Supply chain integration and operational performance of Kenya’s public health sector

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ABSTRACT

This research objective is to determine the effect of the Supply Chain Integration dimensions on the operational performance of the level five hospitals of Kenya. The results are based on close-ended questionnaires from one hundred and sixty-four respondents working in the five health facilities supply chain selected using simple random sampling. The data collected was subjected to completeness checks, before it was cleaned, coded, and analyzed using Statistical Package for Social Scientists (SPSS) for the generation of both descriptive and inferential statistics. The results show that Supplier integration (β₁ = 0.276; p value=0.000), customer integration (β₂ = 0.119; p value=0.016) and internal integration (β₃ = 0.232; p value=0.000) have a significant effect on operational performance. The R² was 0.429, indicating that 42.9% of the variation in operational performance is explicated by the variation of Supply chain integration dimensions. This implies that all three supply chain integration dimensions significantly influence operational performance. The study concludes that the government needs to internally integrate and embrace forward and backward integration with the customers and suppliers to leap the full benefits of an integrated health sector to accomplish the universal health care goals.

Introduction

Supply chain integration (SCI) is a fundamental principle, which signifies a departure from the traditional functional processes which were operated as silos to integrated business processes both internally and externally (Childerhouse & Towill 2011). This entails the firm performing what they do best based on the organization’s core competencies and partnering with other firms to provide other resources not available internally to create value for the customers. SCI is regarded as an integrative philosophy which allows the firm to achieve its strategic goal in the acquisition of external resources. The implementation of SCI result in the improvement of the firm’s performance, efficient and accurate operations, all geared towards rationalizing the product/service, information, and funds flow from upstream to downstream partners. Despite the benefits of SCI, scholars have recommended further studies geared towards understanding better the intricacies of attaining superior SCI linkages. A better understanding of the concept of SCI dimensions and its implications has an impact on both the practice and academic importance which will lead to concrete theory-building in SCI as there is no convergence on the theory to use when it comes to research between SCI dimensions and performance. The lack of convergence is associated with lack of clear definitions of SCI and its dimensions.

SCI concept in the past has been predominantly in the manufacturing sector but has recently been applied in the service sector, including healthcare with the aim of replicating the superior performance. Most SCI studies, both globally and locally, have focused on assessing how SCI strategies influence operational performance; none of these studies has assessed the impact of SCI on the Kenyan public health sector. The health sector is crucial in meeting Kenya big four Agenda and universal health coverage.
Furthermore, operational performance measurement of the public health sector is of importance to the policymakers in fortifying the improvement and accountability of the health system (Gori, Baldini, & Ciani, 2011; Mustaffa & Potter, 2009). This study endeavored to bridge the gap between the researches carried out in the developed countries and more so in the manufacturing sector and replicating them in the health sector.

**Literature Review**

**Supply Chain Integration**

Supply Chain Integration (SCI) is the degree to which an organization strategically collaborates with its partners in managing intra and inter-organizational processes, to achieve effective and efficient flows of products and services, information, money, and decisions to provide value to customers (Flynn, et al. 2010). In the global context, SCI has been viewed as being both an effective and an efficient mechanism by which firms seek to secure competitive advantage by ensuring that the operational costs are reduced and at the same time guaranteeing high customer service. In the recent past, scholars have made contributions to SCI and firm performance by alienating the several dimensions such as supplier, internal and customer integration and the effect on the organizational performance (Stevens & Johnson, 2016). Globally, there is no concurrence on the classifications of SCI dimensions; and scholars in the past have recommended multidimensional constructs such as internal, supplier and internal integration (Koufieros, et al. 2010; Flynn et al. 2010; Zhao, et al. 2011). While others like Leuschner, Rogers, & Charvet, (2013), in their meta-analysis of SCI, have identified SCI dimensions to include information, operational and relational integration, still others like Danese and Bortolotti, (2014) have identified four SCI dimensions which include the three popular dimensions, customer, supplier, and internal integration and have added supply chain planning integration.

