

The Effect of Supplier Quality Management on Organizational Performance: A Survey of Supermarkets in Kakamega Town

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Abstract

Supplier quality management is one of the very many simple concepts that make a lot of sense to any well meaning organization. Unfortunately, implementing the concept is not very simple and over the years, companies have crumbled due to failure to master the best practices in supplier quality management. Practices such as measuring the performance of suppliers, engaging suppliers in quality management systems, supplier audits, supplier development, integration and competitive supplier selection are a great opportunity to improve organizational performance in terms of customer service delivery levels and operational costs reduction. However, it is worth noting that there are numerous challenges encountered in having such practices accepted by all the stakeholders. The purpose of this study was to determine the effect of supplier quality management on organizational performance, covering all the supermarkets in Kakamega town. The study employed a descriptive survey design and the study population was the procurement managers of the supermarkets. Data was collected using structured questionnaires which were administered by the researchers through a drop and pick technique and it was descriptively analyzed. The study also explored the potential integration of supplier quality management practices into an organization's operations, focussing on the currently available applications. The study recommended that suppliers should maintain reliable records, errors to be identified early, supermarkets to decentralize their management structures, suppliers should conform to specifications and that senior level management should be fully committed especially in supplier development programmes so as to overcome the challenges faced in supplier quality management. Finally, suggestions for further research were given.

Key words: Organizational performance, Supplier, Supplier Quality Management

1. Introduction

1.1 General Background

The supply chain is a set of approaches utilized to efficiently integrate suppliers, manufacturers, warehouses and stores so that merchandise is produced and distributed at the right quantities, to the right locations, and at the right time in order to minimize system wide costs while satisfying service level requirements Simchi-Levi et al. (2009). Numerous studies have addressed how a supplier effectively improves the performance of its purchasing units in a dynamic environment as far as consumer expectations are concerned. These studies have discussed how supplier quality management (SQM) can enhance organizational performance across the supply chain by minimizing operational costs, shortening process cycle, refining quality performance and enhancing customer satisfaction (Shin et al. 2000).

Supplier quality management is a set of activities in most cases initiated by the management to improve organizational performance. Such activities include measuring and tracking the cost of supplier quality, using performance based score cards to measure supplier performance, conducting supplier audits and establishing effective communication channels with suppliers among many more, with an aim of achieving customer satisfaction (Carr and Pearson, 1999). Forker (1999) argues that the impact of supplier quality on an organization's performance is large and direct, and the general understanding is that a firm's quality performance (output) can only be as good as the quality performance of its suppliers (input). An increasing tendency towards supplier development by organizations as supplier quality integration is found to be a critical dimension of quality excellence.

1.2 Supplier Quality Management (SQM)

The concepts of SQM can be viewed as an integration of strategic practices, and such practices need to stretch across inter-organizational boundaries to satisfy both existing and new customers (Harland et al. 1999). Accordingly, Yeung and Lo (2002) view SQM in terms of the managerial efforts necessary for creating an operating environment in which a manufacturer can integrate its supplier capabilities into its operational processes. These managerial efforts can be clustered into several components, namely management responsibility, supplier selection, supplier development, supplier integration, quality measurement and conducting supplier audits. (Fernandez, 1995) state that supplier selection, supplier development and supplier integration can be regarded as forming an SQM system, with management responsibility seen as the driver of the system.

1.2.1 Measuring and Monitoring the Performance of the Supplier

Measuring supplier performance is an important means of modifying managerial behavior, and aligning the relationship with the strategic and operational goals of the buyer firm (Paul et al. 2008). Performance measures provide the information necessary for decision makers to plan, control and direct the activities of the organisation. They also allow managers to measure performance, to signal and educate suppliers on the important dimensions of performance, and to direct improvement activities by identifying deviations from standards. Many well-known frameworks have been developed to aid in these goals, including the balanced scorecard (Kaplan and Norton, 1992).

Paul et al. (2008) explains that for purchasing managers, the evaluation and monitoring of supplier performance is also a critical responsibility. Price has been traditionally considered as the single most important factor in evaluating and monitoring suppliers. Changes in competitive priorities have also seen other dimensions of performance, including quality, delivery and flexibility become increasingly important. Consequently, in order to maintain effective partnerships, the buyer must continuously monitor supplier performance across multiple dimensions and provide feedback for improvement. These

dimensions may be both tangible (e.g. operational performance) and intangible (e.g. relationship status), and should provide timely information to suppliers which both communicate buyer expectations and, where necessary, enables corrective action to be undertaken. Chris and Adam (2007) on the other had argued that convenient performance measurement structure for suppliers is encompassed in the concept of the “perfect order”. The perfect order has three elements: delivery of the complete order; on time; and, an error-free invoice. Many supermarkets extend this concept to include: delivery to correct address; the product being undamaged; and, conformance to quality standards. To achieve these six customer focused targets the supplier will need to measure a wide range of other related internal aspects.

