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Sourcing Strategies and Organizational Performance of Muranga  
Co-operative Creameries Kenya



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## Sourcing Strategies and Organizational Performance of Muranga Co-Operative Creameries Kenya



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### Abstract

**Purpose:** The general objective of this study was to establish the influence of sourcing strategies on organizational performance of Murang'a Co-operative Creameries in Kenya. Specifically, the study sought to establish the influence of single sourcing strategy, multiple sourcing strategy, delegated sourcing strategy and parallel sourcing strategy on organizational performance of Murang'a Co-operative Creameries in Kenya. The theories anchoring the study comprised of Agency theory, Network Theory and Systems Theory.

**Methodology:** This study utilized a descriptive research design. The target population comprised of Murang'a Co-operative Creameries where the units of observation comprised of employees from human resource department, quality assurance department, production department, maintenance department, sales department and accounts, finance department in Muranga Co-operative Creameries. A total of 76 employees were targeted in the study. Primary data was utilized in the study and collected using semi structured questionnaire that were administered by drop and pick methods. The research used a mixed approach to data analysis. Descriptive analysis involved use of measure of central tendency and standard deviation as a measure of dispersion. Inferential statistics comprised of both correlation and regression analysis. Statistical Package for Social Sciences (SPSS) version 24.0 was used to generate the statistics. The results of the study were presented in form of tables and figures.

**Findings:** The study established that single sourcing strategy, multiple sourcing strategy, delegated sourcing strategy and parallel sourcing strategy bears a positive and significant influence on organizational performance of Murang'a Co-operative Creameries in Kenya. This is shown by beta values of 0.216, 0.549, 0.406 and 0.315 and significant values of 0.011, 0.000, 0.000 and 0.003 respectively. The results implies that increasing the independent variables with one unit results to increase in the levels of organizational performance of Murang'a Co-operative Creameries with the respective beta units.

**Unique contribution to theory, practice and policy:** The study provides recommendation to Murang'a Co-operative Creameries to enhance the levels of sourcing strategies comprising of

single sourcing strategy, multiple sourcing strategy, delegated sourcing strategy and parallel sourcing strategy since the practices positively and significantly influences organizational performance.

**Key Words:** *Single Sourcing Strategy, Multiple Sourcing Strategy, Delegated Sourcing Strategy, Parallel Sourcing Strategy and Organizational Performance*

### **Background of the Study**

Sourcing strategies represent the different ways in which companies can work together. There are four primary strategies: single, multiple, delegated and parallel. The different strategies relate to a strategy that depends on the prevailing situation and the needs of the company. The memorandum defined strategic sourcing as the structured and collaborative process of thoroughly assessing a firm's spending and using this data to make business decisions about acquisition of items and services more effectively and efficiently. It is understood that the terms strategic sourcing and enterprise sourcing are synonymous in their intent to maximize stakeholder (taxpayer) value and acquire commodities (products and services) more efficiently. Despite the Office of Management and Budget (OMB) mandate, some government agencies have been slow to implement strategic sourcing initiatives, thus they have squandered opportunities to shape consumption and maximize taxpayer value (Holliger, 2018). Dairy farming in Kenya remains one of the biggest sectors that drive economic development. Hundreds of thousands households rear approximately 3.5 million exotic cattle, 14.1million indigenous cattle, 27.7 million goats, and 2.9 million camels (2009 census) for subsistence and commercial purposes. The country has the highest per capita consumption of milk in Africa with a consumption rate of about 90 kg per capita annually compared to an average of 25 kg per capita for Sub-Saharan Africa. This still falls short of the global annual per capita milk consumption requirement of about 220 kg per capita. The sector contributes about 5% to the Gross Domestic Product (GDP), making it the fourth contributor to economic development. Unlocking dairy fortunes in Murang'a County takes a leading role in improving household incomes, creating alternative employment opportunities, wealth creation and better standards of living. The hallmark of dairy farming is the ability to eradicate poverty and create employment on large scale. And given the proximity to key urban centers like Thika and Nairobi, Murang'a County is poised to become a dairy super power within the region.

### **Statement of the Problem**

In tropical states, dairy production is depicted by smallholders who subsistence family component with selling any seasonal surpluses and family food. Usually, these small-scale farmers' possess two to four milking animals. Muranga Co-operative Creameries has however recorded a decline in the levels of milk collection. For instance, MCC Report(2017) established that the creamery managed to collect 33417791.86Kgs of milk in 2016 which declined to 28994159.01Kgs in 2017. The report further established that the creamery recorded a decline of 16% in membership in 2017 compared to 2016. This poor performance exposes the creamery to performance challenges that

can be mitigated by inclusion of right sourcing strategies as advocated by Onyimbo, and Moronge, (2018). Empirical studies on the other hand have also been inconclusive on the sourcing strategies on organization performance. For instance, on Kenya Bureau of Standards (KEBS), Dede, and Theuri,(2018) sought to determine the effect of single sourcing practices on procurement performance in state corporations in Kenya, with specific reference to the Kenya Bureau of Standards. This study was however carried out on state corporations whereas the present study was carried on Muranga Co-operative Creameries in Kenya a contextual knowledge gap the present study sought to fill. Also, on Kenya Railways, Onyimbo, and Moronge, (2018) the study sought to analyze the impacts of single-sourcing on procurement performance in the public entities in Kenya. The findings revealed that to be neutral that the organization purchase is competitive in price; the organization, satisfactory price and procurement performance rapport is guaranteed. The study however focused on a different concept thus presenting conceptual knowledge gaps. Besides, on the Construction Industry in Kenya, Ogeto, and Thiongâ, (2020) sought to determine the significance of strategic procurement on corporate performance. The study was in a different sector. The current study thus sought to fill these knowledge gaps by establishing the influence of sourcing strategies on organization performance of Muranga Co-operative Creameries in Kenya.

