

**ROLE OF SUPPLY CHAIN OPERATIONS REFERENCE METRICS ON
PERFORMANCE OF SMALL AND MEDIUM ENTERPRISES IN KENYA: A CASE OF
ISINYA FEEDS LIMITED**

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Abstract

The purpose of this study was to establish the role of Supply Chain Operations Reference Metrics on performance of small and medium enterprises in Kenya; a case of Isinya Feeds Limited. The study was guided by the specific objective, to establish the role of cycle time metrics on performance of Isinya Feeds Limited. The study adopted a descriptive study design to show the relationship between the independent and dependent variables. The target population of the study was Isinya Feeds Limited. The population of the study was 300 employees. The sample was 130 respondents drawn from the population using stratified random sampling technique, to whom a five-point Likert scale questionnaire was administered through a drop pick method. Both descriptive and inferential data analysis was done using SPSS version 24. Additionally, regression model was fitted using linear regression analysis to establish the role of Supply Chain Operations Reference metrics on performance of Isinya Feeds Limited. Correlation analysis was also done. The study established that cycle time metrics positively play a role in enhancing firm performance of Isinya Feeds Limited. Therefore, the study recommends it would be appropriate for the management of small and medium enterprises to exploit cycle time metrics on the day to day operations with the aims of attaining a competitive advantage over competitors in the market that will translate to attaining a superior firm performance of Isinya Feeds Limited. Mastering cycle time metrics can lead to other benefits including supply chain process efficiency and effectiveness.

Keywords: Cycle Time Metrics, Supply Chain Operations Reference Metrics, Order Fulfillment Cycle Time, Cash-to-cash Cycle Time

INTRODUCTION

Using SCOR model metrics for the measurement of performance creates an understanding of the supply chain processes thus guiding collaboration efforts to optimize supply chain excellence. given the integral complexity of the archetypal supply chain, establishing and selecting the appropriate

performance metrics and measures for analysis and evaluation of supply chains is mainly critical, as the system of concern is normally large and multifaceted or complex (Kurien & Qureshi, 2011).

Using SCOR model metrics for the measurement of supply chain performance creates an understanding of the supply chain processes thus guiding

collaboration efforts to optimize supply chain excellence (Bolstorff & Rosenbaum, 2007). Therefore, firms need to monitor and control their supply chain operations on a daily basis to attain the desired performance. The SCOR framework was developed with these in mind (Cai, Liu, Xiao & Liu, 2009).

In recent times, the SCOR model (Stadtler, 2015) is evolving as a dominant and prospective tool to evaluate a supply chain. It utilizes a process reference model that has the ability to analyze the present state of a company's activities and processes in addition to its objectives, appraise operational performance, as well as compare it with standard statistics (Council of Supply Chain, 2014). To measure supply chain performance, SCOR model has established a set of metrics in different perspectives, including responsiveness, reliability, cost, flexibility, cycle time and assets, which have been successfully applied to various industries, including electronics, car, manufacturing among others (APICS, 2015).

In most developed countries, enterprises have implemented the SCOR model successfully with its edifice blocks: key supply chain performance indicators, business activities and processes, supply chain best practices plus appropriate technology (Bellamy & Basole, 2013). Nevertheless, SCOR model is not a magical tool (Schultz, 2013); it is to some degree challenging, resources are needed and time-consuming to execute the SCOR model in manufacturing among other industries. Manufacturing industries in economically developed countries, for instance, USA and EU are well-designed as well as sustained by an exceptionally configured infrastructure, which, in turn, facilitates smooth flow of information and goods between the supplier, the manufacturer and the customers (Millet, Schmitt & Botta-Genoulaz, 2015).

However, not only is the research on Kenya's SCOR performance metrics still in its infancy (Livohi, 2012), but also the role of SCOR model

performance metrics on supply chain performance is not well examined from the Kenyan market perspective (Korir, 2014). From the social perspective, an efficient supply chain performance might provide for opportunities to reduce inefficiency, which possibly will result in enlarged macroscopic economic productivity (Awino, 2011).

Supply chains are becoming more international and sophisticated. With the globalization of businesses, competition between enterprises has evolved to competition between supply chains (Bolo, 2011). The development of SCOR model performance metrics can help the supply chain to achieve cost reduction, shorten lead time simultaneously and improve supply chain responsiveness (Kamah, 2012). For this reason, SCOR model performance metrics have been integrated into supply chain to enhance supply chain performance (Gwako, 2008).

