THE EFFECT OF OUTSOURCING ON SUPPLY CHAIN PERFORMANCE AT CADBURY KENYA LIMITED

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Abstract: Outsourcing has become an important aspect of the overall strategy of any organization. However, despite the many benefits accrued to outsourcing the level of outsourcing in an organization affects management activities in one way or another and extensive outsourcing can lead to loss of internal controls in the organization. The general objective of this study was to establish the effect of outsourcing on supply chain performance at Cadbury Kenya Limited. The study also sought to establish the effect of suppliers’ selection criteria, supplier-firm relationship and information systems integration on the supply chain performance at Cadbury Kenya Limited. The study used a case study design. The target population of this study was therefore 127 staff working in Cadbury Kenya Limited. This study used a stratified random sampling to select 50% of the target population. The sample size of this study was therefore 64 respondents. This study used primary data that was collected by use of questionnaires. This study generated both quantitative and qualitative data. Content analysis was used in processing qualitative data and results were presented in prose form. On the other hand, the quantitative data in this research was analyzed by descriptive statistics and inferential statistics using Statistical Package for Social Sciences (SPSS version 21). Data was then presented in tables, charts and graphs. The study also used a multivariate regression analysis to establish the relationship between the dependent variable and dependent variables. This study found that suppliers' selection criteria influences supply chain performance at Cadbury Kenya Limited most followed by supplier-firm relationship and information system integration. The study recommends that Cadbury Kenya Limited should improve their suppliers’ selection criteria by considering suppliers outsourcing cost, reliability, efficiency, experience, performance history, quality of services and delivery performance. The study also recommends that Cadbury Kenya Limited should improve its relationship with suppliers by considering trust, communication, commitment, loyalty, information sharing, relationship quality and relationship magnitude. This study further recommends that Cadbury Kenya Limited should seek for more information systems integration with suppliers so as to enable them to access their suppliers systems.

Key Words: Outsourcing, Suppliers’ competence, Supplier-firm relationship, Information systems

Introduction

Globalization has lead in an increased competition between companies, which has in turn resulted in several market developments such as increased product variety, increased amounts of customer-specific products, and shortening product life cycles (Chopra & Meindl, 2007). To remain competitive in this business environment, companies have started to concentrate on those activities that they regard as their core business, and outsource the rest to specialists (Christopher & Towill, 2002). The increased outsourcing of non-core activities has created an emerging
business opportunity attracting several new actors to enter the market and fill the demand for new services (Faisal, Banwet & Shankar, 2006), especially in the logistics area. Outsourcing of logistics in general, also referred to as third party logistics (3PL), has received considerable attention in the literature (Hakkinen et al., 2004). It involves the use of external companies – generally referred to as 3PL providers – to perform logistics functions, which have traditionally been performed by the company itself (Halldorsson & Skjoett-Larsen, 2004).

The functions performed by 3PL providers can encompass the entire logistics process or selected activities within that process. It can involve traditional logistics functions such as in- and outbound transportation, warehousing as well as other services such as reverse logistics and information systems. Still, they typically specialize in integrated warehousing and transportation services that can be scaled and customized according to customer's requirements (Lau & Zhang, 2006). These services have to be provided faster, in higher quality, and in more efficient manner than ever before (Marasco, 2008).

The drive for greater efficiencies and cost reductions has forced many organizations to increasingly specialize in a limited number of key areas. According to Lau and Zhang (2006) most companies view outsourcing as a strategy for cutting costs, accessing new skills and capabilities, and achieving greater financial flexibility. A key issue that has emerged for many organizations is the growing importance of outsourcing (Hilletofth & Hilmola, 2010). The underlying foundation of these trends is that, competition results in improved outcomes such as greater efficiency, higher quality of service, a clearer focus on customers and better value for money. This has led organizations to outsource activities traditionally carried in-house (Kiirui, 2001).

According to Lau and Zhang (2006) the decision to contract a third party provider to provide a logistics and shuttle services on behalf of the organization rather than offering them in house reduces costs and improves the logistics operations. He adds that for any supply chain to remain competitive and to improve service delivery in the face of declining resources it has to outsource non core functions like logistics and transportation. Chopra and Meindl (2007) assert that outsourcing of the logistics function enables a supply chain to be competitive through economies of scale due to mass production by the third party provider, process expertise as a result of the third party provider having more experience in the service provision, and access to advanced and updated technology, etc.