1.2.2 Supplier Audits

Another supplier quality activity is conducting supplier audits. This is a very time consuming exercise but it is important since it adds value to a business. In modern organizations, the role of a quality auditor is that of an adviser who identifies areas of improvement for mutual benefit. Many firms are also adopting the non conformance audit where the auditor lists all the cases he has observed where things are not being done in accordance with procedures and whether they make sense or not. It should however be noted that supplier audits should not be regarded as an exercise to give the suppliers ‘homework’ to do, but should be aimed at improving the relationship between the customer and supplier. This is because after the audits, the payback should come in the improved understanding of each company’s requirements which develops from the audit process (Andrew, 1994).

1.2.3 Supplier Development

Supplier development refers of activities taken to improve supply quality with assistance to operations improvement in supplier side. Buying firms may use a variety of activities to develop suppliers’ performance and/or capabilities. Previous researchers described activities that take place within the context of supplier development. These activities include introducing competition into the supply base, supplier evaluation as a prerequisite to further supplier development activities, raising performance expectations, recognition and awards, the promise of future benefits, training and education of the supplier’s personnel, exchange of personnel between the buying firm and the supplier, and direct investment in the supplier by the buying firm (Monczka et al. 1993). Literature shows that firms may engage in supplier development as a reaction to competitive markets. Seeking competitive advantage from supply initiatives such as supplier development because of competitive pressures such as short product life cycles, innovations in technologies and demand for increased quality levels from customers. It is therefore apparently clear that those firms operating in highly competitive markets put more efforts in their supplier development programmes (Hahn et al 1990).

Supplier development can be a tremendous undertaking requiring resources of money, capital, and people by both the customer and the supplier. Therefore commitment from both parties is necessary. It also requires trust because it involves risk. It is risky for two reasons. First, success is not guaranteed. Second, the companies will have to share confidential and strategic data. Supplier development also requires cooperation and compromise. The companies have to come to agreements about very important matters, such as performance metrics. Sako, (2004) points out that the companies also must have “distinctive organizational and governance structure that facilitates long-term cumulative learning”. So commitment and trust are not enough, the companies must be able to support learning on the organizational level. Supplier development should be about partnership, where both customer and supplier are committed to working together for the long-term benefits (Quayle 2000).

1.2.4 Supplier Integration

Supply source integration (SSI) consists of firms collaborating to leverage strategic positioning and to improve operational efficiency. The opportunity to improve product design performance by involving suppliers in the product development process identifies a definite need to understand better the basic structure of buyer-supplier relationships. In effect, environments that are conducive to highly co-operative relationships between buyers and suppliers are more likely to lead to supplier involvement in the product development process. By contrast, highly confrontational buyer-supplier relationships are less likely to result in early inclusion of suppliers in the product development process (Laura and Stanley 1994). This is in agreement with the findings by (Andrew, 1994) that Suppliers working closely with customers during new product development activities are the norm for successful Japanese companies, and this typically applies to all suppliers. While the end producer may retain the design of the key parts regarded as vital for product success, or core to the business, specialist suppliers are used to provide leading-edge technology in their specific field, whereas general component suppliers are expected to provide production knowledge, thus aiding design for manufacture.

Many companies today are using supplier integration to gain competitive advantage. Suppliers are involved earlier in the design and development process. Their involvement ranges from simple consultation on design ideas to making suppliers fully responsible for the design of services they will supply (Melissa et al. 2004). Some of the benefits that accrue from supply source integration therefore includes reduced development lead times, better communication, substantial costs savings from higher productivity, more reliable products with fewer recalls, enhanced customer satisfaction and improved financial performance.