Internal integration relates to cross-functional and intra-firm collaboration with the aim of removing the functional silos and having full visibility of strategies, practices, processes to meet the customer needs (Zhao et al., 2011; Flynn et al., 2010). Internal integration is inherent in the organization and relates to information sharing and working together more strategically (Kouferos et al., 2010; Zhao, et al. 2011). According to Horn, Scheffler, and Schiele, (2014), internal integration is essential and is considered the building block to external integration (Droge, et al. 2012). Most studies on internal integration have focused on the relationship of internal integration on firms performance, while others have examined internal integration as a moderator of the relationship between external integration and performance (Schoenherr & Swink, 2012). Some of the indicators for measuring internal integration are, among others, teamwork, routine meetings, cross-functional teams, and the utilization of enterprise resource planning systems (Ataseven & Nair, 2017).

On the other hand, external integration encompasses both the upstream and downstream processes of the organization’s supply chain partners with the aim of enhancing value to all the chain the players which include both customer and supplier integration (Flynn el al., 2010). Supplier integration is reliant on the firm collaborating with the suppliers regarding information sharing; the supplier offers two-pronged purposes of providing the products required by the firm and sharing their expertise and knowledge for a syngeneic relationship with a view of meeting the customer expectations (Narasimhan, et al. 2010). Supplier integration involves collaboration, coordination and information sharing activities between the firm and the suppliers with the aim of synchronizing the firm information into vendors’ processes, capabilities, constraints and ultimately enabling more efficient planning, forecasting, product, process design, and transaction management (Schoenherr & Swink, 2012; Narasimhan, et al., 2010). Yuen and Thai (2017), argue that when firms recognize suppliers as a critical strategic partner has an enormous stake in their overall vision, they can easily break the static and restrictive public procurement policy imposed practices to add value to the process.

Conversely, customer integration is collaborating with the firm’s customers through the sharing of information to meet the customer's requirement and expectations (Zhao et al. 2011; Wong, et al., 2011). Customer integration comprises of strategic information sharing besides collaboration between the firm and customers with the primary objective of improving visibility through the provision of strategic insights into market expectations and opportunities (Schoenherr & Swink, 2012). Additionally, a firm that is fully integrated with its customers stands to benefit through quick problem resolutions, timely tasks coordination, cost, and reduction of inventories, resolving of quality issues in good time and reduction in waste (Wong et al., 2011).

**Operational Performance**

The assumption by most studies is that SCI is an enabler of superior performance. However, various firm performance measures have been recommended by diverse scholars. These frameworks include customer-oriented, financial, and operational measurements and are measured using several indicators which are dependent on the model adopted, but most include quality, cost, delivery, flexibility, and innovation. The operational performance examines the firm’s ability to reduce management costs, lead-time, and order-time (Heitzer, et al. 2017). Operational performance is recommended by scholars as it measures firms’ competitive capabilities (Schroeder, et al. 2011). Operational performance is a critical contributor to the overall performance of the supply chain as it is an amalgamation of multiple factors (Lu et al. 2018).

Most SCI studies, have mainly utilized three operational performance models which are the balanced scorecard (Kaplan & Norton, 2001), the decision-making levels (Gunasekaran, & Kobu, 2007) the Supply Chain Council proposed model, referred to as supply chain operations reference, (SCOR) (Supply Chain Council, 2019). Balanced Score Card, which is one of the models utilized for
non-financial performance management and consists of four constructs which are structurally connected (Zahoor & Sahaf, 2018). Balanced Score Card is considered a multidimensional and is ideal for measuring the operational performance vis-à-vis SCI, which also a multidimensional construct (Afshan, 2013). The study measures operational performance through the use of the balanced scorecard four perspectives which are adapted for the public-sector context of Kenya through the combination of various studies indicators (Aidemark, & Funck, 2009; Chatzoudes & Chatzoglou, 2011; Hong & Zhong-Hua, 2013).