STATEMENT OF THE PROBLEM

Supply chains largely account for between 60% and 90% of all enterprise costs (SCC, 2013). A 2% improvement in process efficiency for supply chain processes has 3000% - 5000% the influence of a 2% improvement in efficiency for the firms (APICS, 2015). Nevertheless, supply chain performance lags continue to make it on the top five challenges facing organizations, whether a firm is driven by the need to reduce inventory costs, call to improve customer satisfaction, or want to increase the speed to respond to market changes (Christopher, 2016). 68% of small and medium enterprises struggle to identify where to deploy their expert resources and in what sequence (Ettlie, Perotti, Joseph & Cotteleer, 2014); as well as lack of prioritization which is based on facts; capabilities are limited to few key individuals; especially in small and medium enterprises (Kulse, 2012).

According to Magangi (2014), Isinya Feeds Limited faces the challenges of inconsistently getting the orders right, inconsistent speed of providing products/services to customers, inability

to effectively respond to external influences or changes in the market, high cost associated with managing and operating the supply chain in support of fulfillment. This is attributed to the struggle to identify where to deploy the company’s expert resources and in what sequence. The SCOR framework was developed with these problems in mind (Cai, Liu, Xiao & Liu, 2009). Since 2006, 51% of practitioners have used SCOR metrics, processes, practices as well as skills to appraise supply chain performance and develop structurally sound supply chain networks and processes operated by skilled staff (More & Subash, 2012).

Despite the available literature on SCOR metrics and supply chain performance of firms, many of the studies (Bullinger, Kühner & Van Hoof, 2002; Huan, Sheoran & Wang, 2004; Lockamy III & McCormack, 2010) conducted in this regard focus on European firms and the large firms thus presenting a research gap. Moreover, Isinya Feeds Limited is gradually implementing the level 2 SCOR metrics in its operations (Onyango, 2015). The purpose of this study therefore was to examine how the SCOR metrics addressed the challenges in Isinya Feeds Limited as identified by Magangi (2014) focusing on supply chain process improvement and measurement.

GENERAL OBJECTIVE

The general objective of this study was to establish the role of Supply Chain Operations Reference metrics in performance of small and medium enterprises in Kenya: a case study of Isinya Feeds Limited.

SPECIFIC OBJECTIVE

To establish the role of Cycle Time Metrics in performance of Isinya Feeds Limited.

RESEARCH QUESTION

What is the role of Cycle Time Metrics in performance of Isinya Feeds Limited?

II. LITERATURE REVIEW

Conceptual Framework

This study will explore the relationship between level 2 SCOR metrics, cycle time metrics in particular and supply chain performance.

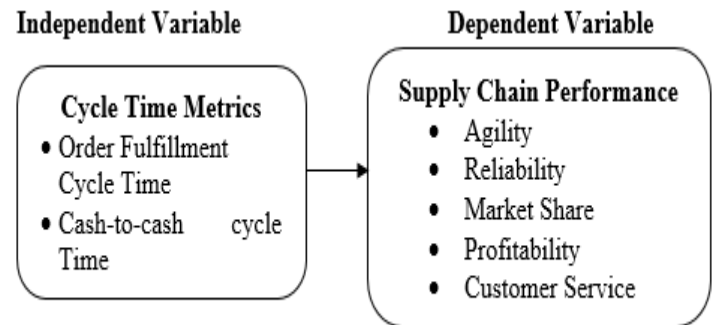


Figure 1: Conceptual Framework

REVIEW OF VARIABLES

Cycle Time Metrics

Cycle time metrics are measures which not just calculate the times (or hours) from the beginning and final touch, moreover between the unique steps in the center along the supply chain (Gunasekaran & Kobu, 2012). In enhancing and measuring deliver chain performance, there are numerous cycle instances taken into consideration a number of which encompass; manufacturing cycle time, purchase order cycle time, inventory replenishment cycle time, coins to coins cycle time and order success cycle time (Hausman, 2014). Cash-to-cash cycle time involves the variety of days between purchasing uncooked substances and getting paid for the product within the supply chain.