Outsourcing has been adopted in various parts of the country. Globally, Hilletofth and Hilmola (2010) conducted a study on the role of logistics outsourcing on supply chain strategy and management in Northern Europe. They established that warehousing, IT, and customs brokerage outsourcing could have impact on some managerial and strategic aspects of supply chains (SC). They also established that in-house produced IT function, and potentially outsourced warehousing, have important roles in more international purchasing.

In the Kenyan context various companies have adopted outsourcing. These companies include British American Tobacco, East African breweries limited, pharmaceutical companies among others. Kiirui (2001) did a study on competitive advantage through outsourcing of non-core logistics activities within the supply chain of British American Tobacco Kenya. He established
that through outsourcing, BAT Kenya achieved better focus on its core business, reduced logistics costs, and improved management of working capital and service quality to its customers. Because logistics is central to a company's service quality as well as its cost structure, innovative approaches to logistics management such as outsourcing of non-core logistics activities are of particular importance. As companies in Kenya become more familiar with outsourcing within their logistics functions and as credibility and capabilities of outsourcers increase, outsourcing is certain to increase.

Statement of the problem

Outsourcing has become an important aspect of the overall strategy of any organization. It can be considered as a panacea for every company which wants to leverage its competitive advantage (Lu, Meng & Goh, 2014). Globally many manufacturing organizations have outsourced non-core activities like ground maintenance, transport and logistics, warehousing, factory services, catering, security, IT, freight, cleaning services, and human resource. This allows them to concentrate on the core and value adding activities. After exhausting the traditional modes of cost cutting such as staff rationalization and overheads reduction, outsourcing has become the most favored avenue for cost cutting with the idea being to outsource non-core business functions leaving the company to concentrate on its core objectives (Chopra & Meindl, 2007). Various benefits of outsourcing include increased market coverage, improved customer service, reduction in capital investments, cost savings, reduction in the complexity of logistics operations and increased flexibility towards the changing requirements of customers (Schoenherr, 2010).

However, despite the many benefits accrued to outsourcing the level of outsourcing in an organization affects management activities in one way or another and extensive outsourcing can lead to loss of internal controls in the organization (Ciravegna, Romano & Pilkington, 2013). Outsourcing presents special risks and relying on third parties to perform some functions decreases management’s control over the operations and therefore requires management intensified oversight efforts. Compliance risk exists when products, services or system associated with third-party relationship are not in compliance with applicable laws, rules or regulations, or are not consistent with ethical standards and policies and procedures, which affects the supply chain performance of an organization (Lu, Meng & Goh, 2014).

Various studies have been conducted in Kenya on outsourcing. For instance Kiirui (2001) did a study on competitive advantage through outsourcing of non-core logistics activities within the supply chain of British American Tobacco Kenya. On the other hand, Kariko (2012) did a study on logistics outsourcing and supply chain performance: a survey of universities in Nairobi county. This study sought to establish the effect of outsourcing on supply chain performance in Cadbury Kenya Limited.

The specific objectives of this study were;

i. To establish the effect of suppliers selection criteria on the supply chain performance at Cadbury Kenya Limited

ii. To determine the effect of supplier-firm relationship on the supply chain performance at Cadbury Kenya Limited
iii. To find out the information systems integration the supply chain performance at Cadbury Kenya Limited

**Theoretical Review**

This sections review theories and models related to the study variables. Supplier selection model are used to explain the supplier selection criteria, commitment trust theory is used to explain supplier firm relationship and technology acceptance model is used to explain information systems integration.

**Commitment-Trust Theory**

Morgan and Hunt (2006) introduced one of the most cited theories in relationship management. They argued that trust and relationship commitment are the key mediators in the exchange between participants, which essentially lead to building a relational co-operation. The growth of various forms of relationship has put trust in a centre stage mainly because of the belief that trust is essential in establishing co-operative relationships (Handfield & Bechtel, 2007). Interest in trust has generated a substantial amount of research from various disciplines such as economy, psychology, sociology, and organization. While disciplinary differences exist, trust is a very complex construct with multiple meanings and dimensions. Delimiting the scope of trust is difficult and can be frustrating as the construct essentially is linked with other constructs such as opportunism, uncertainty and power. All definitions of trust suggest that trust involves one party having confidence in or relying on another party to fulfill its obligations (Nicholson, Compeau & Sethi, 2009).