1.2.6 Competitive Supplier Selection

Before selecting suppliers, a firm must decide whether to use single sourcing or multiple suppliers. The selection of suppliers is done using a variety of mechanisms including offline competitive bids, reverse auctions, or direct negotiations. No matter what mechanism is used, the selection should be based on the total cost of using a supplier and not just the purchase price. Ghodsypour and O'Brien, (2001) points out that supplier selection is one of the most important decision making problems, since selecting the right suppliers significantly reduces the purchasing costs and improves corporate competitiveness. However, supplier selection decision-making problem involves trade-offs among multiple criteria that involve both quantitative and qualitative factors, which may also be conflicting. In other words, buyer supplier relationships based on only the price factor has not been appropriate in supply chain management recently. Considerations have been given also to the other important strategic and operational factors such as quality, delivery, flexibility, etc. Supplier selection decisions must include strategic and operational factors as well as tangible and intangible factors in the analysis. (Ferhan and Demet, 2003)

Rainer and Christian (2005) explained that an ideal supplier is defined by the procuring enterprise which fixes the ideal scores (e.g. the best performing suppliers in the market) of every relevant criteria. The rating team should consist of several departments of the enterprise (procurement, production, controlling, etc.). He also agrees that the best suppliers should be selected on the main criteria of price, quantity, quality, logistics and service. In accordance with relevant logistics literature, these criteria are of great importance for supplier selection. The price i.e. the offer price including discounts and payment terms. Quantity refers to the ability of a supplier to deliver small amounts as well as large amounts of the goods, while quality focuses on the product attributes, e.g. failure rate and durability. Logistics summarizes all delivery performances and service includes additional items such as after-sales service.

It is worth noting that the suppliers have to be fully engaged in the organizations' total quality management systems so as to make quality management complete. This will make the suppliers fully understand what their clients want and the kind of conformance they are expected to adhere to. Before selecting suppliers, various methods can be used to evaluate their performance, the most common being the compilation of supplier profiles. This involves the identification of Key Performance Indicators (KPIs) e.g. service level, quality of products, delivery reliability and price competitiveness. These are then weighted or prioritized to signify their overall importance to the firm. The suppliers rating on a standard scale over the identified KPI is then conducted and its weighted score summed to arrive at the total supplier evaluation score as illustrated:

| Key Performance Indicator (KPI) | Weight (a) | Score (b) | Weighted Score (a x b) |
|---------------------------------|------------|-----------|------------------------|
| Service | 0.4 | 3 | 1.2 |
| Quality | 0.3 | 4 | 1.2 |
| Delivery | 0.2 | 2 | 0.4 |
| Price | 0.1 | 2 | 0.2 |
| Totals | 1 | 11 | 3 |

Scale: 1-5, where 1=very poor and 5=excellent

This evaluation is done for all the firm's suppliers and the supplier with the highest weighted score has the best performance hence and can be chosen over the others for future transactions. This method is very useful in comparing several suppliers for different deliveries or products.

2. Statement of the Research Problem

Many firms would obviously want to increase their performance levels but the means to do that is always a challenge. Supplier quality management is usually one of the avenues that can assist a firm improve operational and financial performance. Supermarkets mostly deal with fast moving consumer goods (FMCG) and thus there is always a frequent contact between them and their suppliers. This calls for a long term relationship between the two parties and the benefits that accrue to supplier quality management practices are numerous. Japan based companies align their operations with some Chinese suppliers so as to retain competitiveness by cutting operational costs and by accessing new markets (V.H.Y and Yeung, 2006). Kwai et al. (2006) contend that supply quality is the source for imbalance in proportion of the inputs into their organisation's products, processes and services. The ability of suppliers to influence customer satisfaction also makes measuring supplier quality essential to longer-term market success. Many practitioners view supplier performance as a contributor to enhance the competitive advantage of a firm. Besides, managing supplier quality is a key to achieving good quality leading to a world-class success. Andrew (1994) explains that purchased inputs typically represent a large percentage of the value-added of a new product – often representing 60 to 80 per cent of the cost of goods sold. Purchased inputs thus have the potential to influence directly and substantively not only the cost and quality but also the development time of new products. Therefore supplier involvement can be used as a quality management tool to promote better resource utilization, the development and sharing of technological expertise, and network effectiveness.

From the literature it is quite evident that supplier quality management is a pervasive issue that requires a lot of managerial attention if the firms are to be successful because of the numerous benefits that accrue to

the practice. Flynn et al (1996) in his study found that there is a positive correlation between quality management and quality performance. However, the impact of supplier quality management has not been given the attention it deserves. The information known about this issue is largely derived from anecdotal evidence because many researchers and organizations have devoted their time to the management of the quality of finished goods than to supplier quality management (Trent and Monczka, 1999) forgetting the fact that the quality of the finished good is largely influenced by the quality offered by initial suppliers. This study thus sought to analyze the effect of supplier quality management on the performance of supermarkets in Kenya: A survey of supermarkets in Kakamega town. The following questions therefore arose; what are the supplier quality management practices employed in the supermarkets? What are the effects of such practices on the performance of the supermarkets?

