Introduction

SCV (Supply chain visibility) is “the awareness of, and control over, specific information related to product orders and physical shipments, including transport and logistics activities, and the statuses and events and milestones that occur prior to and in-transit” in a supply chain (Hearn, 2013).

It is rated as the most important measure for supply chain performance both by business leaders and researchers (McIntire, M. J. 2014).

Therefore, being able to efficiently measure and know the status of this SCV in a given pharmaceutical supply chain has a significant value for benchmarking or improvement purposes.

Objective

Apply a novel quantitative approach to measure the SCV of the Pharmaceutical Fund and Supply Agency (PFSA) central in the Ethiopian Public Health Commodities Supply System (EPHCS).

Major Activities and Findings

Hospital activity flow sample, Information flow exchanged between Responsible Persons for a selected study pharmaceuticals

Information Flow exchanged are categorized as one of the kind: master data (MD), transaction/events (TE), status information (SI) and operational data (OD)

How much information (quantity) and how well (accuracy) and freshness of the information exchanged affect the focal company accesses as graded:

Mathematical calculations followed to reach on partial/global visibility index

Approaches

Quantitative model developed by Caridi et al. (2016):

1. Model to guide to assess the level of SCV quantitatively, from the angle of defining the most important features of information flows (e.g. quantity), accuracy, or freshness along actors within a supply chain.

The model suggests structured approaches to reaching the final goal:

1. Identification of key information segments in a supply chain
2. Classifying information as: master data, features of products
3. Gradation of the information flow exchanged

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Case study – data collection

SCP in a high-income country and other pharmaceutical systems so that benchmarking of the results might not become practical for now.

APPROACHES

Graphical representation of the supply chain visibility model

The focal company has a better partial visibility (2.99 of 4) with regard to international suppliers of program pharmaceuticals than with the local suppliers (2.91 of 4) and international suppliers (2.79 of 4) of RDF (purchase) pharmaceuticals.

More than 75 % of all the information flow within the inbound supply is accessed by the focal company.

The accuracy of the accessed information is of intermediate score (3/4) and the freshness is indeed very poor (1.6/4).

Operational data are those information flows accessed with better accuracy and freshness while transaction/events information flows with least freshness score.

CONCLUSIONS, CONTRIBUTIONS

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Master data:

Inbound supply chain

Similar results were recorded in the outbound portion.

Information flow within hospitals for the Program (free) pharmaceuticals supply line, is better accessed (more than 75% accessed)

But with moderate quality; accuracy (2.44 of 4) and freshness (1.36 of 4) than the RDF (purchase) supply line; Accessibility (3.13 of 4), accuracy (2.21 of 4) and freshness (1.61 of 4).

Ongoing supply chain

Data collection

PRODUCTS

Research limitations

No similar quantitative visibility studies conducted within the study country or other pharmaceutical systems so that benchmarking of the results might not become practical for now.

Grouping of information flow types into their respective categories was a bit ambiguous.

Practical implications

Responsive stakeholders and the focal company can use the results to target areas which need visibility improvement with regard to their strategic objectives.

Our recommendation: Those information segments which could influence key business processes (e.g. Status, events, operational etc.) shall be accessed as accurate and as fresh as possible.

CONCLUSIONS, CONTRIBUTIONS

Able to implement the visibility tool on the pharmaceutical supply chain

Able to quantitatively tell how poor or good the supply chain visibility is from the perspective of quantity and quality of information exchange among actors.

Since results are quantitative, benchmarking and comparison of systems could be appropriate.