systems of government in Kenya have adopted strategic sourcing practices in procurement through the automation of procurement operation procedures in order to enhance smooth work flow (speed and efficiency of operations). Also, it could be concluded that devolved systems of government largely complied and adhered to existing procurement laws and regulations which in turn help in boosting the confidence levels of suppliers as well as avoiding loss of public finds. Likewise, the study concludes that Devolved systems of government largely enjoys the support of their top management in the



execution of their work and this helps boost the morale of the staffs and consequently enhance the performance of procurement. Finally, the study concludes that employee competency was a great contributor to the increased performance of the procurement function within the county government of Kirinyaga.

Based on the findings, the study recommended that devolved systems of government should adopt strategic sourcing in procurement system and automate all procurement operation procedures to enhance smooth work flow and hence improve efficiency. The study further recommends that Devolved systems of government should adopt strategic sourcing practices in procurement for various uses such as in the standardization of services for representation in the catalog, sourcing goods and services globally, as way of reducing costs in areas such tendering processes, payment and contract management. But management should be aware and cautious that procurement is capital intensive in terms of acquisition and laying down the required infrastructure and highly perishable. Thus, the study recommends that strategic procurement practice should be implemented within the legal framework of public

procurement acts and regulations because its moderation has positive correlation with the performance of Devolved systems of government in Kenya. The findings are in harmony with technology acceptance model which suggest that emerging technologies cannot improve organizational effectiveness and performance if the change has not been accepted by the users. Therefore, first it's crucial for the users to accept the new technology (procurement) so as to reduce administrative costs, possible broadening of suppliers' base, and easy access to preferred goods. In conclusion technology acceptance model can be used by future scholars.

#### **Scope for Further Studies**

There is need that future scholars undertake studies to establish other strategic sourcing practices that influence the performance of procurement in other county governments. This study only focused on legal and regulatory environment, employee competence, top management support and ICT infrastructure (technology) as parameters affecting procurement performance of the county government of Kirinyaga. Thus, it is important for further study to be conducted to examine other variables that contribute to the performance of procurement in other county governments.

#### **REFERENCES**

- Akbarian, R., & Vakili, T. (2011). Evaluation of factors affecting strategic sourcing practices systems by customers,. *the first regional conference on new approaches in computer engineering and information technology*.
- Antwi, Hamza, K., & Bavoh, S. (2015). Examining the Effectiveness of Strategic sourcing practices System in Ghana: The Case of e-ZWICH in the Tamale Metropolis. *Research Journal of Finance and Accounting*, 6(2), 163-177.
- Bhattacharyya. (2009). Research methodology. New Delhi: Excel Books India. *Research design: qualitative, quantitative, and mixed methods approaches*.
- C, E. M., Henning, P., & Sankaran, S. (2016). A guide to systems research: philosophy, processes, and practice. *springer*.
- C, W. (2019). Learn about partial correlation in SPSS with data from Fisher's Iris dataset (1936). *SAGE*.
- Fieldhouse, Green, E., Evans, G., & Mellon, J. (2021). Post-Election Random Probability Survey. *Springer*.
- Gardachew, W. (2010). Electronic-Banking in Ethiopia- Practices, Opportunities and Challenges. *Journal of Internet Banking and Commerce*, 8.

- Kim, M., & Chai, S. (2017). The impact of supplier innovativeness, information sharing and strategic sourcing on improving supply chain agility. *Global supply chain perspective. International Journal of Production Economics*, 42-52.
- Kitavi, G. W., Ochieng, V., & Sang, W. (2020). Effects of strategic procurement practices on performance of county governments in Kenya. A case of Machakos County Government. *The Strategic Journal of Business & Change Management*, 7(3), 1096-1111.
- Moertini, V., Arthur, H., Kemit, N., & Saputro, N. (2011). The Development of Strategic sourcing practices System for Universities in Indonesia. *International Journal of Computer Science & Information Technology (IJCSIT)*, 16-33.
- Ngereza, K. A., & Iravo, A. (2013). Challenges influencing implementation of strategic sourcing practices: A case study of Kenya Airways Company. *International Journal of Social Sciences and Entrepreneurship*, 509-520.
- Perin, M. (n.d.). Principles of planning, evaluation, and research for health care programs. Boston. *Jones & Bartlett Learning*, 2020.
- R, A., & T, V. (2011). Evaluation of factors affecting strategic sourcing practices systems by customers. *the first regional conference on new approaches in computer engineering and information technology*.
- Richard, K., Ojino, D. J., & Ayoo, P. N. (2019). Effects of Strategic Sourcing On Organizational Performance: A Case of Acacia Premier Hotel, Kisumu. *An overview and guidelines. Journal of Business Research*, 104.
- Wagner, & W, E. (2011). Using IBM SPSS statistics for social statistics and research methods.
- Wanjiku. (2019). Effect of strategic procurement practices on organizational performance in public organizations A case of Kenya school of revenue administration.
- Yawe, B. L., & Kizito, S. (2014). Gambling and mobile banking money payments : A case study of Sports betting in Uganda. *Business and Management Sciences*.
- William. (2007). *The Logical Thinking Process: A system Approach to complex problem solving*, Milwaukee, WI: ASQ Quality.