Supply Chain Integration and Operational Performance

Scholars have documented that close integration of firm with external partners to include both customers and suppliers results in improved performance (Tavakoli, et al., 2012; Prajogo, et al, 2015). Lummus, Vokurka, and Krumwiede, (2008) reviewed various policy studies in the developed countries and found that a majority have reported a positive impact of SCI dimensions on operational performance. In Kenya, Odongo (2017) examined the association between SCI and the performance of public universities and found that most universities had most elements of SCI, resulting in increased responsiveness. Kinya (2010) examined SCI strategies and their influence on the operational performance of the treasury in Kenya and concluded it leads to competitive advantage. Additionally, the findings on the relationship between SCI dimensions and operational performance have not been consistent (Gimenez, et al. 2012; Sousa, et al. 2012), some have reported a positive relationship (Kim, 2009), others such as Flynn et al., (2010) have reported non-significant relationship while Swink, et al. (2007) reported a negative relationship. The inconsistency is attributed to the differing conceptualization and operationalization of SCI and the different utilization of performance measurement as well as the research context (Ebrahimi, 2015; Zhao, et al. 2013).

In South Africa, Vermeulen, Niemann, and Kotzé (2016) identified SCI as a tool to assist an organization to survive in a competitive marketplace. In Kenya, a study by Njagi and Ogutu (2014) examined SCI and performance in state corporations and found that internal integration and external integration positively influence performance.

Health Sector in Kenya

In Kenya, the government is the largest provider of health services, followed by the commercial private sector and the Faith-based organizations. The Kenyan Government has undertaken to provide universal health care for all its citizens. The Constitution of Kenya, promulgated in 2010, delineates two levels of governance, namely the national and county government (Oketch & Lelegwe, 2016). The public hospitals under the new dispensation are either governed by the national or county government. The Ministry of Health is charged by the national government, to formulate health policies and the supervision of the national referral hospitals while the county governments are charged with the implementation of the national health policies and management of health service at the county level.

The referral hospitals, which are categorized into a pyramid of six levels as level V and VI, receive funding from the national government (Mostert et al., 2015). Level six health facilities are managed as parastatals through an act of parliament. The financing of the public health sector is based on mainly three sources, which are the governments, donors, and households. The budget allocated to the health sector by the Kenyan government is high, for instance, in the published estimates of the financial year 2015/2016, the National Health Accounts indicate that the government, donors and households contributed 40%, 29% and 31% of Kenya’s total health expenditure, respectively (Ministry of Health, 2015). The biggest supplier of medical, supplies and equipment for the government is the Kenya Medical Supplies Authority (KEMSA), established by an act of parliament as a state corporation in the Ministry of Health, whose responsibilities is the procurement, warehousing and distribution to both the county and national governments (Ministry of Health, 2019). According to the Kenya Medical and Supplies Authority (KEMSA) Act 2013, both national and county governments can order their supplies from KEMSA (Shretta et al., 2015) which by default becomes part of the public healthcare supply chain on the upstream as a supplier.

Theory

There have been valid calls for more application of organizational theories to explain/predict SCI relationships and interactions with operational performance, more so given that SCI does not have theories of its own. The resources include monetary, material, information, and knowledge sharing to meet customer needs. The resources identified by Alfalla-Luque Medina-Lopez, and Dey (2013), that cut across the three echelons of SCI which are information integration; resource coordination and sharing; and, the firm structural relationship linkage. The agency theory is appropriate given the context of the study is public sector.

Furthermore, SCI operates on the agency principal basis. This study was anchored on two theories, the agency theory, and the RBV. The agency theory was introduced by Alchian and Demsetz (1972) and later expounded by Jensen and Meckling (1976). The theory explains how best to organize relationships in which one party (principal) determines the work and which another party (agent) performs or makes decisions on behalf of the principal. In SCI, the companies become partners as opposed to the traditional view of business contracts. The theory, therefore, explains the supplier, customer, and internal integration variables (Baiman & Rajan, 2002).

RBV theorizes that a firm consists of a bundle of unique resources and explains the relationships between resources, capabilities, and competitive advantage (Penrose, 1959) which. According to Barney (2012), the theory explains the factors that affect the organization’s resource mobilization and utilization to achieve a competitive edge, which in turn improves a firm’s operational performance. SCI is a collaboration with suppliers to gain access to knowledge/skills found in the other firms which include monetary,
material, information, and knowledge sharing to meet customer needs (Stevens & Johnson, 2016) to improve performance. RBV explains both the synergy achieved by internal and external integration.