### **Research Objectives**

- i To assess the influence of single sourcing strategy on organizational performance of Muranga Co-operative Creameries in Kenya
- ii To examine the influence of multiple sourcing strategy on organizational performance of Muranga Co-operative Creameries in Kenya.
- iii To determine the influence of delegated sourcing strategy on organizational performance of Muranga Co-operative Creameries in Kenya.
- iv To determine the influence of parallel sourcing strategy on organizational performance of Muranga Co-operative Creameries in Kenya.

### **Literature Review**

#### **Theoretical Review**

##### **Agency Theory**

Agency theory was developed by Eisenhardt (1989) as stated by Abdulrahman, (2014), and opined that the agency theory is involved with getting solutions and providing an analysis of problems that emerge in the correlation between agencies and their principals or top administration. The theory is supported by the hypothesis that the goal of a corporation is to maximize the wealth of its shareholders or owners. From the flank of agency theory, an organization outsourcing a process is the principal, and the supplier is the agent. Agency theory posits that the buy versus make a decision should be influenced by the monetary association between transaction and production costs. If the display charges are below transaction costs, institutions should make and handle the procedure within and vice versa. Transaction costs encompass both the explicit expenses related

to outsourcing and additional expenses linked to overseeing and regulating actions taken by the principal. Monitoring costs signify the fees incurred by the principal to ensure that the agent refrains from engaging in activities that might jeopardize the principal's interests and that the agent adheres to the fundamental terms of the outsourcing agreement (Mitnick, 2015). Control costs encompass legal expenses borne by the principal to enforce the stipulations of the outsourcing contract when there are breaches in the agreed-upon timeframe. These factors lead organizations away from internal procurement and sourcing, or even partnership-based outsourcing arrangements. Several primary factors are identified as catalysts driving the trend towards more frequent and robust sourcing relationships between principals and agents (Shogren et al., 2017). Additionally, the increased strategic adoption of outsourcing has equipped numerous businesses with enhanced expertise in establishing effective monitoring and control mechanisms to influence agent conduct positively. With the wealth of information available to sourcing principals, a larger pool of agents, and heightened competition among agents, the potential for agents to engage in opportunistic behaviors against principals has grown. The foundation of the agency theory lies in its primary objective: to examine the impact of a single sourcing strategy on the performance of Muranga Co-operative Creameries in Kenya. This examination is crucial due to the existing principal-agent relationship between the suppliers and Muranga Co-operative Creameries, which incurs transaction costs encompassing not only the direct costs of outsourcing but also supplementary monitoring and control expenses.

### **Network Theory**

Network theory, as introduced by Thorelli (1986) and referenced by Munanu (2017), focuses on the interconnections that exist between businesses and how these interconnections impact a company's behavior and results. While network theory doesn't seem to directly address the decision of whether to produce or purchase, it does offer insights into how a business chooses its partners for purchasing or collaborative relationships. The concept of centrality within networks is crucial in this context. Centrality denotes the level of importance a company holds within a network. A highly central firm is one that frequently engages as a partner with others in the network. Being centrally positioned within a network provides several key competitive advantages within supply chains, including cost efficiency, swiftness, quality, and adaptability (Castells, 2011). A firm with high centrality can leverage its close relationships to expedite processes when necessary, opt for the most suitable and cost-effective suppliers, and seamlessly adapt over time. Thus, in terms of sourcing, a company should aim to have a prominent presence within its network and should seek sources that hold central positions within their respective networks. The secondary objective of this study involves investigating the impact of employing multiple sourcing strategies on the performance of Muranga Co-operative Creameries in Kenya. This objective is rooted in network theory, as Muranga Co-operative Creameries has established connections with its suppliers with the aim of influencing its performance through these relationships, affecting its behavior and outcomes.

## **Systems Theory**

Von Bertalanffy introduced systems theory in 1951, as referenced by Munanu in 2017. This theory views an organization as a complex system made up of interconnected components that collaborate to generate products and services. In the context of sourcing, systems theory perceives that certain segments of the system may be outsourced, impacting the interconnected components within the system. The magnitude and nature of this impact are primarily shaped by the degree of interdependence among the organization's operational processes. This theory identifies three forms of interdependence: Pooled interdependence: This occurs when individual elements of the system provide specialized support to the entire system, and they are mutually reinforced. Sequential interdependence: In cases of sequential interdependence, a specific part of a process must fulfill its role before the subsequent step can proceed within the production cycle. Mutual interdependence: Also known as reciprocal interdependence, this arises when the outcomes of one system serve as inputs to another system (Luhmann, 2013). In essence, systems theory offers a framework to comprehend how sourcing decisions can impact an organization's interconnected components. It takes into account various forms of interdependence present among the organization's operational processes. The class of interdependence provides perspicuity into the costs of coordination communication and coordination in sourcing relationships. Growths in interdependence, task combination, intricacy, or domain in production systems enhance the coordination and transmission costs between the company and sourcing allies (Hespanha, 2018). Further, coordination and dispatch fees are lower for inputs and results than dually interconnected outsourced design parts. Exceeding the importance of the control and coordination costs linked with the mode of interdependence, systems theory provides insights into the desirability of multiple and plural sourcing relations in a turbulent environment. This theory is relevant to this study since there are interdependence within the firm itself and its suppliers. The degree of these interdependences determines the level of collaboration in relation to sharing of information and development of competencies. The third objective; to determine the influence of delegated sourcing strategy on organizational performance of Muranga Co-operative Creameries in Kenya was anchored on the systems theory as Muranga Co-operative Creameries exercises pooled interdependence when each part of the system makes a distinct contribution to and is supported by the whole.