The presence of relationship commitment and trust is central to successful outsourcing relationship although there is no doubt that many contextual factors contribute to the success or failure outsourcing. Commitment and trust are important because they encourage parties involved in day-to-day operations to work at preserving relationship investments by cooperating with exchange partners and resist attractive short-term alternatives in favor of the expected long-term benefits of staying with existing partners. Therefore, when both commitment and trust, not just one or the other, are present, they produce outcomes that promote efficiency, productivity, and effectiveness.

**Technology Acceptance Model for Information systems**

One of the well-known models related to technology acceptance and use is the technology acceptance model (TAM), originally proposed by Davis in 1986. TAM has proven to be a theoretical model in helping to explain and predict user behavior of information technology (Legris, Ingham, & Collerette, 2003). TAM is considered an influential extension of theory of reasoned action (TRA), according to Ajzen and Fishbein (2002). Davis, Bagozzi, and Warshaw (2001) proposed TAM to explain why a user accepts or rejects information technology by adapting TRA. TAM provides a basis with which one traces how external variables influence belief, attitude, and intention to use. Two cognitive beliefs are posited by TAM: perceived usefulness and perceived ease of use. According to TAM, one’s actual use of a technology system is influenced directly or indirectly by the user’s behavioral intentions, attitude, perceived usefulness of the system, and perceived ease of the system. TAM also proposes that external
factors affect intention and actual use through mediated effects on perceived usefulness and perceived ease of use (Legris, Ingham & Collerette, 2003). An outsourcing organization should adopt information system so as to enable easier information exchange with the supplier. In addition, the information system of the supplier should be compatible with that of the outsourcing firm.

**Conceptual Framework**

![Conceptual Framework Diagram](image)

**Independent Variable**

**Dependent Variable**

**Suppliers Selection Criteria**

Suppliers have been acknowledged as the best intangible assets of any business organization. However, selecting the right suppliers for a long term relationship is a relevant procurement issue that demands judicious attention. According to Schmitz and Platts (2004), “supplier selection problem has become one of the most important issues for establishing an effective supply chain system.” Indeed, supplier selection and evaluation represents one of the significant roles of purchasing and supply management functions (Chen & Huang, 2007). Tracey and Tan (2001) note that one of the key elements essential to supply chain success is effective purchasing function. Arguably, purchasing and supply chain plays a crucial role in supply chain management through proper selection of competent suppliers. Weber, Current, and Benton, (2008) affirm that firms cannot successfully produce low cost, high quality products without judicious selection and maintenance of a competent group of suppliers. Kumara et al. (2003) emphasize that selection of the best supplier is an essential strategic issue imperative for supply chain effectiveness and efficiency. Kumara et al. (2003) contend that strategic partnership with the right suppliers must be integrated within the supply chain to contain costs, improve quality and flexibility to meet end-customers’ value and reduce lead time at different stages of the supply chain. Purchasing and supply management support the management of supplier network with respect to identification of supplier selection criteria, supplier selection decisions, and monitoring of supplier performance (Schmitz & Platts, 2004).