The main objective of this study was to determine the effect of supplier quality management on organizational performance and the following specific objectives were formulated for the study:

- i) To determine the effect of supplier quality management on the service delivery levels of supermarkets.
- ii) To establish the effect of supplier quality management on the operational costs of supermarkets.

3. Methodology

The study was conducted in Kakamega town using a descriptive survey design. Data was collected from a key informant in all the six supermarkets operating in the study area using a structured questionnaire. The instrument used a five point Likert type scale to identify the supplier quality management practices employed by the supermarkets, their impact on the supermarkets' performance as well as the challenges faced. The questionnaire was piloted for validity and cronbach's alpha coefficient used to test the reliability of the measurement scales giving a 0.77 cronbach's alpha coefficient which is above the minimum acceptable threshold of 0.70 (Santos, 1999). The questionnaire was administered personally by the researchers and the data analysed descriptively. 83.3% of the questionnaires that were administered were returned which represents a reliable response rate. (Garland and Tweed, n.d.).

4. Results and Discussion

The objective of this study was to determine the effect of supplier quality management practices on organizational performance. The findings of the study showed that cumulatively, 80% of the supermarkets measured the performance of their supplier so as to enable them manage the suppliers' quality. A study by Paul et al. (2008) also indicated that performance measuring was very critical in providing the right framework for decision makers in the organizations. The respondents were also required to state whether they had any means of monitoring the performance of their suppliers as a supplier quality management practice. Cumulatively 80% of the supermarkets monitored the quality of their suppliers. Many respondents confirmed that in measuring and monitoring the quality of their suppliers' products, they had developed a score card for rating all their suppliers, which was in line with the framework advanced by Kaplan and Norton (1992).

The study also found out that conducting supplier audits was a very common practice among all the supermarkets, with 40% practicing to a great extent and 40% to a very great extent. This in most cases involved frequent visits to the suppliers' premises and evaluating the operational procedures followed. Conducting supplier audits as explained in a previous study by Andrew (1994) helps the two parties understand better what is expected in the relationship without compromising the nature of the relationship. It was also established that the supermarkets had various initiatives of developing their

suppliers. Supplier development programmes are usually aimed at improving the capability of the supplier, for the benefit of both parties. Supplier development activities range from simple advice to the suppliers extending to even major financing assistance to the vendors. It was established that all the supermarkets surveyed at least practiced supplier development with a cumulative 80% doing it to a great extent, an indication that they had recognized the benefits accruing from supply source development. This is in line with a study by Quayle (2000) that supplier development initiatives will result into good long term relationships between the buyers and the sellers.

The study also found out that supplier integration was a common practice among all the supermarkets, with 40% practising it to a great extent and 60% to a very great extent. Supply source integration helps the supermarkets collaborate with suppliers and develop the right quality products. This is in agreement with an earlier study by Andrew (1994) that those firms in Japan that practiced supplier integration were the most successful. It is also worth noting that incorporating the suppliers in product development is very important because typically over 60% of a product's cost will be determined during its development stage. The respondents were also asked to what extent they had engaged their suppliers into the supermarket's total quality management system. The study established that cumulatively, 80% of the supermarkets engaged their suppliers. These supported findings by Melissa et al. (2004) that such integration can enable the firms attain a competitive advantage because it leads to reduced lead times and high quality products. A cumulative 80% of the respondents selected their suppliers competitively. Competitive selection of suppliers enables the supermarkets get the right suppliers who can produce products that conform to specifications. A previous study by Ghodsypour and O'Brien (2001) indicated that firms that competitively select their suppliers improve their corporate competitiveness and decision making. The study also found out that some supermarkets used space allocations as part of supplier quality management. For example, they provided adequate space for displaying products and floor displays to suppliers for promotion purposes.

5. Conclusions and Recommendations

The findings show that performance measurement, supplier audits, supplier development and supplier integration are the most used supplier quality management practices. However, a close scrutiny showed that options which did cost the organizations little were the most commonly practiced, where as the ones costing more and demanding more involvement from the purchasing organization were least practiced. It is for example relatively easy to offer to enhance working relationships whatever the means in practice than providing capital, equipment and progress payments which are serious commitments to suppliers. It is therefore very clear that the purchasing organizations are not active in supplier quality management where it is necessary to input resources to assist their suppliers, yet, many were keen to get the suppliers to do more, presumably for the same cost.