## **Resource Based View**

Resource-Based View (RBV) borrows most of its ideas from Penrose (1959) theory of enterprise growth. Penrose was the first to discover that firm resources influences its ability to produce, compete and grow. The RBV model was employed in the study and analysis of resource-strategy relationships (Barney et al., 2019). Resource-Based View Theory agrees that businesses make the most of the resources at their disposal to achieve competitiveness. According to resource based view, firms achieve competitive edge only if they employ effectively in their operations those resources that are unique, and heterogeneous from those of competitors. Differences in the

performance of the firms, even when they compete in the same industry, can be both as a result of the resources mix based on manager decisions and preferences on the acquisition and deployment of these resources (Sirmon et al., 2018). The resource-based theory expects the management of a firm to make a strategic choice to identify, develop and deploy key resources in order to capitalize on the returns. A firm can formulate strategies that take advantage of external opportunities by exploiting or utilizing internal capabilities or available resources. Kraaijenbrink et al., (2017) criticizes its limited applicability to smaller firms whose static resources deprives them of the needed “sustained competitive advantage”. This makes these firms disadvantaged in their ability and rate to innovate and expand to capture markets and therefore they fall beyond the bounds of the resource-based view. This theory is deemed relevant to this study since it informs one of the independent variables; to determine the influence of parallel sourcing strategy on organizational performance of Muranga Co-operative Creameries in Kenya.

### Conceptual Framework



**Figure 1: Conceptual Framework**

#### Single Sourcing Strategy

Single sourcing involves the idea of reducing the number of suppliers with which an organization does business, and hence sourcing from a sole source. However, the concept of single sourcing has evolved with the growing popularity of the just-in-time (JIT) philosophy and many researchers have studied the advantages of this sourcing strategy. They further pointed out that the general benefits of single sourcing include higher quality at lower total cost to the buyer and that suppliers

are linked to higher levels of buyer/supplier cooperation. Moving to single sourcing improves attitudes in both long and short term contracts. With long-term single sourcing strategy, the supplier has the confidence to invest capital in efficiency programs and product development. They also pointed out that, the single sourcing strategy allows the supplier to stabilize staffing levels and minimize paperwork (Admasu, 2017). Through single sourcing strategy, companies develop a strategic partnership with the supplier to enjoy shared benefits. This enables the two partners to streamline their operations for sustainable competitive advantage. Single sourcing therefore leads to high quality, lower costs and effective cooperation between the buyer and the supplier. It must however be stated that when companies depend on single sourcing, they are exposed to greater risks of supply chain interruption (Fendo, 2016). Practitioners and theorists have recognized the challenges of outsourcing tasks to single versus multiple vendors. The potential problems associated with committing to a single vendor include supplier lock-in, bad vendor selection, and limited domains of competence. Hence, firms have increasingly relied on multisourcing, where (for example) information technology activities are outsourced to multiple vendors. Single-sourcing commitment out-performs order splitting from the buyer's perspective, while the reverse is true from the suppliers' perspective, whether or not subcontracting is considered. The intuitive reason the buyer is better off under a single-sourcing commitment without subcontracting, as opposed to order splitting, is relatively straightforward. If the buyer does not commit to single-sourcing, suppliers may feel "assured" that they win at least part of the buyer's business. The result suggests that this "assurance" softens the competition between suppliers. As a result, the buyer prefers to make a single-sourcing commitment (Shao,2018). The comparison between order splitting and single-sourcing commitment with subcontracting is less intuitive. Under order splitting, the buyer directly purchases from both suppliers, while under single-sourcing commitment, the losing supplier does not contract with the buyer directly, but signs the subcontract with the winning supplier later. It implies that, under single-sourcing commitment, the assurance of getting some production jobs is postponed until the subcontracting stage. Suppliers compete more aggressively in the bidding game. As a result, the buyer is better off making a commitment, while each supplier becomes worse off with commitment (Shao, 2018).

### **Multiple Sourcing Strategies**

Multiple sourcing strategy refers to an organization having business relationships with a number of suppliers; each supplier responds to the demands and specifications of a particular quotation from the purchasing organization. The multiple-sourcing strategy plays one supplier against another and the competition among the suppliers is intense. The existence of a second and alternative supplier would enable the buying organization to switch demand with minimal disruption. They pointed out that, there is no doubt that the argument has some validity for critical suppliers but it is certainly questionable whether its application in all cases delivers the benefits claimed. When several suppliers are present, since the suppliers responds to the demands and specifications of a particular quotation, the purchaser has the opportunity to receive lower prices



and shipping costs. In Multiple sourcing strategy the suppliers has the burden of being responsible for maintaining the necessary technology, expertise, and forecasting abilities, plus cost, quality and delivery competencies. According to them, dealing with several suppliers is likely to require longer time in negotiation and in turn, may delay or disturb production schedules (Admasu, 2017). The move towards dual sourcing is due to the high risks associated with single sourcing. In dual sourcing, a buyer identifies and uses more than one supplier, one of which may dominate the others in terms of business share, price and reliability. Fendo, (2016) on the other hand found out the need for dual sourcing is to improve cost incurred, enhance reliability, reduce exposure to risks, increase supply varieties and to enhance the product contribution margins. Multisourcing enables the firm to choose “best of breed” vendors, to lower costs through vendor competition, and to improve agility and adaptability to dynamic environments (Bhattacharya *et al*, 2018). Although the use of multisourcing has grown rapidly, that strategy has several pitfalls stemming from such issues as effort interdependence between parties, the formal incentive structure, and alignment of performance measures (in the contracts that govern these multisourcing relationships) with the client’s overall objectives. These issues make the management of such arrangements a challenging endeavor. In contrast to single-sourcing environments, where the client encounters moral hazard issues with only one supplier, a client that multisource must coordinate (and properly incentivize) the actions of multiple vendors. And, just as in the single-sourcing case, it may not be possible to write formal contracts based on project revenues because those revenues are often either unverifiable or only partially verifiable (Bhattacharya, *et al*, 2018).