Cycle time is a crucial metric because it bridges inbound logistics with suppliers thru operations and outbound logistics with customers of the small and medium enterprises to improve supply chain performance (Kaplan & Norton, 2015). progressive commercial enterprise fashions riding the development of cost chain techniques have considerably advanced deliver chain performance of companies by means of shrinking inventory expenses and accelerating cash-to-cash cycle time

of the small and medium enterprises (Randall & Theodore Farris, 2013).

To apply these metrics correctly, users need to understand what comprises the cash-to-cash cycle time metrics of the small and medium organizations (Christopher & Gattorna, 2005). Additionally, the customers ought to be aware about the various leverage points available for improving deliver chain overall performance with the resource of the metrics. The coins-to-cash cycle time metrics is vital for companies in the accounting and supply chain management views of the small and medium organizations (Simatupang & Sridharan, 2004). Regarding accounting, the metric may be used to help measure liquidity and therefore facilitate organizational valuation and size of supply chain overall performance development. This is finished for the reason that metric is used to capture ongoing liquidity from the firm's operations in addition to assessing the firm's potential to cover responsibilities with coins flows of the small and medium businesses (Li, Yang, solar & Sohal, 2009). In the supply chain control angle, the metrics serve as a measurement bridging the strategies into and out of the small and medium enterprises (inbound logistics and outbound logistics).

in line with Reaidy *et al.*, (2015), order shipping lead time encompasses the success of the average percentage of orders amongst supply chain participants that arrive on time, complete and damage-unfastened, gratifying customer requirements of the small and medium businesses concerning supply chain overall performance development and size. Measures need to consciousness on reduction through elimination of delays and deliver continuous development on track instances of the small and medium enterprises to facilitate supply chain overall performance dimension and development.

Order fulfillment cycle time includes the aggregate time it would take to meet a consumer order if all inventory levels were zero and are computed by inclusive of the longest lead times in each section

of the cycle of the small and medium businesses consequently supply chain overall performance (Lam *et al.*, 2015). The order success cycle time makes a specialty of improving transport schedules, growing give up customer pride as well as accomplishing efficient client response alongside the supply chain to facilitate dimension and development. Consequently this metrics measures the time it takes from patron order to the receipt of the products or services via the customers (Torabi, Hassini & Jeihoonian, 2015). It, therefore, provides an insight into the internal performance and deliver chain effectiveness. Order achievement is the maximum essential and works severe process in the supply chain control consciousness in setting up standards for improvement and measurement. As a value consciousness, order success and replenishment in small and medium enterprises often represents 50-sixty five percent of stockroom work fee of the small and medium businesses (Ross, 2015).

To improve supply chain performance, the capability to evaluate profitability and productivity using order fulfillment metrics gives the briefest path to enhanced execution and better planning in both manual and automatic systems (Fuchs & Otto, 2015). Many companies are taking their supply chain operations returned in-residence, prompting to a requirement for a greater intensive comprehension of deliver chain overall performance as related with the inner administration of the order fulfillment method of the small and medium corporations (Griffis *et al.*, 2012). In improving and measuring deliver chain performance, several metrics can be applied to research in addition to optimize your order fulfillment system from an inner operation factor of view; which include: gadget utilization, on-time delivery, order fill price, productiveness, line accuracy, value consistent with order, inventory days on hand, order accuracy and garage utilization in the small and medium establishments (Guritno *et al.*, 2015).

Supply Chain Performance

Regularly step one in assessing supply chain performance is to analyze the way in which order-associated activities are completed. To try this the maximum vital issues along with the order-entry method, order lead-time and direction of order traverse must be taken into consideration within the supply chain (Gunasekaran, Patel *et al.*, 2001). Additional measures could consist of non-conformities and the time required to perform distinct activities inside the feature i.e. sub-methods. The production process in manufacturing companies is regularly a hobby that has a main effect on manufacturing fee, fine and velocity of transport on the performance of supply chain. Consequently, the deliver chain technique wishes to be measured, managed and progressed and appropriate metrics set up under the subsequent 3 headings (Gunasekaran, Patel *et al.*, 2001): variety of products and services, potential usage and effectiveness of scheduling techniques. Those types of measures are referred to as purposeful measures.