**Supplier-Firm Relationship**

All successful companies build strong relationships with their suppliers. Companies are not isolated entities that simply purchase goods and services from individuals who happen to be able
to supply them at that particular time (Hilletofth & Hilmola, 2010). Companies typically make larger purchases. In reality, successful companies recognize the need to build bridges between their organization and the vendors that they work with by establishing strong buyer/seller relationships (Halldorsson & Skjoett-Larsen, 2004). Supplier relationships are different from simple purchasing transactions in several ways. First, there can be a sense of commitment to the supplier. For example, if a vendor sells light bulbs, he can feel confident that the buyer will come to him the next time the company he represents requires a new shipment of light bulbs. Another element of these supplier relationships is advanced planning. Buyers do not just communicate with suppliers when a procurement need arises; they also contact them in order to discuss their future needs and to determine how best to satisfy those needs by working together. According to Chopra and Meindl (2007), the missing link in many research studies examining the role of information sharing and improved performance is visibility. These authors argue that information sharing is not directly linked to firm performance. Instead, linking information sharing to visibility could be viewed as a two-stage process. First, the recipient of the information determines the extent to which it is accurate, timely, and useful. If the information passes these tests then it provides visibility (Christopher & Towill, 2002). The second stage involves incorporating the information into the recipients' decision-making processes to make more informed decisions. The logic extends that more informed decision making leads to informed performance (Ciravegna, Romano & Pilkington, 2013).

**Information Systems Integration**

With advances in information technology (IT), information systems integration (ISI) and its role in an integrated supply chain have become important to executives and researchers (Schoenherr, 2010). ISI represents the degree of cooperation in information system practices between business functions within a firm and between a firm and its trading partners. It has been documented that the introduction and utilization of ISI for supply chain management enhance the firms' competitiveness and growth (Lu, Meng & Goh, 2014). While many firms focus on achieving high levels of IT utilization, without high levels of ISI, supply chain members may not attain the full benefits of working within a supply chain (Marasco, 2008). Previously, the introduction of IT was viewed as a back office support limited to the automation of clerical functions (Handfield et al., 2009). With the realization of global competition and advances in information technology, the utilization of IT can have a direct effect on value creation by integrating firm’s supply chain activities resulting in higher quality products, enhanced productivity, efficient machine utilization, reduced space and increased logistics efficiency and flexibility.

Supply chain integration is defined as the extent to which a firm coordinates activities with suppliers and customers. Supply chain integration links a firm with its customers, suppliers, and other channel members by integrating their relationships, activities, functions, processes and locations (Beaumont & Sohal, 2004). Having an integrated supply chain provides significant competitive advantage including the ability to outperform rivals on both price and delivery. The concept of supply chain integration was studied as early as 1989 by Bowersox. He argued that the process of supply chain integration should progress from the internal logistics integration to external integration with suppliers and customers (Cuthbertson & Piotrowicz, 2011). Both can be accomplished by the continuous automation and standardization of each internal logistics function and by efficient information sharing and strategic linkage with suppliers and customers. Gunasekaran, Patel and McGaughey (2004) suggested that the development of internal supply

**Research Methodology**

The study used a case study design. Case study methods involve an in-depth examination of a single instance or event. It is a systematic way of looking at events, collecting data, analyzing information and reporting the results. This study only focused on Cadbury Kenya Limited. The target population of this study was all the 127 staff working in Cadbury Kenya Limited. This study used a stratified random sampling to select 50% of the target population. In this study, the strata were various departments in Cadbury Kenya Limited. In determining sample size Zikmund (2003) indicated that for small populations \((N < 100)\), there is little point in sampling and surveys should be sent to the entire population and for a population size \(N \approx 500\), a 50% of the population should be sampled. The sample size of this study was therefore 64 respondents.

**Table 1: Sample Size**

<table>
<thead>
<tr>
<th>Department</th>
<th>Target Population</th>
<th>Sample Size (50%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>32</td>
<td>16</td>
</tr>
<tr>
<td>Human resource</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td>Procurement</td>
<td>24</td>
<td>12</td>
</tr>
<tr>
<td>Marketing</td>
<td>32</td>
<td>16</td>
</tr>
<tr>
<td>Finance</td>
<td>21</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>127</td>
<td>64</td>
</tr>
</tbody>
</table>

Semi-structured questionnaires were used in this study to collect primary data. Questionnaires are the most commonly used methods when respondents can be reached and are willing to cooperate. This study generated both quantitative and qualitative data. Qualitative data, which was obtained from the open ended questions, was analyzed using content analysis was and results was presented in prose form. On the other hand, the quantitative data in this research was analyzed by descriptive statistics and inferential statistics using Statistical Package for Social Sciences (SPSS version 21). Descriptive statistics included measures of central tendencies (mean), measures of dispersion (standard deviation), frequencies and percentages. Data was then presented in tables, charts and graphs. The study also used a multivariate regression analysis to establish the relationship between the dependent variable and dependent variables.