### **Delegated Sourcing Strategy**

This sourcing strategy alludes to assigning one supplier responsible for the delivery of a whole sub-assembly to the client as opposed to a particular part. The client business gives more accountability to one essential supplier who coordinates the rest of the component suppliers (Bolandifar, *et al*, 2016). Manufacturers are increasingly incorporating a growing number of upper-tier suppliers into their supply base, a move aimed at reducing supply-related risks for the original equipment manufacturer (OEM). This shift allows OEMs not only to source directly from tier-2 suppliers but also to delegate tier-1 suppliers to source on behalf of the OEM. This article focuses on comparing these two approaches, considering scenarios involving both uneven information about production costs among tier-2 suppliers and interconnected supply disruptions involving these suppliers. When an OEM offers either an income-sharing term contract or a base-commitment term contract to a tier-1 supplier through delegation, the benefits to the OEM from delegation align with those from direct sourcing. However, in cases where a fixed-quantity term contract is employed, delegation yields lower profits for the OEM compared to direct sourcing. This applies regardless of whether the contract manufacturer (CM) is subject to procurement funding constraints or has significant financial resources. Furthermore, the study reveals that if an enhanced fixed-quantity term contract is utilized within delegation and the CM possesses substantial financial backing, the OEM could actually attain greater profits through delegation

compared to direct sourcing (Chen, 2020). Manifestations of the two strategies of supply network intervention and delegation, when applied as part of supplier involvement in product development, and positive and negative indications of delegation and intervention, depending on the actor perspective: manufacturers perceive a need to control the product development process across several supply network tiers through intervention in supplier selection and communication, but these actions are likely to “tie the hands of the suppliers (Lv,2019). Two sourcing strategies available to organizations are examined, critical and leverage, which in turn, influence the approach to managing the supplier relationship (arms-length or collaborative). We argue that different relationship approaches are appropriate to achieving different performance outcomes. A structural equation model, using a sample of 142 manufacturing firms based in the United Kingdom, is used to test this hypothesized model. The results indicate that a critical sourcing strategy requires collaborative supplier relationships in order to achieve higher relationship and business outcomes, while leverage sourcing strategies have a direct impact on these same performance outcomes. In addition, a leverage strategy was associated with increased levels of supplier power, though this power was found not to have a significant effect on performance. Our study provides support for the importance of aligning sourcing strategies to particular supplier relationship approaches in order to improve firm performance (Cousins, & Lawson, 2017).

### **Parallel Sourcing Strategy**

Thus even though the components are single sourced, the buyer has alternative suppliers with the same capabilities of delivering those components. In theory, the buyer is dealing with their suppliers as they were single source suppliers, reaping the same related benefits. On the other hand, across the different end products, the buyer would handle their suppliers as in the case of multiple sourcing. The buyer can promise a larger share of the business as an incentive; hence Richardson (1993) argues that parallel sourcing is superior to single sourcing, in that the suppliers would have the incentive to perform better due to the existence of competitors within the buyer firm’s supply base. Comparing parallel sourcing with delegated sourcing (network sourcing), there are certainly some similarities. According to Nordigården, et al, (2014) shares the same view; that single sourcing is not as widespread as believed, since the Japanese automotive assemblers delegates/subcontract responsibilities throughout the hierarchical structure. In addition both strategies are based on that the buyer divides the purchase volume on multiple suppliers based on the suppliers’ past performance. In parallel sourcing, the customer has for every ending product a single supplier for individual components, while the suppliers of a particular part are diverse across the end products. In the figure, the buying firm has two end products, model 1 and model 2. Each end product needs component A and B. For model 1, the buyer single source the two components (A and B) from S1 and S3. In the same way, the buyer firm single source components A and B for model 2 from supplier S2 and S4. Thus even though the components are single sourced, the buyer has alternative suppliers with the same capabilities of delivering those components. In theory, the buyer is dealing with their suppliers as they were single source suppliers, reaping the same related

benefits. On the other hand, across the different end products, the buyer would handle their suppliers as in the case of multiple sourcing. The buyer can promise a larger share of the business as an incentive; hence Richardson (1993) argues that parallel sourcing is superior to single sourcing, in that the suppliers would have the incentive to perform better due to the existence of competitors within the buyer firm's supply base. Parallel sourcing is a combination of both single sourcing strategy and multiple sourcing strategy. This means that, parallel sourcing assumes all the advantages and disadvantages of single and multiple sourcing. One of the benefits of this sourcing strategy is that, there is no tradeoff between supplier relationships and the number of suppliers to engage. Unlike single sourcing, the buying company cannot develop close relationship with many suppliers since all its products are sourced from one supplier.

### Research Methodology

This study utilized the descriptive research design. This study targeted six (6) departments comprising of human resource department, quality assurance department, production department, maintenance department, sales department and accounts, finance department in Muranga Co-operative Creameries. The units of observation comprised of the employees from these departments. A total of 76 employees were targeted in the study. The study used census technique due to the size of the population. The study relied on primary data that was collected using semi structured questionnaire that was administered by drop and pick methods. Data obtained from the questionnaires were first be cleaned and edited before being coded and subjected to further analysis. The Likert scales in closed ended questions in the questionnaires were converted to numerical codes and be scored on 1-5 point scale in order of magnitude of the construct being measured. They then entered into the Statistical Package for Social Sciences (SPSS) version 24.0 computer program. Descriptive statistical analysis was done using, frequencies and percentages to describe the basic characteristics of the data. Inferential data analysis was done using the Pearson's Product-Moment Correlation Coefficient. Correlation analyses were used to measure the relationship between variables. The multiple linear regression model is as shown below:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$$

Where; Y represents Organization Performance of Muranga Co-operative Creameries in Kenya,  $\beta_0$  represents the regression model Constant,  $X_1$  represents Single Sourcing Strategy,  $X_2$  represents Multiple Sourcing Strategy,  $X_3$  represents Delegated Sourcing Strategy,  $X_4$  represents Parallel Sourcing Strategy,  $e$  represents the estimated error of the regression model and  $\beta_i$  are the coefficients of the variables determined by the model.