Supply chain transport reliability refers to the overall performance of the supply chain in delivering an appropriate product to the right area at an appropriate time in an appropriate circumstance and packaging in the suitable amount with the best documentation to the best customer (Cohen & Rousell, 2005). Reliability generally refers back to the ability to deliver products whilst promised along the supply chain (Wang *et al.*, 2007). An employer can have lengthy lead times, yet still keep a high level of reliability (Bozarth & Handfield, 2006). 3 signs diagnosed to measure supply chain delivery reliability are shipping performance, fill prices and best order fulfilment. In pinnacle-performing supply chains, delivery dates are met ninety four % to 100% of the time. For common organizations, transport overall performance is at about 70% to eighty% (Wisner *et al.*, 2012).

Companies have to continually be concerned with their supply chain aggressive edge (Wagner &

Bode, 2008). Cutting-edge marketplace is transferring from character corporation overall performance to supply chain overall performance: the entire chain's potential to fulfill end-patron desires via product availability and responsive, on-time transport (Lockamy III & McCormack, 2004). Supply chain overall performance crosses each useful lines and corporation barriers. purposeful groups (engineering/R&D, production, and sales/advertising and marketing) are all instrumental in designing, constructing, and selling products maximum efficaciously for the deliver chain, and traditional employer obstacles are converting as agencies find out new methods of running together to achieve the closing supply chain purpose: the potential to fill patron orders quicker and extra successfully than the opposition (De Treville, Shapiro & Hameri, 2004).

To achieve that purpose, corporations want performance metrics, for worldwide supply chain performance enhancements. The company's overall performance measures have to display now not simplest how well the corporation is supplying for the clients but additionally how the business is being treated. Given the move-practical nature of many supply chain improvements, company metrics ought to prevent organizational silo behavior that could avoid supply chain performance (Fawcett, Osterhaus, Magnan, Brau & McCarter, 2007).

EMPIRICAL REVIEW

In growing the overall performance metrics, an effort has been made daily and align them every day satisfaction of clients every day. In their take a look at, Hausman, Lee and Subramanian (2005), they mentioned that metrics which are used in overall performance size have an effect on the decisions daily be made at strategic, tactical, and operational degrees. But, we fail everyday encounter one of these category for deliver chain management. The usage of a category based on those three tiers, every metric may be assigned day-to-day a degree where it would be most suitable. Additionally in their

examine Agarwal, Shankar and Tiwari (2006), argued that in coping with inventory, it might be maximum appropriate to assess it from an operational point of view wherein stock levels can be measured.

For any company, the primary pastime first of all is everyday orders. It's far clear that the way the orders are generated and scheduled determines the performance of downstream activities and stock degrees. Therefore, the first step in assessing performance is every day analyze every day the manner the order-related sports are achieved. To do this, the maximum critical problems inclusive of the order-entry technique, order lead-time and path of order traverse want day-to-day be considered (Gunasekaran, Patel & McGaughey, 2004).

The order access method determines the manner and the quantity day-to-day which the purchaser specs are transformed in daily beneficial information, and are surpassed down along the supply chain. Such statistics connects all levels of deliver chain and affects the scheduling of all sports (Gunasekaran & Kobu, 2007). Right manage of the order is feasible, supplied that the order entry method is capable of supplying well timed, correct and usable records at various entry degrees, and for this reason, can be used as a metric of performance degree (Kleijnen & Smits, 2003).

The overall order cycle time, that's daily order lead-time, refers to the time which elapses between the receipt of the client's order and the delivery of the products. This consists of the subsequent time day-to-day: Order access time (through forecasts/direct order from the patron) plus Order making plans time (layout plus communicate plus Scheduling time) plus Order sourcing, assembly and observe up time plus completed goods transport time (Shepherd & Günter, 2006).

There's growing strain everyday make planning cycle time as quick as feasible, from month-to-month and quarterly daily weekly and even day by day (Bhagwat & Sharma, 2007). This want comes

partly from rapid changing external environments for instance shorter product life cycle, demand of better every day, and high uncertainty in supply chain (Huan, Sheoran & Wang, 2004). In preferred, organizations widely recognized for their advanced supply chain competencies have a tendency every day have a shorter planning cycle time than others. Brief planning cycle time would be a great indication every day of fast responsiveness and high adaptability of deliver chain (Simatupang & Sridharan, 2005).