**Conceptual framework**

The primary motivation of the research is to determine the effect of the SCI dimensions and the operational performance of the public health sector level five hospitals in Kenya. Literature informs the conceptual framework proposed for this study within the SCI and operational performance. The study uses the configurational approach which, according to Cao, Huo, Li, and Zhao, (2015), explains how the various SCI dimensions interact with the operational performance, given the different interconnections (Flynn et al., 2010; Danese, 2013).

The first hypothesis examined the effect of the relationship between supplier integration and the operational performance of Kenya’s public health sector. The study utilized some of the parameters proposed by Msimangira, (2010) who examined the operational factors that impact SCI and their effect on commercial supplier relationships (supplier integration) in public hospitals in New Zealand. The study utilized some of the parameters recommended by Yunus and Tadisina (2016) and previously used by Flynn et al. (2010).

H01: Supplier integration has no significant influence on the operational performance of Kenya’s public health sector.

For the second hypothesis, which examined the effect of the relationship between customer integration and the operational performance of Kenya’s public health sector and utilized among others the five indicators introduced by (Peng, et al. 2013); customer contact, feedback, and responsiveness to customer needs and those recommended by Hemstrom (2014); Chatzoudes and Chatzoglou, (2011).

H02: Customer integration has no significant influence on the operational performance of Kenya’s public health sector.

The study third hypothesis involves the effect of the relationship between internal integration and the operational performance of Kenya’s public health sector. This study utilized indicators from various studies to include some of those proposed by Flynn et al. (2010); Huo (2012); Hemstrom (2014), Horn et al., (2014); Stevens and Johnson (2016), which include collaboration, information sharing, structure, online integration, cross-functional teams, real-time information, functional meetings, team building briefings.

H03: Internal integration has no significant influence on the operational performance of Kenya’s public health sector.

The conceptual model (Figure 1) provides further insights into the complex relationships that exist in public sector supply chain integration.

![Conceptual Model](image)

**Research and Methodology**

The study adopted the doctrine of post-positivist philosophy, given that it permits empirical examination of the relationship between SCI dimensions and the operational performance in Kenya’s public health sector. Furthermore, the use of post-positivist philosophy diminishes complexity enabling the researcher to examine the causal relationships between the multiple constructs. The research design adopted was causal, non-experimental, and cross-sectional. The design also takes on a confirmatory element based on priori hypotheses deduced from existing theories and empirical studies. A mixed-method methodology between quantitative and qualitative
techniques provided the researcher with both objective and subjective measures, which in the SCI context is the most preferred method. The study collected information using simple random sampling technique to select respondents from all Level five public health facilities. The respondents included biomedical engineers, county staff, chief nurses, hospital secretary, procurement officers, information technology officers, finance officers, public health officers, medical superintendents, pharmacists, chief laboratory technician. The study utilized a semi-structured questionnaire with Likert scales and closed-ended questions which was administered to the hospital staff. The questions with Likert scale consisted of a scale from 5-1 and ranged from “strongly disagree” to “strongly agree.”

The target respondents for the study were determined using Slovin’s Formula for sample size calculation (Ryan, 2013).

\[
n = \frac{N}{1 + N \times d^2}
\]

\(N\) = Finite population (384)
\(d\) = margin of error (5%)
\(n\) = sample size

The formula yielded one ninety-six respondents.

**Data Analysis Technique**

The Regression model, which represents the predictive model governing the association between the SCI dimensions, impact the operational performance of the public sector. The regression model is as follows:

\[Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon\]

Where:

\(Y\) = Operational Performance
\(\alpha\) = Constant Term
\(\beta_1, \beta_2,\) and \(\beta_3\) = Regression coefficients of the independent variables
\(X_1\) = Internal Integration
\(X_2\) = Supplier Integration
\(X_3\) = Customer Integration

**Reliability and Validity**

In order to guarantee the validity of the instruments, the study engaged peer review, and pilot tested to aid in fine-tuning any ambiguously formulated variables. A pilot study was conducted to assess the validity and reliability of the data collection instruments. The Cronbach’s alpha test to estimate the proportion of variance that is consistent in the test scores. The study had ten items for all the independent variables and twenty-four items for measuring operational performance. Cronbach's Alpha coefficient was higher than 0.7 for all the variables. Therefore, no editing was required for the instrument as far as the independent and the dependent variables were concerned.

