



RESEARCH ARTICLE

RELATIONSHIP BETWEEN SERVICE OUTSOURCING AND SUPPLY CHAIN PERFORMANCE OF CEMENT MANUFACTURING FIRMS IN KENYA

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ABSTRACT

Service outsourcing is a concept that has been widely adopted by many manufacturing firms in today's world. Globalization has been the main reason of outsourcing. Companies have therefore worked tirelessly in order to find out new ways of running their business without losing track of their main reasons for existence. This has therefore prompted them to outsource services and this includes having their non-core functions being performed by third parties. Cement manufacturing firms namely:-Mombasa Cement Ltd, ARM Cement Ltd, Bamburi Cement Ltd, Savannah Cement Ltd, East African Portland Cement Company Ltd and National Cement Ltd., outsource their non-core functions which include:- security guard, laundry, cleaning, catering, transport and logistics, information technology and customer care services. This study therefore sought to determine the relationship between service outsourcing and supply chain performance of cement manufacturing firms in Kenya. The research used a cross sectional research design. Primary data was collected using questionnaires and administered to 53 heads of department in the cement manufacturing firms in Kenya. The data was analyzed using regression and correlation analysis. The study established that cement manufacturing firms outsourced services in order to reduce their operating costs, concentrate on their main functions, increase quality and to improve response to the changing market demands. The study concludes that cement manufacturing firms outsource services and accrue various benefits including ability to concentrate on their main functions, risk sharing, cost reduction and increase in quality. The study then recommends that performance contracting for the case of service providers.

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INTRODUCTION

Globalization has posed numerous challenges to businesses. This has forced many businesses to look for alternative means of running their operations without losing track of their main reasons for existence. It is an efficient cost cutting strategy if well utilized. Companies sometimes find it affordable to purchase goods than to produce them internally. Service outsourcing is one of the ways in which businesses use to lower costs associated with their non-core functions. This is important to organizations since they get the chance to concentrate on their main duties (Brown and Wilson, 2005). Service outsourcing refers to the contracting of all service functions of an organization to third parties such as: news; medical; supply chain; financial and legal services (Brown and Wilson, 2005). Service outsourcing has become a key undertaking in today's business world. According to Johnson (2008) and Leavitt (2007), the main aim of outsourcing was to reduce costs.

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Service Outsourcing is an important aspect in business since all the activities that were initially performed in house are contracted to third parties (Karmarkar and Apte, 2007). This has allowed many organizations to focus more on their core functions while achieving quality, speed, flexibility, access to new talents and innovations in delivering value to the final consumers. Supply chain performance can be defined as the supply chain practices aimed at meeting the end user requirements which includes the on time delivery of the right products and services, at the right place, the right quantities and in their right quantities (Hausman, 2004). Supply chain management is usually comprised of four major activities which are: planning, sourcing, make or assemble and final delivery to customer (Stewart, 1995; Gunasekaran et. al., 2001). Positive supply chain outcomes are usually dependent on the efficiency and effectiveness of the supply chain systems. Van Hoek, Harrison and Christopher (2001) assert that, "to assess the supply chain performance, Supply Chain metrics must center on customer satisfaction". Some of the metrics of customer satisfaction and service are; customer query time, flexibility and post transactional metrics of customer service.

Hausman (2004) asserts that supply chain performance is a broad area which encompasses the basic materials, finished products, sub-assemblies, distribution of the materials through various channels to the end consumer. The traditional functional lines of an organization which include: distribution; manufacturing; procurement; research and development and sales and marketing have also been included in the supply chain performance as they aim in achieving responsiveness in delivering services to the end customers. Supply chain effectiveness ensures increased customer satisfaction and the overall supply chain performance. Cement manufacturing firms have been in existence for decades in Kenya. Some have been newly formed while others are still in the process of formation. Cement is an essential building material used in the construction industry in Kenya. World Bank and OECD (1998) found out that industries in Kenya contribute 18% of Kenyas GDP. Initially, the Kenyan government relied heavily on importation of finished products. In the early 1990s, import substitution industrialization strategy was introduced in the manufacturing sector. Its main aim was to enhance local manufacturing by blocking and discouraging manufacturing imports from abroad. With the growing knowledge, the government adopted export oriented industrialization in order to replace import substitution industrialization (World Bank and OECD, 1998).