The regression model was;

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \pi \]

Where \(Y\) was the dependent variable and \(X_1\) to \(X_3\) are the independent variables.

- \(\beta_0\) = Constant (Regression coefficient)
- \(\beta_{1-4}\) = Regression coefficients or change induced in \(Y\) by each \(X\)
- \(X_1\) = suppliers selection criteria
- \(X_2\) = supplier-firm relationship
- \(X_3\) = information system integration
- \(\pi\) = Error term normally distributed about the mean of zero
Results and Discussions

The sample size of this study was 64 staffs who were working in the supply chain departments at Cadbury Kenya Limited, out of which 60 responses were obtained, which represents a 93.75% response rate. According to Babbie (2002) any response of 50% and above is adequate for analysis thus 93.75 % is even better.

According to the findings, 98.33% of the respondents indicated that their organization had done outsourcing while 1.67% indicated that their organization had not done any outsourcing. From these findings we can deduce that Cadbury Kenya Limited had done outsourcing. The respondents also indicate that Cadbury Kenya Limited was outsourcing raw materials like fresh whole milk, skimmed milk, butteroil, sugar, and cocoa. In addition, the company outsources security services, transport services, training services and marketing services.

Suppliers’ selection criteria

The respondents were requested to indicate the extent to which various aspects of suppliers selection criteria influence the supply chain performance of their organization. From the findings, the respondents indicated with a mean of 4.350 and a standard deviation of 0.387 that suppliers' experience influences the supply chain performance of their organization to a great extent. In addition, the respondents reported with a mean of 4.333 and a standard deviation of 0.334 that performance history influences the supply chain performance of their organization to a great extent. Further, the respondents indicated with a mean of 4.233 and a standard deviation of 0.657 that the suppliers' reliability influences the supply chain performance of their organization to a great extent. In addition, the respondents indicated with a mean of 4.167 and a standard deviation of 0.834 that suppliers' delivery performance influences the supply chain performance of their organization to a great extent. The respondents also indicated with a mean of 4.033 and a standard deviation of 0.822 that quality of services influences the supply chain performance of their organization to a great extent. Additionally, the respondents indicated with a mean of 3.900 and a standard deviation of 0.532 that outsourcing cost influences the supply chain performance of their organization to a great extent. Lastly, the respondents indicated with a mean of 3.900 and a standard deviation of 0.611 that efficiency influences the supply chain performance of their organization to a great extent.

Table 2: Aspects of suppliers’ selection criteria and supply chain performance

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std.dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outsourcing cost</td>
<td>3.900</td>
<td>0.532</td>
</tr>
<tr>
<td>Reliability</td>
<td>4.233</td>
<td>0.657</td>
</tr>
<tr>
<td>Efficiency</td>
<td>3.900</td>
<td>0.611</td>
</tr>
<tr>
<td>Experience</td>
<td>4.350</td>
<td>0.387</td>
</tr>
<tr>
<td>Performance history</td>
<td>4.333</td>
<td>0.334</td>
</tr>
<tr>
<td>Quality of services</td>
<td>4.033</td>
<td>0.822</td>
</tr>
<tr>
<td>delivery performance</td>
<td>4.167</td>
<td>0.834</td>
</tr>
</tbody>
</table>
Supplier-firm relationship

The respondents were also asked to indicate the extent to which various aspects of supplier-firm relationship affect the supply chain performance of their organization. From the findings, the respondents reported with a mean of 4.283 and a standard deviation of 0.762 that information sharing influences supply chain performance in their organization to a great extent. The respondents also reported with a mean of 4.217 and a standard deviation of 0.872 that communication influences the supply chain performance of their organization to a great extent. Further, the respondents indicated with a mean of 4.167 and a standard deviation of 0.762 that relationship quality influences the supply chain performance of their organization to a great extent. In addition, the respondents indicated with a mean of 4.067 and a standard deviation of 0.912 that commitment influences the supply chain performance of their organization to a great extent. The respondents also indicated with a mean of 3.983 and a standard deviation of 0.872 that relationship magnitude influences the supply chain performance of their organization to a great extent. Additionally, the respondents indicated with a mean of 3.900 and standard deviation of 0.544 that trust influences the supply chain performance of their organization to a great extent. Lastly, the respondents indicated with a mean of 3.867 and a standard deviation of 0.433 that loyalty influences the supply chain performance of their organization to a great extent.