**Analysis and results**

The study used descriptive statistics to summarize the demographic and general questions, while inferential statistics were utilized to test the study hypotheses. Regression analysis was used to find the causal effect relationship among the variables under study. One hundred ninety-six questionnaires were distributed to the level five public facilities employees and county officials out of which one hundred and sixty-four were filled and returned, representing a response rate of 83.7%. Which is considered sufficient according to Kothari and Garg (2014) who recommend response rate higher than 70% for data analysis and reporting.

The study applied both inferential and descriptive statistics. The descriptive statistics captured information on demographics such as gender, age, education level, and employment. The summary of the demographic information is illustrated in Table 1.
Table 1: Summary of The Demographic Information

<table>
<thead>
<tr>
<th>Descriptive</th>
<th>Findings</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>60.4% - male; female 39.6%</td>
<td>Have met the one third gender rule.</td>
</tr>
<tr>
<td>Age</td>
<td>65.9% - 31-40 years; 18.9% - under 30 years; 11% - 41-50 years; 4.3% - over 51 years old</td>
<td>An aging workforce and low retention rate</td>
</tr>
<tr>
<td>Education</td>
<td>4.9%, doctorate; 22.6%, masters; 48.8% undergraduate degree; 23.3% Diplomas; 0.6% Secondary</td>
<td>The majority had at least undergraduate education, given that most of the functions in a hospital are highly specialized</td>
</tr>
<tr>
<td>Work</td>
<td>40% - 1-5 years, 34% - 6-10 years, 11% - 11-15 years, 8% - less than 1, 7% - more than 15 years</td>
<td>Most had experience in the work area - an indication that they had a basic understanding of the effect of SCI on the facility’s operational performance.</td>
</tr>
</tbody>
</table>

Source: Authors

Result and Discussion

Statistical

Subsequently, diagnostics tests were carried out to ensure that all the assumptions of regression were observed. The tests included normality, autocorrelation, linearity, and multi-collinearity. The Kaiser-Meyer-Olkin (KMO) Test for sample adequacy to utilize Factor Analysis. The KMO inspects variance proportionality, and the rule of thumb is to accept values above 0.6. Additionally, the study utilized the Durbin-Watson test to check for the independence of error terms, and the values were within acceptable levels and are represented in Table 2.

Table 2: Statistical Analysis

<table>
<thead>
<tr>
<th></th>
<th>KMO</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Integration</td>
<td>0.759</td>
<td>1.382</td>
</tr>
<tr>
<td>Supplier Integration</td>
<td>0.714</td>
<td>0.956</td>
</tr>
<tr>
<td>Customer Integration</td>
<td>0.720</td>
<td>1.754</td>
</tr>
<tr>
<td>Operational Performance</td>
<td>0.868</td>
<td>1.88</td>
</tr>
</tbody>
</table>

Source: Authors

The collected data satisfied the assumptions for multiple linear regression. The estimates of the regression coefficients explaining the relationship between the operational performance of Kenya’s public health sector (dependent) and supplier integration, customer integration and internal integration (independent variables) are illustrated in Table 2. The model shows the regression model coefficients that were associated in explaining the relationship between the independent and the dependent variables.

Table 2: 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>0.655*</td>
<td>.429</td>
<td>.418</td>
<td>.39243</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Internal Integration, Customer Integration, Supplier Integration

Source: Authors’ own calculation

The outputs indicated that the strength of association between the dependent variable and the independent variables was moderately high (R = 0.655). The R² was found to be 0.429. This is the explanatory power of the model which shows that 42.9% of the variation operational performance is explained by the variation of predictors in the model (supplier integration, customer integration, and internal integration). Which implies that there is the existence of other factors not studied in this research explains the remaining 57.1% of the operational performance.

The ANOVA results are explained in Table 3, and the P-value of the F-statistic is less than 0.05 showing that the coefficient estimates of the model are jointly not equal to zero, implying that the model is statistically significant in predicting how the independent variables influence the dependent variable. This shows that the regression model has a less than 0.05 likelihood (probability) of
giving a wrong prediction. This, therefore, means that the regression model has a confidence level of above 95% hence high reliability of the results.