After a period of slow growth in Kenya, the manufacturing sector picked up between 2004 and 2005 with the outputs increasing by 4.1% (World Bank, 2007). This was after the government had given incentives to the sector and demands for the products had risen. There are six (6) cement manufacturing firms in Kenya namely ARM Cement Ltd, Bamburi Cement Ltd, East African Portland Cement Ltd, National Cement Ltd, Mombasa Cement Ltd and Savannah Cement Ltd. Others are still in the process of formation including Cemtech Cement Ltd. in West Pokot and Dangote Cement Ltd. in Kitui. Common wealth network (2016) confirms that the manufacturing sector is of great significance to the Kenyan economy. In 2011, 254,000 people had been employed in the manufacturing sector and this translates to 13% of the total Kenyan employment and this contributed \$285,698 towards the GDP. According to the East African Cement Producers Association (2009), cement consumption in East Africa is continuously growing and this indicates economic growth and strength of the country. Underdeveloped institutional frameworks, physical infrastructure and limited financial access have led to higher costs of carrying out the business and lowered the capital injection (Mars Group Kenya, 2011). Through government subsidies to the cement manufacturing firms, it will be easier for the firms to manufacture the products at lower costs and also sell to the end user at lower costs. Service outsourcing is a function that has evolved due to globalization and dynamic business environment. The urge to meet the changing market demands prompt business organizations to reduce supply chain costs (Leavitt, 2007), concentrate on their core competencies (Brown and Wilson, 2005) and increase flexibility (Johnson, 2008). Service outsourcing will increase Kenya's GDP if emphasized in business organizations. Outsourcing a provider whose expertise will address a firm's weakness, analyzing performance data and cost cutting are some of the strategies that will ensure supply chain efficiency and increased productivity (Manpower Group, 2012). Service outsourcing is increasingly being adopted by cement manufacturing firms in Kenya since they are able to concentrate more on their core

functions (Brown and Wilson, 2005), while achieving speedy delivery of services, improved quality, flexibility and access to new talents and innovations in delivering value to the end user (Kakabadse and Kakabadse, 2000). The main challenges that cement manufacturing firms in Kenya are facing today is how to deliver the right products, in the right quality and quantity, at the right place and in the right time. Failure to address these challenges leads to lack of trust hence reduced customer loyalty and reduced market share. By looking at the practice in other industries, cement manufacturing firms in Kenya have turned to service outsourcing in managing some of their business aspects. This will enhance value creation and value addition (Kakabadse and Kakabadse, 2000). In his studies, Ogolla (2013) found a positive significant relation between outsourcing and organizational performance. In corroboration, Mazlan and Ali (2006) also found a positive significant relation between out sourcing and supply chain management. These past studies have focused more on the outsourcing and organizational performance. Little is known about the extent of this relationship specifically among cement manufacturing firms in Kenya. Whereas the past studies focused on outsourcing, this study focuses of service outsourcing and supply chain performance. Thus, this study sought to fill the gap by examining the relationship between service outsourcing and supply chain performance of cement manufacturing firms in Kenya. The study tested the following hypothesis: H_0 There is no significant relationship between service outsourcing and supply chain performance in cement manufacturing companies in Kenya. H_A There is a significant relationship between service outsourcing and supply chain performance of cement manufacturing firms in Kenya.

Conceptual framework

Figure 1 guided the study and determined the relationship that existed between the dependent and independent variables. It is expected that through service outsourcing, there will be changes in supply chain performance among the cement manufacturing firms in Kenya. Bender (1999) affirms that the world is embracing the practice of outsourcing and firms too are adopting this phenomenon in order to expand into other global markets. Some of the services outsourced by firms are: customer service support, transport and logistics services, laundry, cleaning, security guard services, information technology and catering services. In 2008, the non-residential market accounted for three quarters of the total cleaning services (The Freedonia Group, 2010). They further found out that outsourcing cleaning services in non-residential markets aimed at cutting costs. Catering outsourcing is an outsourcing practice that is commonly being adopted by cement manufacturing firms. According to the HM revenue and customs (2014), subsidized or free meals can be provided on the employer's grounds or building or in any canteen where food can be given to employees only. According to Wang et al., (2008), IT capabilities are usually important in improving the value of business and through IT outsourcing, the performance of cement manufacturing firms have improved. Customer service is a function commonly outsourced by many manufacturing firms as a way to ease the company of the funds they could have used in creating an effective customer care. It is a cost saving strategy and it is mostly used during economic downturns (Juras, 2008). Security guard services are also outsourced in cement manufacturing firms. Minieri associates (2009), states that each security program has its own objective e.g. minimizing the risk of losses that are caused by potential