The study established that the benefits that accrue from supplier quality management include reduced lead times, increased responsiveness to customers' orders and enquiries, customer loyalty, increased profitability, reduced opportunity cost from lost sales and effective communication between the organization suppliers as well as customers. Based on the findings, the following recommendations were made:

- i) The supermarkets should encourage their suppliers to maintain reliable records so as to avoid the problem of poor visibility and traceability.

- ii) Early identification of errors should be encouraged through pre-dispatch inspections so that disappointments are reduced at the customers' end.
- iii) The supermarkets should also decentralize their management structures so that decisions can be made faster and accurately.
- iv) Supplier should be encouraged to conform to product specifications so that customers get what they want at the right time.
- v) Senior level management in both the supermarkets and supplier organizations should be fully involved in the supplier quality management so that the whole exercise is not frustrated.

6. Suggestions for Further Research

The study recommends further studies on;

- i) Management responsibility in managing supplier quality management. This is because the firms' management are the organizations' agents of change and they play a vital role in ensuring continuous supply quality management.
- ii) Customers' perception of the suppliers' quality. Many organizations only focus on their management's evaluation of the suppliers' performance ignoring the customers' view. Research in this area would shed more light in this area and emphasize on the importance of the customers' input.
- iii) The study also suggested that further research be conducted on supplier quality management in service firms, more emphasis being laid on the technologies to use since most service firms are technology based or they heavily rely on modern technology.

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Appendix 1: Supermarkets in Kakamega Town

| | |
|---|-------------------------|
| 1 | NAKUMATT HOLDINGS |
| 2 | TUSKYS SUPERMARKET |
| 3 | YAKO MART |
| 4 | MAMA WATOTO SUPERMARKET |
| 5 | WALIAS SUPERMARKET |
| 6 | FOMAT SUPERMARKET |

Source: Municipal Council of Kakamega (2012)

Appendix 2: Data Analysis (Supplier Quality Management Practices)

| Measuring Performance of the Supplier | | | |
|--|-----------|---------|--------------------|
| | Frequency | Percent | Cumulative Percent |
| To a moderate extent | 1 | 20.0 | 20.0 |
| To a great extent | 3 | 60.0 | 80.0 |
| To a very great extent | 1 | 20.0 | 100.0 |
| Total | 5 | 100.0 | |

| Monitoring Performance of the Supplier | | | |
|---|-----------|---------|--------------------|
| | Frequency | Percent | Cumulative Percent |
| To a moderate extent | 2 | 40.0 | 40.0 |
| To a great extent | 2 | 40.0 | 80.0 |
| To a very great extent | 1 | 20.0 | 100.0 |
| Total | 5 | 100.0 | |

| Conducting Supplier Audits | | | |
|-----------------------------------|-----------|---------|--------------------|
| | Frequency | Percent | Cumulative Percent |
| To a moderate extent | 1 | 20.0 | 20.0 |
| To a great extent | 2 | 40.0 | 60.0 |
| To a very great extent | 2 | 40.0 | 100.0 |

| | | | |
|-------|---|-------|--|
| Total | 5 | 100.0 | |
|-------|---|-------|--|

Supplier Development

| | Frequency | Percent | Cumulative Percent |
|------------------------|-----------|---------|--------------------|
| To a low extent | 1 | 20.0 | 20.0 |
| To a moderate extent | 2 | 40.0 | 60.0 |
| To a great extent | 1 | 20.0 | 80.0 |
| To a very great extent | 1 | 20.0 | 100.0 |
| Total | 5 | 100.0 | |

Supplier Integration

| | Frequency | Percent | Cumulative Percent |
|------------------------|-----------|---------|--------------------|
| To a great extent | 2 | 40.0 | 40.0 |
| To a very great extent | 3 | 60.0 | 100.0 |
| Total | 5 | 100.0 | |

Supplier Engagement in the Supermarket's Total Quality Management System

| | Frequency | Percent | Cumulative Percent |
|------------------------|-----------|---------|--------------------|
| To a moderate extent | 2 | 40.0 | 40.0 |
| To a great extent | 2 | 40.0 | 80.0 |
| To a very great extent | 1 | 20.0 | 100.0 |
| Total | 5 | 100.0 | |

Competitive Supplier Selection

| | Frequency | Percent | Cumulative Percent |
|------------------------|-----------|---------|--------------------|
| To a low extent | 2 | 40.0 | 40.0 |
| To a great extent | 2 | 40.0 | 80.0 |
| To a very great extent | 1 | 20.0 | 100.0 |
| Total | 5 | 100.0 | |

Source: Research data (2012)