Table 3: ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>18.523</td>
<td>3</td>
<td>6.174</td>
<td>40.093</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>24.640</td>
<td>160</td>
<td>.154</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>43.162</td>
<td>163</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Operational performance
b. Predictors: (Constant), Internal Integration, Customer Integration, Supplier Integration

Source: Authors

Regression analysis is utilized to examine the relationship between the dependent variable (operational performance) and the independent variables (supplier, customer, and internal integration). The study was based at 95% confidence level to identify the model predictor variables. The estimates of the regression coefficients, the t-statistics and the p-values for the relationship between the operational performance, which is independent variable and the dependent variables, Supplier integration ($\beta_1, = 0.276; p$ value=0.000), customer integration ($\beta_2, = 0.119; p$ value=0.016) and internal integration ($\beta_3, = 0.232; p$ value=0.000) are illustrated in Table 4.

Table 4: Regression 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>1</td>
<td>(Constant)</td>
<td>1.394</td>
<td>.230</td>
<td>6.052</td>
</tr>
<tr>
<td></td>
<td>Supplier Integration</td>
<td>.276</td>
<td>.070</td>
<td>.310</td>
</tr>
<tr>
<td></td>
<td>Customer Integration</td>
<td>.119</td>
<td>.049</td>
<td>.173</td>
</tr>
<tr>
<td></td>
<td>Internal Integration</td>
<td>.232</td>
<td>.060</td>
<td>.299</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Operational performance

Source: Authors

The findings show that supplier integration, customer integration, and internal integration significantly influenced operational performance. The three variables had a significant value less than the level of significance ($\alpha=0.05$).

$$\hat{Y} = 1.394 + 0.276X_1 + 0.119X_2 + +0.2327X_3$$

The Constant term is =1.394

$\beta_1, = 0.276; \beta_2, = 0.119; \beta_3, = 0.232$

$X_1=$ Supplier integration; $X_2=$ Customer integration; $X_3=$ Internal integration

From the results, when all the variables are held constant, a unit change in supplier integration leads to a 27.6% increase in operational performance. A unit increase in customer integration, internal integration holding other factors constant would lead to 11.9% and 23.2% respectively, in operational performance.

Conclusions

The study concluded that health facilities recognize the imperativeness of internal integration, but few have embedded this critical aspect of SCI in their operations. Therefore, proper incorporation of these aspects of internal integration will enable health facilities to identify new ways of improving their practices and efficiency, which will positively impact operational performance. Health facilities to integrate their entire supply chain network to be able to exchange data with their suppliers using technology and capabilities already present. Besides, the study determined that it was prudent for health facilities to integrate their entire supply network backward and forward to enable the exchange of variable data with their suppliers using the technology and capabilities they already present.

The findings of the study have shown that a patient helps as a quasi-consultant of the health facilities during decision-making and design processes by contributing to the creation of new services and the health facilities can facilitate the visibility of their opinions of services rendered and medical preferences. The study posits that health facilities need to appreciate the role of customer integration since it encourages patient retention and loyalty. Further, the researchers determined that customers are the principle marketers of health facilities. Health facilities can leverage on their support in the marketing of their establishments, mainly through recommendations and word-of-mouth.

The study recommends robust and effective Internal Integration by strengthening their capabilities in the system, data, and process integration before they can engage in meaningful external integration. The study also advocates for the facilities to consider
involvement and communication of their processes to suppliers to increase their confidence in the process and bring them on board to understand the facility’s requirements and make them committed to delivering the facilities’ expectations. Consider incorporating as part of their customer integration process, the collection, and dissemination of essential data of patients who visit their establishments. The study recommends that facilities need to develop secure and electronic health records of patients, which will make health information available electronically and readily accessible for decision making.

The study recommends that future studies consider investigating the impact of other factors that were not found to be significant in this study. Such information will inform the health facilities on how to sufficiently integrate these aspects of SCI into the operations. Given that SCI is dynamic, it would be interesting to have a study conducted over time to examine the effect of supply chain integration dimensions and operational performance and examine the multiplicative impact over time. Furthermore, future studies, given the dynamism SCI, should incorporate exogenous variables that mediate on the effect of SCI dimensions on operational performance.

References