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## **Findings of the Study**

### **Response Rate**

The study distributed 76 questionnaires to the target respondents drawn from human resource department, quality assurance department, production department, maintenance department, sales department and accounts, finance department in Muranga Co-operative Creameries. 66 questionnaires were fully filled and returned for analysis. This accounted for 86.4% response rate. The response rate according to Mugenda and Mugenda (2013) is considered appropriate for analysis and for making inferences. The researcher attained the high response rate through the application a drop and pick data collection approach.

### **Descriptive Statistics**

The researcher used descriptive statistics in the study to describe how the measures of items in each variable in the questionnaires were distributed. To describe the distributions, the study used both standard deviations and means. The questionnaire items were rated on a Likert scale of 1-5, with 5 indicating Strongly Agree, 4 indicating Agree, 3 indicating Neutral, 2 indicating Disagree, and 1 indicating Strongly Disagree. Respondents were asked to use the scale to show their degree of agreement with each item on each dimension. For each statement, the mean response and mean standard deviation were calculated.

### **Single Sourcing Strategy**

The descriptive results on single sourcing strategy outlined in table 1 shows that respondents agreed with the statement that Muranga county cooperative creameries have been able to develop strategic partnership with supplier that ensures that it enjoy shared benefits(mean=4.12), that the creameries has enhanced cooperation and lowered the transaction cost between us and our suppliers (mean=4.16) and that the organization has extensive access to the operations and management systems of the supplier (mean=3.96). Respondents further agreed with the statements that the cooperative has enhanced the mutual oriented relationship built on trust which has developed over a considerable period(mean=4.01) and that the cooperative involves supplier in development of specification for its items (mean=3.67).An average response rate of 3.984 and std.dev of 0.481 implies that all the respondents agreed with the statements on single sourcing strategy. The results concurs with Fendo (2016) who noted that through single sourcing strategy, companies develop a strategic partnership with the supplier to enjoy shared benefits which enables the two partners to streamline their operations for sustainable competitive advantage.

**Table 1: Single Sourcing Strategy**

<b>Single Sourcing Strategy</b>	<b>Mean</b>	<b>Std.Dev</b>
Muranga county cooperative creameries have been able to develop strategic partnership with supplier that ensures that it enjoy shared benefits	4.12	0.356
The creameries has enhanced cooperation and lowered the transaction cost between us and our suppliers	4.16	0.314
The organization has extensive access to the operations and management systems of the supplier	3.96	0.597
The cooperatives has enhanced the mutual oriented relationship built on trust which has developed over a considerable period	4.01	0.296
The cooperatives involve supplier in development of specification for its items	3.67	0.841
<b>Average</b>	<b>3.984</b>	<b>0.481</b>

### Multiple Sourcing Strategies

The descriptive results on multiple sourcing strategies outlined in table 2 shows that respondents agreed with the statement that suppliers respond well to the demands and specification of a particular quotation, thus giving cooperative the opportunity to receive lower prices and shipping cost(mean=3.76), that the cooperative has reduced exposure to risks and increased supplies base(mean=4.23) and that the cooperative have put in place a competitive process for identifying suppliers(mean=4.36). Respondents further agreed with the statements that the cooperative have minimized costs for bids and enhanced negotiations on fair prices (mean=3.85), that the cooperatives have enhanced its purchasing skills and supplier responsiveness (mean=3.88) and that the cooperative have ensured that it enhance its strategic purchasing procurement function (mean=4.11). An average response mean of 4.032 and std.dev of 0.475 implies that all the respondents agreed with the statements on multiple sourcing strategies. The results are in tandem with Bhattacharya *et al*, (2018) who noted that multi-sourcing enables the firm to choose “best of breed” vendors, to lower costs through vendor competition, and to improve agility and adaptability to dynamic environments.

**Table 2: Multiple Sourcing Strategies**

<b>Multiple Sourcing Strategies</b>	<b>Mean</b>	<b>Std.Dev</b>
Suppliers respond well to the demands and specification of a particular quotation, thus giving us the opportunity to receive lower prices and shipping cost	3.76	0.856
The cooperatives has reduced exposure to risks and increased supplies base.	4.23	0.217
The cooperatives have put in place a competitive process for identifying suppliers	4.36	0.198
The cooperatives have minimized costs for bids and enhanced negotiations on fair prices	3.85	0.665
The cooperatives have enhanced its purchasing skills and supplier responsiveness	3.88	0.702
The cooperatives have ensured that it enhance its strategic purchasing procurement function	4.11	0.212
<b>Average</b>	<b>4.032</b>	<b>0.475</b>

**Delegated Sourcing Strategy**

The descriptive results on delegated sourcing strategy outlined in table 3 shows that respondents agreed with the statement that Muranga county cooperatives ensure that its suppliers are involved in product development (mean=3.54), that the cooperatives has developed a group buying unit to take advantage of the quantity discount (mean=3.84) and that the cooperatives ensures that it built and maintain a collaborative supplier relationship with its suppliers (mean= 4.13). Respondents further agreed with the statements that the cooperatives ensures that it carry out frequent supplier identification and selection prior to contract commencement (mean=3.95), that the cooperative have set in place a pre-order strategy that enables it to obtain advance accurate demand information (mean=3.68) and that together with suppliers, the cooperative have developed a quantity discount schedule (mean=4.19). An average response mean of 3.889 and std.dev of 0.584 implies that all the respondents agreed with the statements on delegated sourcing strategy. The results tallies with Ogeto and Thiongâ (2020) who noted that when the customer works closely with one supplier and exits the remainder of the coordination to this supplier, the customer achieves a reduction in the commerce costs.