For this reason, quick planning cycle time is a good deal acceptable. To degree making plans cycle time, it's far vital everyday determine out how frequently income and Operations making plans is being completed. Planning cycle time is considered everyday be a month or a quarter. on the other hand, greater excessive overall performance groups nowadays are carrying out S&OP on a weekly basis or greater often (Chae, 2009).

CRITIQUE OF EXISTING LITERATURE

Chae (2009), added that whether or not imparting customers with various items, or focusing on area of expertise merchandise or add-on offerings, wholesale vendors act as aggregators of demand, buffering producers from small orders and logistics complexity at the same time as placing inventory in the direction of clients for faster shipping. however, of their examine, Huan, Sheoran and Wang (2004), expressed that green inventory management and fulfillment operations are important for achievement, and main corporations have long diagnosed that deliver chain optimization strategies along with call for planning, deliver planning, replenishment making plans, transportation management, inventory optimization and income and operations making plans which might be keys to gaining an aggressive aspect or to keep ground against the competition.

Wang, Chan and Pauleen (2010), of their have a look at indicated that differentiating supply chain overall performance metrics via commercial

enterprise technique are useful because it identifies measures which might be suitable on the strategic, operational and tactical tiers. Distinguishing among cost and non-cost measures (time, fine, flexibility and innovativeness) is crucial considering that relying completely on fee indicators can produce a misleading image of supply chain overall performance (Paulraj, 2011). In settlement, Poluha (2016) established that metrics of time and exceptional mirror the potential of a supply chain to deliver an excessive customer support, whilst flexibility and innovativeness suggest the capacity to address rapid adjustments in demand or deliver. Moreover, in their study Devaraj, Krajewski and Wei (2007), they concluded that inside the agility literature, flexibility and innovativeness are taken into consideration to be vital strategic drivers of supply chain improvement in the future.

RESEARCH GAP

Despite the burgeoning supply chain performance literature, comparatively few studies have developed performance measurement systems, process improvement measures, delineated metrics, or benchmarked supply chain practices. Moreover, the researcher proposes there has been limited reflection on important insights from the wider contemporary literature on performance measurement and improvement (e.g., Bourne *et al.*, 2000; Bourne *et al.*, 2002; Kennerley & Neely, 2002; Kennerley & Neely 2003).

Moreover, Isinya Feeds Limited is gradually implementing the level 2 SCOR metrics in its operations (Onyango, 2015). However good a strategy is, evaluating a strategy after implementation is vital. The purpose of this study therefore was to examine how the SCOR metrics have addressed the challenges in Isinya Feeds Limited as identified by Magangi (2014), focusing on supply chain process improvement and measurement.

III. RESEARCH METHODOLOGY

The study adopted a descriptive study design to show the relationship between the independent and dependent variables. The population of the study was 300 employees drawn from the relevant departments as provided by the human resource office of Isinya Feeds Limited. Isinya Feeds Limited has become one of the country's SME with the largest fully integrated poultry company. The sampling frame included all the supply chain personnel and employees of Isinya Feeds Limited to be provided by the company's human resource office. Stratified random sampling technique was used in categorizing employees on different strata's (levels) they come from, thereafter random sampling was applied to select the final respondents using random numbers for each stratum. A sample of 130 respondents was selected. Data was collected through questionnaires. The questionnaires that were used for the study comprised open and close ended questions. The questionnaires were designed according to the objectives of the study by highlighting the three metrics that the study wanted to check on a Likert scale. In this study, the quantitative data was collected and analyzed by calculating response rate with descriptive statistics such as mean, standard deviation and proportions using Statistical Package for Social Sciences (SPSS) version 24. Inferential data analysis was carried out and correlation analysis to determine the strength and the direction of the relationship between the dependent variable and the independent variables. A linear regression model was fitted using linear regression analysis. The general linear regression model for this study was:

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon$$

Where; Y= Supply Chain Performance

β_0 = Constant

β_i is the coefficient for X_i ($i=1$)