Table 3: Aspects of Supplier-firm Relationship on supply chain performance

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Mean</th>
<th>Std.dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust</td>
<td>3.900</td>
<td>0.544</td>
</tr>
<tr>
<td>Communication</td>
<td>4.217</td>
<td>0.872</td>
</tr>
<tr>
<td>Commitment</td>
<td>4.067</td>
<td>0.912</td>
</tr>
<tr>
<td>Loyalty</td>
<td>3.867</td>
<td>0.433</td>
</tr>
<tr>
<td>Information sharing</td>
<td>4.283</td>
<td>0.762</td>
</tr>
<tr>
<td>Relationship quality</td>
<td>4.167</td>
<td>0.762</td>
</tr>
<tr>
<td>Relationship magnitude</td>
<td>3.983</td>
<td>0.872</td>
</tr>
</tbody>
</table>

Information systems Integration

The respondents were also asked to indicate whether their organization use any information system. From the findings, 78.3% of the respondents indicated that their organization use information system while 21.7% indicated that their organization was not using information system. From these findings we can deduce that Cadbury Kenya Limited uses information system.

In relation to the compatibility of the information system with that of the suppliers, 78.3% of the respondents indicated that their information system is compatible with the supplier’s information system while 21.7% indicated that their information system is not compatible with the supplier’s information system. From these findings, we can deduce that their information system is compatible with the supplier’s information system.

The respondents were asked to indicate whether information system in cooperate the stated components. According to the findings, 95% of the respondents indicated that their information
system in-cooperate real-time communications while 95% disagreed. In addition, 90% of the respondents indicated that their information system in-cooperate distribution requirements planning while 10% disagreed. In addition, 86.7% indicated that their information system in-cooperate Logistics planning systems (LPS) while 13.33% disagreed. Additionally, 75% of the respondents indicated that their information system in-cooperate Logistics operating systems (LOS) while 25% disagreed. Lastly, 66.7% of the respondents indicated that their information system in-cooperate Electronic Data Interchange (EDI) while 33.3% disagreed.

**Table 4: Components of Information System**

<table>
<thead>
<tr>
<th>Component</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logistics planning systems (LPS)</td>
<td>52</td>
<td>86.7</td>
</tr>
<tr>
<td>Logistics operating systems (LOS)</td>
<td>45</td>
<td>75</td>
</tr>
<tr>
<td>Distribution requirements planning</td>
<td>54</td>
<td>90</td>
</tr>
<tr>
<td>Electronic Data Interchange (EDI)</td>
<td>40</td>
<td>66.7</td>
</tr>
<tr>
<td>Real-time communications</td>
<td>57</td>
<td>95</td>
</tr>
</tbody>
</table>

**Regression Analysis**

The study also used a multivariate regression analysis to establish the relationship between the dependent variable and dependent variables.

The regression model was;

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \pi \]

Where \( Y \) was the dependent variable and \( X_1 \) to \( X_3 \) are the independent variables. \( \beta_0 \) was Constant (Regression coefficient), \( \beta_{n-1} \) were regression coefficients or change induced in \( Y \) by each \( X \). \( X_1 \) was suppliers selection criteria, \( X_2 \) was supplier-firm relationship, \( X_3 \) was information system integration and \( \pi \) was Error term normally distributed about the mean of zero.

**Table 5: Model Summary**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.636a</td>
<td>.405</td>
<td>.373</td>
<td>.55597</td>
</tr>
</tbody>
</table>

The three independent variables that were studied, explain a variation 37.3% of the supply chain performance at Cadbury Kenya Limited as represented by the \( R^2 \). This therefore means that other factors not studied in this research contribute 62.7% supply chain performance at Cadbury Kenya Limited.
The table 4.7 shows the analysis of variance. The results indicated that the model was significant since the p-value is 0.000 which is less than 0.05 thus the model is statistically significance in predicting how suppliers' selection criteria, supplier-firm relationship and information system integration influence supply chain performance at Cadbury Kenya Limited. The F critical at 5% level of significance was 2.4472. Since F calculated (12.686) is greater than the F critical. This shows that the overall model was significant.