threats. Laundry services are also outsourced in cement manufacturing firms. According to Riesenberger and Koeller (2005), laundry service providers usually recycle water that is used in washing and hence in provision of this services, costs are reduced and hence efficiency and effectiveness. Transport services are also outsourced and are needed in the whole supply chain since they act as a link between all the supply chain members (Szuster, 2010). The study further states that the quality of transport affects the competitiveness of the supply chain, hence the hypothesis for this study; H_0 , service outsourcing has no significant effects on supply chain performance of cement manufacturing firms in Kenya.

$$Y = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7 + e.$$

Where: Y= supply chain performance; a= the Y intercept when x is zero; $b_1, b_2, b_3, b_4, b_5, b_6$ and b_7 are coefficients of the variables; x_1 = cleaning services; x_2 = catering services; x_3 = IT services; x_4 = customer care services; x_5 = security guard services; x_6 = laundry services and x_7 = transport and logistics services and e= error term.

FINDINGS AND DISCUSSIONS

The objective of the study was to determine the relationship between service outsourcing and supply chain performance in cement manufacturing firms in Kenya.

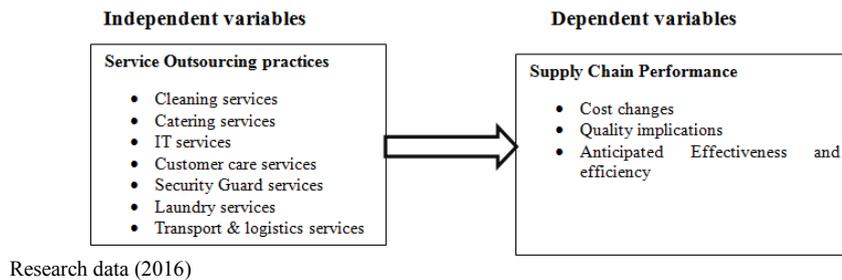


Figure 1. Conceptual framework

Table 1. Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.280	0.797		2.860	0.008
Cleaning services (x)	0.345	0.192	0.550	2.794	0.043
Catering services(X2)	0.378	0.228	0.590	1.659	0.108
IT services (X3)	0.327	0.290	0.006	2.024	0.049
Customer care services (X4)	0.169	0.169	0.173	1.997	0.327
Security guard services (X5)	0.187	0.220	0.245	0.848	0.004
Laundry services (X6)	0.217	0.141	0.339	1.540	0.134
Transport and logistics services(X7)	0.546	0.282	0.040	2.162	0.007

Research data (2016)

MATERIALS AND METHODS

A cross sectional research design was used to establish how service outsourcing impacts supply chain performance in cement manufacturing firms in Kenya. This research design was appropriate since it shows the relationship between variables. Ramar and Kumar (2008) state that cross sectionals studies have been mostly used for effects of relationship studies. The population of interest for this study was cement manufacturing firms in Kenya of which they were six in number. All the cement manufacturing firms in Kenya were used in this study since the population was small. Primary data was used in this study where the respondents were heads of departments or their equivalent. In Savanna Cement Ltd, there were 8 departments, Bamburi Cement Ltd, 10 departments, ARM Cement Ltd, 10 departments, EAPCC Ltd, 10 departments, National Cement Ltd, 7 departments and in Mombasa Cement Ltd, 8 departments. This totaled to 53 departments. The questionnaires were designed on a five point likert scale and administered using the “drop and pick up later” method (1 week). The likert scale was used since it is easy to understand and it is a universal method of survey collection. Correlation and regression analysis was used to analyze the questionnaire and findings presented in tables. The following regression equation was used to represent service outsourcing and supply chain performance:

A regression analysis was conducted to determine how cleaning outsourcing, catering outsourcing, information technology outsourcing, customer care outsourcing, security guard outsourcing, laundry outsourcing and transport and logistics outsourcing impacted supply chain performance of cement manufacturing firms in Kenya. The statistical package for social sciences (SPSS) was used to enter, code and compute measurements of the multiple regressions for the study. The results of the model coefficients are provided below:-