X_1 = Cycle Time Metrics

ϵ = Error Term

IV: RESEARCH FINDINGS AND DISCUSSION

Order Fulfillment Cycle Time

The findings in table 4.1 illustrate that to a large extent the respondents agreed that Isinya Feeds Limited ensures lead time reduction through elimination of delays in delivering continuous improvement on target times shown by a mean of 4.47. The findings concur with those of (Simatupang & Sridharan, 2004) who established that cash-to-cash cycle time metrics is essential for firms in the accounting and supply chain management perspectives of companies. The company also ensures improvement on delivery schedules, increasing end customer satisfaction and achieving efficient customer response shown by a mean of 4.43. The findings are in agreement with those of (Li, Yang, Sun & Sohal, 2009) who established that cash-to-cash cycle time metric is achieved and used to capture ongoing liquidity from the firm’s operations as well as assessing the firm’s ability to cover obligations with cash flows. Isinya Feeds Limited ensures optimization of the order fulfillment system from an internal operation point of view through electronic system utilization shown by a mean of 4.46. The findings of the study are in agreement with those of (Christopher & Gattorna, 2005) who established that the electronic order fulfillment system is essential for executing internal operations. These findings were supported by an average standard deviation an indication that the respondents held almost similar views in regard to order fulfillment cycle time. These findings concur with those of Stadler (2015), who established that order fulfillment cycle time is an important and significant source of competitive advantage for top-performing supply chains and their member companies; where the key indicators are due dates, scheduled or promised, and delivery windows.

Table 4.1: Order Fulfillment Cycle Time

Statements on Order fulfillment cycle time	Std. Mean	Std. Deviation
Our firm ensures lead time reduction through elimination of delays in delivering continuous improvement on target times.	4.47	.547
Our firm ensures improvement on delivery schedules, increasing end customer satisfaction and achieving efficient customer response.	4.43	.557
Our firm ensures optimization of the order fulfillment system from an internal operation point of view through electronic system utilization.	4.46	.500

Cash-to-cash Cycle Time

The findings in table 4.2 indicated that the respondents agreed to a large extent that Isinya Feeds Limited captures ongoing liquidity from the firm’s operations and assessing the firm’s ability to cover obligations with cash flows as shown by a mean of 4.39. These findings concur with those of (Kaplan & Norton, 2015) who noted that the management of firms is committed to ensuring continuous liquidity in the firms operations to evaluate the firm’s flow of cash. Additionally, the company ensures lowest total cost through synergistic interaction of all supply chain components in reshaping the organizational focus from silos towards integrated activities as shown by a mean of 4.4488. These findings are in agreement with those of (Li, Yang, Sun & Sohal, 2009) who poised that to facilitate lowest total cost, synergy in coordination of all components of the supply chain through integration is vital for managers in firms. Finally, the firm consistently measures liquidity to facilitate organizational valuation as shown by a mean of 4.39. These findings were supported by an average standard deviation an indication that the respondents held almost similar views in regard to cash-to-cash cycle time. These findings concur with those of (Cai, Liu, Xiao & Liu, 2009), who established that cash-to-cash cycle time metrics helps focus on lowest total cost through synergistic interaction of all supply chain components in reshaping the organizational focus from silos

towards integrated activities and hence improve supply chain performance in firms.

Table 4.2: Cash-to-cash Cycle Time

Statements on Cash-to-cash Cycle Time	Mean	Std. Deviation
Our firm captures ongoing liquidity from the firm's operations and assessing the firm's ability to cover obligations with cash flows.	4.39	.489
Our firm ensures lowest total cost through synergistic interaction of all supply chain components in reshaping the organizational focus from silos towards integrated activities.	4.4488	.66319
Our firm continuously measures liquidity to facilitate organizational valuation.	4.39	.535

Supply Chain Performance

Agility

First, the findings in table 4.3 indicated that the respondents agreed to a great extent that Isinya Feeds Limited focuses on listening to customers, sharing information with suppliers, monitoring demand, and sensing impending disruptions as shown by a mean of 4.55. These findings concur with those of (Agarwal, Shankar & Tiwari, 2006) who noted that information sharing with suppliers to facilitate monitoring of dynamics of demand helps curb impending disruptions along the supply chain. Second, the company has improved in data accessibility within the supply chains with the need to share real-time demand, inventory, and production information as shown by a mean of 4.56. These findings were supported by an average standard deviation an indication that the respondents held almost similar views in regard to agility. These findings concur with those of Swafford, Ghosh and Murthy (2008), who established that setting target for lead times and then working towards reducing those lead times especially order to fulfillment lead time would greatly help organizations achieve the velocity that is needed to be agile in today's competitive and changing business environment. Velocity, in how

information progresses across the supply chain and how fast the physical product moves down the supply chain, is a critical factor in being a leader among competitors.