**Table 3: Delegated Sourcing Strategy**

<b>Delegated Sourcing Strategy</b>	<b>Mean</b>	<b>Std.Dev</b>
Muranga county cooperatives ensure that its suppliers are involved in product development	3.54	0.854
The cooperatives has developed a group buying unit to take advantage of the quantity discount	3.84	0.844
The cooperatives ensures that it built and maintain a collaborative supplier relationship with its suppliers	4.13	0.209
The cooperatives ensures that it carry out frequent supplier identification and selection prior to contract commencement	3.95	0.654
The cooperatives have set in place a pre-order strategy that enables it to obtain advance accurate demand information	3.68	0.743
Together with suppliers we have developed a quantity discount schedule	4.19	0.199
<b>Average</b>	<b>3.889</b>	<b>0.584</b>

**Parallel Sourcing Strategy**

The descriptive results on parallel sourcing strategy outlined in table 4 shows that respondents agreed with the statement that the cooperative encourage suppliers to find other customers to reduce their dependence on our business so that in difficult times we can rely on them (mean=3.26), that the cooperative ensure that good buyer supplier relationship is maintained (mean=4.44) and that there is a designed and integrated supply-side, manufacturing and demand-side operations network in such a way that total expected operating cost is minimized (mean=4.15). Respondents further agreed with the statements that with an in house dominant strategy, outsourcing complements our production capacity utilization and outsource less cost-efficient production (mean=4.32) and that the cooperative normally employ a multi-criteria decision-making method when choosing the best sourcing option (mean=4.25). All respondents were in agreement with the statements on parallel sourcing as shown by average response mean of 4.084 and std.dev of 0.349. The results are consistent with Richardson (2013) who argued that in parallel sourcing, the suppliers would have the incentive to perform better due to the existence of competitors within the buyer firm's supply base.

**Table 4: Parallel Sourcing Strategy**

<b>Parallel Sourcing Strategy</b>	<b>Mean</b>	<b>Std.Dev</b>
The cooperatives encourage suppliers to find other customers to reduce their dependence on our business so that in difficult times we can rely on them	3.26	1.104
The cooperatives ensure that good buyer supplier relationship is maintained	4.44	0.163
There is a designed and integrated supply-side, manufacturing and demand-side operations network in such a way that total expected operating cost is minimized	4.15	0.206
With an in house dominant strategy, outsourcing complements our production capacity utilization and outsource less cost-efficient production	4.32	0.114
The cooperatives normally employ a multi-criteria decision-making method when choosing the best sourcing option	4.25	0.158
<b>Average</b>	<b>4.084</b>	<b>0.349</b>

**Organizational performance**

The descriptive results on parallel sourcing strategy outlined in table 5 shows that respondents agreed with the statement that the cooperative have managed to minimize production costs in past two years(mean=4.39), that there is an enhanced service delivery for the last two years (mean=4.46), that in the last one year lead time have been reduced(mean=3.98), that customer satisfaction have improved in the last one year(mean=3.79) and that the cooperative have ensured that the quality of the services is improved(mean=4.14). All respondents agreed with the statements on organizational performance as shown by average response mean of 4.152 and std.dev of 0.274. This is in tandem with Ndubai, Mbeche and Pokhariyal (2016) who highlighted that organizational performance impacts key performance indicators (KPIs) in any organization such as customer service level and net profit.

**Table 5: Organizational performance**

<b>Organizational performance</b>	<b>Mean</b>	<b>Std.Dev</b>
Production costs have been minimized in the past two years	4.39	0.109
There is an enhanced service delivery for the last two years	4.46	0.197
In the last one year lead time have been reduced	3.98	0.514
Customer satisfaction have improved in the last one year	3.79	0.384
The cooperatives have ensured that the quality of the services is improved	4.14	0.164
<b>Average</b>	<b>4.152</b>	<b>0.274</b>



## Inferential Statistics

### Correlation Results

A correlation analysis was included in the study to determine whether there was a correlation between the independent variables (Single Sourcing Strategy, Multiple Sourcing Strategy, Delegated Sourcing Strategy, and Parallel Sourcing Strategy) and the dependent variable (Organizational performance). According to the results presented in table 6, there exist a positive significant correlation between single sourcing strategy and organizational performance of Muranga Co-Operative Creameries Kenya. This is shown by a correlation coefficient value of 0.154 and a significance value of 0.012. This implies that enhancing single sourcing strategies leads to enhanced levels of organizational performance of the cooperative. The results concurs with Fendo (2016) who noted that through single sourcing strategy, companies develop a strategic partnership with the supplier to enjoy shared benefits which enables the two partners to streamline their operations for sustainable competitive advantage. The results also shows that there exist a positive significant correlation between multiple sourcing strategy and organizational performance of Muranga Co-Operative Creameries Kenya. This is shown by a correlation coefficient value of 0.413 and a significance value of 0.000. This implies that enhancing multiple sourcing strategies leads to enhanced levels of organizational performance of the cooperative. The results are in tandem with Bhattacharya *et al*, (2018) who noted that multi-sourcing enables the firm to choose “best of breed” vendors, to lower costs through vendor competition, and to improve agility and adaptability to dynamic environments.