From the findings in table 4.15, the regression equation is:

$$Y = 2.280 + 0.345X_1 + 0.378X_2 + 0.327X_3 + 0.169X_4 + 0.187X_5 + 0.217X_6 + 0.546X_7 + E$$

Where Y is the supply chain performance,

- X1= Cleaning services
- X2= Catering services
- X3= IT services
- X4= Customer care services
- X5= Security guard services
- X6= Laundry services
- X7= Transport and logistics services
- E= error

From the findings of the regression analysis table 4.4 if all factors (independents variables) were held constant supply chain performance of cement manufacturing firms in Kenya would be 2.280.

performance. The F calculated at 5% level of significance was 14.424 since F calculated is greater than the F critical (value = 2.17), this shows that the overall model is significant (p value = 0.8% < 5%).

Tables 2. Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.888 ^a	0.789	0.553	0.54619	0.789	14.424	7	29	0.008

Research data (2016)

Table 3. ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.928	7	2.704	14.424	.008 ^b
	Residual	5.072	29	0.175		
	Total	24.000	36			

Research data (2016)

An increase in cleaning services outsourcing would result to an increase in the supply chain performance by 0.345, an increase in catering services outsourcing would result to an increase in the supply chain performance by 0.378, an increase in IT outsourcing would lead to an increase in the supply chain performance by 0.327, an increase in customer care outsourcing would lead to an increase in the supply chain performance by 0.169, an increase in security guard outsourcing would lead to an increase in the supply chain performance by 0.187, an increase in Laundry outsourcing would lead to an increase in the supply chain performance by 0.217 and finally an increase in transport and logistics outsourcing would result to an increase in supply chain performance by 0.546. At 5% level of significance the independent variables which are statistically significant (having P values of less than 5%) are: cleaning services outsourcing (4.3%), IT services outsourcing (4.9%), security guard services outsourcing (0.4%), transport and logistics services outsourcing (0.7%), the p values are further supported by corresponding z/t values where cleaning service outsourcing (2.794), Information Technology outsourcing (2.024), customer care service outsourcing (1.997) and transport and logistics service outsourcing (2.162) are greater than 1.96. the statistically insignificant variables (having P values of greater than 5%) are: catering service outsourcing (10.8%), customer care services (32.7%) and laundry services outsourcing (13.4%). From these findings, it is established that service outsourcing has a significant effect on supply chain performance of cement manufacturing firms in Kenya. Consequently, H_0 is rejected and the alternative accepted.

Table 4.10 above shows a model summary of regression analysis between independent variables. The value of R is 88.8%, the value of coefficient of determinant (R^2) is 78.9%. This is a perfect model since it is capable of explaining 78.9% of the variability in supply chain performance (Y). Most models that can explain more than 40% of the variability can be taken as useful models. 78.9% of the variation in supply chain performance is justified by the variation of the independent variables in the model. This is an indication that the model is a very good predictor overall since $R^2 > 70\%$. 21.1% is explained by other variables not in the model. The probability value of $0.008 < 0.05$ at 95% confidence level affirms that the regression model is significant in predicting how the independent variables influence supply chain

Conclusion and Recommendations

The study looked at the relationship between service outsourcing and supply chain performance. From the research, service outsourcing and supply chain performance are related in the sense that through service outsourcing, effectiveness and efficiency in a firms operation are enhanced. This therefore enhances improved supply chain performance of cement manufacturing firms in Kenya. The study showed that the need to acquire quality services, to concentrate on their main functions, to increase flexibility and the need to react to fluctuating market demands were some of the reasons for outsourcing logistics services. This shows how effective services outsourcing can be when improving supply chain performance in cement manufacturing firms in Nairobi. The study recommends that performance contracting of the service providers can be of great benefit to cement manufacturing firms. Service providers always aim at fulfilling the needs of the clients. If they are not closely monitored, they can provide substandard services to a given firm. Performance contracting therefore ensures that they have a limited period of service under which they have to act as per the terms of contract failure to which the contract is terminated by the cement manufacturing firm. This will ensure effectiveness and efficiency in the cement firms hence improved supply chain performance.

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