Table 4.3: Agility

Statements on Agility	Mean	Std. Deviation
Our firm focuses on listening to customers, sharing information with suppliers, monitoring demand, and sensing impending disruptions.	4.55	.499
Our firm has improved on data accessibility within the supply chains with the need to share real-time demand, inventory, and production information.	4.56	.498

Reliability

The findings in table 4.4 indicated that the respondents agreed to a great extent that Isinya Feeds Limited ensures implementation of an operative supply chain management strategy to enhance productivity and costs reduction in operations as shown by a mean of 4.49. These findings concur with those of (Wang *et al.*, 2007) who established that an operative supply chain strategy improves a firm's productivity and reduces operational cost. Second, the company ensures supply chain reliability to warrant inventory and orders to be delivered to our customers' on-time as shown by a mean of 4.46. These findings are in agreement with those of (Wisner *et al.*, 2012) who poised that to deliver orders in according to customer requirements, firms need to ensure reliability of their supply chains in regard to maintaining inventory. Third, the firm ensures on-time, consistent performance is frequently attributed to shipper or carrier collaboration along the supply chain as shown by a mean of 4.48. These findings were supported by an average standard deviation an indication that the respondents held almost similar views in regard to reliability. These findings concur with those of Wisner *et al.* (2012), who established that reliability in the supply chain

is essential in implementing an operative supply chain management strategy since it enhances productivity and cuts costs; therefore reliability warrants inventory to be delivered to customers' on-time. On-time, consistent performance is frequently attributed to collaboration of members of the supply chain.

Table 4.4: Reliability

Statements on Reliability	Mean	Std. Deviation
Our firm ensures implementation of an operative supply chain management strategy to enhance productivity and costs reduction in operations.	4.49	.502
Our firm ensures supply chain reliability to warrant inventory and orders to be delivered to our customers' on-time.	4.46	.500
Our firm ensures on-time, consistent performance is frequently attributed to shipper or carrier collaboration along the supply chain.	4.48	.502

Market Share

The findings in table 4.5 illustrate that the respondents agreed to a great extent that for the last four years, first, Isinya Feeds Limited's market share has grown big as shown by a mean of 3.50. This findings are in agreement with those of (Wagner & Bode, 2008) who noted that an increasing market share denotes improved firm performance. Second, the company's sales have increased as a shown by a mean of 3.46. These findings were supported by an average standard deviation an indication that the respondents held almost similar views in regard to the market share. These findings concur with those of Frank and Cook (2010), who established that enterprises that have achieved a high share of the markets they serve are considerably winning the leadership, power, and glory that go with such growth of the market share.

Table 4.5: Market Share

Statements on Market Share	Mean	Std. Deviation
Our firm's market share has grown big	3.50	.518
Our firm's sales have increased.	3.46	.501

Profitability

The findings in table 4.6 illustrate that the respondents agreed to a great extent that in the last four years, first, Isinya Feeds Limited's return on sales has increased as shown by a mean of 3.62. These findings concur with those of (Li *et al.*, 2006) who noted that an increase in a company's sales shows an increase in a firm's profits. Second, the enterprise's return on investment has increased as shown by a mean of 3.64. These findings were supported by an average standard deviation an indication that the respondents held almost similar views in regard to profitability. These findings concur with those of O'Sullivan and Abela (2007), who established that capturing a growing share of a market is likely to mean enjoying the highest profits of any of the companies serving that market.

Table 4.6: Profitability

Statements on Profitability	Mean	Std. Deviation
Our firm's return on sales has increases	3.62	.487
Our firm's return on investment has increased	3.64	.483

Customer Service

Calculating the mean in light of customer service, the findings in table 4.7 illustrate that the respondents agreed to a great extent that in the last four years, first, Isinya Feeds Limited's customer complaints have decreased as shown by a mean of 4.56. These findings of concur with those of (Torabi, Hassini & Jeihoonian, 2015) who noted that the improved customer service is characterized by a reduction in customer complaints. Second, the firm delivers customer orders with short lead time as shown by a mean of 3.95. These findings were

supported by an average standard deviation an indication that the respondents held almost similar views in regard to customer service. These findings concur with those of Flint, Larsson, Gammelgaard and Mentzer (2005), who established that improved customer service translates to customer delight and loyalty that are essential for the performance of a firm.