The results further shows that there exist a positive significant correlation between delegated sourcing strategy and organizational performance of Muranga Co-Operative Creameries Kenya. This is shown by a correlation coefficient value of 0.331 and a significance value of 0.000. This implies that enhancing delegated sourcing strategies leads to enhanced levels of organizational performance of the cooperative. The results tallies with Ogeto and Thiongâ (2020) who noted that when the customer works closely with one supplier and exits the remainder of the coordination to this supplier, the customer achieves a reduction in the commerce costs. The results further shows that there exist a positive significant correlation between parallel sourcing strategy and organizational performance of Muranga Co-Operative Creameries Kenya. This is shown by a correlation coefficient value of 0.219 and a significance value of 0.006. This implies that enhancing parallel sourcing strategies leads to enhanced levels of organizational performance of the cooperative. The results are consistent with Richardson (2013) who argued that in parallel sourcing, the suppliers would have the incentive to perform better due to the existence of competitors within the buyer firm’s supply base.

**Table 6: Correlation Analysis**

		<b>Single Sourcing Strategy</b>	<b>Multiple Sourcing Strategy</b>	<b>Delegated Sourcing Strategy</b>	<b>Parallel Sourcing Strategy</b>	<b>Organizational performance</b>
<b>Single Sourcing Strategy</b>	Pearson Correlation Sig. (2-tailed)	1				
<b>Multiple Sourcing Strategy</b>	Pearson Correlation Sig. (2-tailed)	0.103 0.083	1			
<b>Delegated Sourcing Strategy</b>	Pearson Correlation Sig. (2-tailed)	0.131 0.198	0.107 0.089	1		
<b>Parallel Sourcing Strategy</b>	Pearson Correlation Sig. (2-tailed)	0.075 0.161	0.184 0.105	0.284 0.099	1	
<b>Organizational performance</b>	Pearson Correlation Sig. (2-tailed) N	0.154 0.012 66	0.413 0.000 66	0.331 0.000 66	0.219 0.006 66	1

**Multiple Regression Analysis**

The inclusion of a multiple regression analysis was done to analyze the level of relationship between the independent variable (Single Sourcing Strategy, Multiple Sourcing Strategy, Delegated Sourcing Strategy, and Parallel Sourcing Strategy) and the dependent variable (Organizational performance). In the study, a significance level of 0.05 was used. According to the results outlined in table 7, the R-value was 0.749 implying that there exists a moderately high relationship between sourcing strategies and organizational performance of Muranga Co-Operative Creameries Kenya. The coefficient of determination represented by R-Square value was

0.561 implying that 56.1% of variations in the organizational performance levels of Muranga Co-Operative Creameries Kenya can be attributed to sourcing strategies adopted in the study.

**Table 7: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.749 <sup>a</sup>	0.561	0.517	0.41722

a. Predictors: (Constant), Single Sourcing Strategy, Multiple Sourcing Strategy, Delegated Sourcing Strategy and Parallel Sourcing Strategy

ANOVA (Analysis of Variance) was performed to examine the statistical significance of the model linking independent and dependent variables. This is arrived at by comparing the value of F-Calculated with the value of F-Critical from F-statistical tables at 0.05 significant level. The F-critical value was 2.56 while the F-calculated was 12.0274. From the results, F-calculated value exceeds the F-critical value implying that the model linking the independent variables with the dependent variable was statistically significant thus a good fit for the study.

**Table 8: ANOVA (Model Significance)**

Model		Sum of Squares	df	Mean Square	f	Sig.
1	Regression	287.162	4	71.7905	12.0274	.008 <sup>b</sup>
	Residual	364.105	61	5.96893		
	Total	651.267	65			

a. Dependent Variable: Organizational performance

b. Predictors: (Constant), Single Sourcing Strategy, Multiple Sourcing Strategy, Delegated Sourcing Strategy and Parallel Sourcing Strategy

The regression coefficient model was included in the study to show how the dependent variable changes with a unit change in the independent variable. According to the results outlined in table 9, single sourcing strategy positively and significantly influences organizational performance of Muranga Co-Operative Creameries Kenya (Beta=0.216, sig=0.011<0.05). This implies that increasing the levels of single sourcing strategies with one unit results to 0.216 units increase in organizational performance of Muranga Co-Operative Creameries Kenya. The results concurs with Fendo (2016) who noted that through single sourcing strategy, companies develop a strategic partnership with the supplier to enjoy shared benefits which enables the two partners to streamline

their operations for sustainable competitive advantage. The coefficients results also shows that multiple sourcing strategy positively and significantly influences organizational performance of Muranga Co-Operative Creameries Kenya (Beta=0.549, sig=0.000<0.05). This implies that increasing the levels of multiple sourcing strategies with one unit results to 0.549 units increase in organizational performance of Muranga Co-Operative Creameries Kenya. The results are in tandem with Bhattacharya *et al*, (2018) who noted that multi-sourcing enables the firm to choose “best of breed” vendors, to lower costs through vendor competition, and to improve agility and adaptability to dynamic environments.

The coefficients results further shows that delegated sourcing strategy positively and significantly influences organizational performance of Muranga Co-Operative Creameries Kenya (Beta=0.406, sig=0.000<0.05). This implies that increasing the levels of delegated sourcing strategies with one unit results to 0.406 units increase in organizational performance of Muranga Co-Operative Creameries Kenya. The results tallies with Ogeto and Thiongâ (2020) who noted that when the customer works closely with one supplier and exits the remainder of the coordination to this supplier, the customer achieves a reduction in the commerce costs. The coefficients results finally shows that parallel sourcing strategy positively and significantly influences organizational performance of Muranga Co-Operative Creameries Kenya (Beta=0.315, sig=0.000<0.05). This implies that increasing the levels of parallel sourcing strategies with one unit results to 0.315 units increase in organizational performance of Muranga Co-Operative Creameries Kenya. The results are consistent with Richardson (2013) who argued that in parallel sourcing, the suppliers would have the incentive to perform better due to the existence of competitors within the buyer firm’s supply base.