**Table 7: Coefficients**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>.105</td>
<td>.476</td>
<td>.220</td>
<td>.827</td>
</tr>
<tr>
<td>Suppliers' selection criteria</td>
<td>.535</td>
<td>.135</td>
<td>.601</td>
<td>3.964</td>
</tr>
<tr>
<td>Supplier-firm relationship</td>
<td>.339</td>
<td>.128</td>
<td>.444</td>
<td>2.649</td>
</tr>
<tr>
<td>Information system integration</td>
<td>.495</td>
<td>.146</td>
<td>.456</td>
<td>3.389</td>
</tr>
</tbody>
</table>

The regression equation was; 

\[ Y = 0.105 + 0.535 \times X_1 + 0.339 \times X_2 + 0.495 \times X_3 + \varepsilon \]

The regression equation above has established that taking all factors into account (suppliers' selection criteria, supplier-firm relationship and information system integration) constant at zero supply chain performance at Cadbury Kenya Limited will be 0.105 units. The findings presented also show that there is a positive significant relationship between suppliers' selection criteria and supply chain performance at Cadbury Kenya Limited as shown by a coefficient of 0.535 (p-value=0.000). This shows that a unit increase in suppliers' selection criteria would lead to a 0.535 improvement in supply chain performance at Cadbury Kenya Limited. In addition, there is a positive significant relationship between supplier-firm relationship and supply chain performance at Cadbury Kenya Limited as shown by a coefficient of 0.339 (p-value=0.010). A unit increase in supplier-firm relationship leads to a 0.339 improvement in supply chain performance at Cadbury Kenya Limited. Further, the findings show that there is a significant positive relationship between information system integration and supply chain performance at Cadbury Kenya Limited as shown by a coefficient of 0.495 (p-value = 0.001). A unit increase in information system integration would lead to a 0.495 improvement supply chain performance at Cadbury Kenya Limited. This infers that supplier selection criteria influences supply chain performance at Cadbury Kenya Limited most followed by supplier-firm relationship and information system integration.
Conclusion

The study recommends that there is a positive significant relationship between suppliers' selection criteria and supply chain performance at Cadbury Kenya Limited. The study also established that suppliers' experience, performance history, suppliers' reliability, suppliers' delivery performance, quality of services, outsourcing cost and efficiency influences the supply chain performance of their organization to a great extent.

In addition, the study concludes that there is a positive significant relationship between supplier-firm relationship and supply chain performance at Cadbury Kenya Limited. The study also found that information sharing, communication, relationship quality, commitment, relationship magnitude, trust and loyalty influences the supply chain performance of their organization to a great extent.

Further, the study concludes that there is a significant positive relationship between information system integration and supply chain performance at Cadbury Kenya Limited. The study found that the information system at Cadbury Kenya Limited have in-cooperated real-time communications, distribution requirements planning, Logistics planning systems (LPS), Logistics operating systems (LOS) and Electronic Data Interchange (EDI).

Recommendations

This study established that suppliers outsourcing cost, reliability, efficiency, experience, performance history, quality of services and delivery performance influence supply chain performance. The study therefore recommends that Cadbury Kenya Limited should improve their suppliers’ selection criteria by considering suppliers outsourcing cost, reliability, efficiency, experience, performance history, quality of services and delivery performance.

The study also recommends that Cadbury Kenya Limited should improve its relationship with suppliers by considering trust, communication, commitment, loyalty, information sharing, relationship quality and relationship magnitude.

The study established that Cadbury Kenya Limited had no access to supplier’s information system. This study therefore recommends that Cadbury Kenya Limited should seek for more information systems integration with suppliers so as to enable them to access their suppliers systems.

Areas for Further Research

From the study and related conclusions, the researcher recommends further research in the area of the role of outsourcing on supply chain performance at other Limited Companies in Nairobi, Kenya. The study also recommends further studies on the effect of information system integration on supply chain performance.

References