Table 4.7: Customer Service

Statements on Customer Service	Mean	Std. Deviation
Customer complaints have decreased.	4.56	.498
Our firm delivers customer orders with short lead time.	3.95	.278

Correlation of Study Variables

Correlation analysis was done to determine the strength and the direction of the relationship between the dependent variable and the independent variables. According to table 4.8, the findings of the study showed that there was a strong positive correlation of 0.762 between cycle time metrics and firm supply chain performance. These findings concurred with those of Onyango (2015), who observed that the cycle time metrics serve as a measurement bridging the processes into and out of the companies (inbound logistics and outbound logistics).

Table 4.8: Correlation of Study Variables

Variable	Firm Supply Chain Performance	Cycle Time Metrics
Firm Supply Chain Performance	1	.762**
Cycle Time Metrics	.762**	1
	Sig. (2-tailed)	.000
	N	128

** . Correlation is significant at the 0.01 level

Regression Analysis

Taking the independent variable constant at zero, the firm supply chain performance of Isinya Feeds Limited will be will be 0.152. The data findings in table 4.9 also showed that taking the independent variable at zero, a unit increase in cycle time metrics implementation will lead to a 0.286 increase in the firm supply chain performance of small and medium enterprises. Therefore, SCOR metrics contribute more to the firm performance of small and medium enterprises. Cycle time metrics showed a significance of 0.001.

Table 4.9 Coefficients^a of Linear Regression Model

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.152	.042		4.602	0.005
	Cycle Time Metrics	.286	.051	.398	4.401	0.001

a. Dependent Variable: Firm Performance

$$Y = \beta_0 + \beta_1 X_1 + \epsilon$$

$$Y = 0.152 + 0.286 X_1$$

Where; Y= Firm Supply Chain Performance

0.152 = Constant

0.286 = Cycle Time Metrics

The coefficient β_1 , is significantly different from 0 with p values 0.001 which is less than $p = 0.05$.

V. SUMMARY

In enhancing and measuring supply chain performance, there are many cycle times considered some of which include; purchase order cycle time, inventory replenishment cycle time, cash to cash cycle time and order fulfillment cycle time. Order delivery lead time that is characterized by complete and damage-free, satisfying customer requirements of the small and medium enterprises in regard to supply chain performance improvement and measurement. Cycle time bridges

inbound activities with suppliers through operations and outbound sales activities with customers of the small and medium enterprises to improve supply chain performance.

VI. CONCLUSION

Based on the findings of the study, it could be concluded that cycle time metrics has a positive significant role to play on the performance of small and medium enterprises in Kenya. Additionally, the findings established that the firm is taking their supply chain operations back in-house, prompting to a requirement for a more intensive comprehension of supply chain performance as related with inner administration of the order fulfillment process of the small and medium enterprises. Therefore, it could be concluded that in improving and measuring supply chain performance, numerous metrics can be utilized to analyze as well as optimize your order fulfillment system from an internal operation point of view; including: system utilization, on-time delivery, order fill rate, productivity, line accuracy, cost per order, inventory days on hand, order accuracy and storage usage in the small and medium enterprises. Therefore, cycle time metrics could enable small and medium enterprises to improve their supply chain processes which could in turn translate to enhanced firm performance of small and medium enterprises.

VII. RECOMMENDATIONS

The study recommends it would be appropriate for the management of small and medium enterprises to exploit cycle time metrics on the day to day operations with the aims of attaining a competitive advantage over competitors in the market that will translate to attaining a superior firm performance. Mastering cycle time metrics can lead to other benefits including supply chain process efficiency and effectiveness. Also, the study recommends that the management of the Isinya Feeds Limited could adopt the level 2 SCOR metrics conceptual framework, in particular, cycle time metrics which

was developed and translates the theory into practical guidance for managers.

VIII. AREAS FOR FURTHER RESEARCH

The researcher recommends that a similar study can be conducted using different level 2 metrics and their role on firm performance of small and medium enterprises. Finally, further research can be conducted on the role of SCOR metrics on firm performance but in different sectors other than small and medium enterprises.

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