**Table 9: Model Coefficients**

Predictors	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	1.994	0.445		4.4809	0.000
Single Sourcing Strategy	0.216	0.219	0.175	0.9863	0.011
Multiple Sourcing Strategy	0.549	0.172	0.487	3.1919	0.000
Delegated Sourcing Strategy	0.406	0.201	0.351	2.020	0.000
Parallel Sourcing Strategy	0.315	0.219	0.262	1.4384	0.003

The optimal regression model becomes:

**Organizational performance of Muranga Co-Operative Creameries Kenya= 1.994 + 0.549(Multiple Sourcing Strategy) + 0.406(Delegated Sourcing Strategy) + 0.315(Parallel Sourcing Strategy) + 0.216(Single Sourcing Strategy)**

According to the optimal model, holding all other factors constant, operation performance of Muranga Co-Operative Creameries Kenya stands at 1.994 units. Multiple Sourcing Strategy has the highest influence on organizational performance followed by Delegated Sourcing Strategy, then Parallel Sourcing Strategy and lastly Single Sourcing Strategy.

### **Conclusion**

The study concludes that single sourcing strategy bears a positive significant influence on organizational performance of Muranga Co-operative Creameries in Kenya. Additionally, single sourcing strategies such as developing strategic partnership with supplier, enhancing cooperation which lowers the transaction cost between us and our suppliers, having an extensive access to the operations and management systems of the supplier, enhancing the mutual oriented relationship built on trust that continuously develops and involving supplier in development of specification for its items further contributes to organizational performance improvements. The study further concludes that multiple sourcing strategy bears a positive significant influence on organizational performance of Muranga Co-operative Creameries in Kenya. Additionally, multiple sourcing strategies such as having suppliers who responds well to the demands and specification of a particular quotation, thus giving us the opportunity to receive lower prices and shipping cost, reducing exposure to risks and increasing supplies base, putting in place a competitive process for identifying suppliers and minimizing costs for bids and enhanced negotiations on fair prices further contributes to organizational performance improvements. Other multiple sourcing strategies that contributes to improve organizational performance comprise of enhancing purchasing skills and supplier responsiveness and ensuring that there is an enhanced strategic purchasing procurement function in the firm.

The study further concludes that delegated sourcing strategy bears a positive significant influence on organizational performance of Muranga Co-operative Creameries in Kenya. Additionally, delegated sourcing strategies such as ensuring that suppliers are involved in product development, developing a group buying unit to take advantage of the quantity discount, ensuring that there is creation and maintenance of a collaborative supplier relationship with its suppliers, ensuring that cooperative carries out frequent supplier identification and selection prior to contract commencement, setting in place a pre-order strategy that enables it to obtain advance accurate demand information and developing a quantity discount schedule with suppliers further contributes to organizational performance improvements. The study finally concluded that parallel sourcing strategy bears a positive significant influence on organizational performance of Muranga Co-operative Creameries in Kenya. Additionally, parallel sourcing strategies such as encouraging suppliers to find other customers to reduce their dependence on our business so that in difficult

times we can rely on them, ensuring that good buyer supplier relationship is maintained and having a designed and integrated supply-side, manufacturing and demand-side operations network in such a way that total expected operating cost is minimized further contributes to organizational performance improvements. Other parallel sourcing strategies that enhance the levels of organizational performance comprise of having an house dominant strategy where outsourcing complements the firm's production capacity utilization and outsource less cost-efficient production and employing a multi-criteria decision-making method when choosing the best sourcing option.

### **Recommendations**

The study recommends Muranga Co-operative Creameries to enhance single sourcing strategy since the practice bears a positive and significant influence on organizational performance levels of the firm. The cooperative can attain this by adopting single sourcing strategies such as developing strategic partnership with supplier, enhancing cooperation which lowers the transaction cost between us and our suppliers, having an extensive access to the operations and management systems of the supplier, enhancing the mutual oriented relationship built on trust that continuously develops and involving supplier in development of specification for its items. The study also recommends Muranga Co-operative Creameries to enhance multiple sourcing strategy since the practice bears a positive and significant influence on organizational performance levels of the firm. The cooperative can attain this by adopting multiple sourcing strategies such as having suppliers who responds well to the demands and specification of a particular quotation, thus giving us the opportunity to receive lower prices and shipping cost, reducing exposure to risks and increasing supplies base, putting in place a competitive process for identifying suppliers and minimizing costs for bids and enhanced negotiations on fair prices further contributes to organizational performance improvements. Other multiple sourcing strategies that can be adopted includes enhancing purchasing skills and supplier responsiveness and ensuring that there is an enhanced strategic purchasing procurement function in the firm.

The study further recommends Muranga Co-operative Creameries to enhance delegated sourcing strategy since the practice bears a positive and significant influence on organizational performance levels of the firm. The cooperative can attain this by adopting delegated sourcing strategies such as ensuring that suppliers are involved in product development, developing a group buying unit to take advantage of the quantity discount, ensuring that there is creation and maintenance of a collaborative supplier relationship with its suppliers, ensuring that cooperative carries out frequent supplier identification and selection prior to contract commencement, setting in place a pre-order strategy that enables it to obtain advance accurate demand information and developing a quantity discount schedule with suppliers further contributes to organizational performance improvements. The study finally recommends Muranga Co-operative Creameries to enhance parallel sourcing strategy since the practice bears a positive and significant influence on organizational performance levels of the firm. The cooperative can attain this by adopting parallel sourcing strategies such as

encouraging suppliers to find other customers to reduce their dependence on our business so that in difficult times we can rely on them, ensuring that good buyer supplier relationship is maintained and having a designed and integrated supply-side, manufacturing and demand-side operations network in such a way that total expected operating cost is minimized further contributes to organizational performance improvements. Other parallel sourcing strategies that can be adopted comprise of having a house dominant strategy where outsourcing complements the firm's production capacity utilization and outsource less cost-efficient production and employing a multi-criteria decision-making method when choosing the best sourcing option.

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