

## Exploring Reverse Logistics Practices



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**Abstract:** Reverse logistics is young concept and it has received growing interest among practitioner. Furthermore, reverse logistics is less mature than logistics and supply chain management conceptualizations. Reverse logistics simply defined as the return, exchange, refurbishment, remarketing and disposition of products. The customer returns the products because of several reasons such as end of life, expired, product damage, products recall, poor quality, non halal products and others reason. The implementation of reverse logistics practices into business became a competitive advantage and it became strategic goals for the organization's economic benefits, building a company image and somehow effects the environment legislation. Therefore, it is very important to explore the overview of history, concept, and activities of reverse logistics practices. The objective of this study is to explore the concept of reverse logistics practices in view of literature perspectives. To achieve it, this study focuses on secondary data only which is review the literature. The review of literature of reverse logistics concept will be presented in the diagram. Finally, this study is to explore and discuss some future opportunities in reverse logistics field.

**Index Terms:** Reverse Logistics, Literature, Concept, Logistics

## I. INTRODUCTION

Since the beginning of the year 1990s, many countries in the world have started to pay an attention and great concern to the environmental and raw material resources ( H. Rachic et. al., 2019). Reverse logistics activities get a worldwide attention due to growing of global concerns of environmental problems that led to the emergence of policies and regulations to control carbon emissions (Zhang YQ. et. al. (2018).

Reverse logistics is known as expanded from the knowledge of supply chain management specially in closed loop supply chain and green supply chain management (Khor K. and Udin Z, 2012). In addition, it strongly supported by Ramazan Kaynak et. al. (2014), supply chain is undergoing radical transformations due to the mega competition taking place on a global scale. Recently, reverse logistics has become a field of importance for all organization due to growing environmental concern, legislation, corporate social responsibility and sustainable competitiveness (Saurabh Agrawal et. al., 2015).

Reverse logistics simply can be defined as an opposite activity of forward logistics. Reverse logistics is a sequence of activities of that required of collected the used products or return products from the customers back to the manufacturers for the purpose of reuse, remanufacturing, recycle or dispose of it. Usually the returned goods cannot always be transported, stored, or handled in the same manner as in the regular forward logistics practices (C. Bai and J. Sarkis., 2013). On the other perspectives, the return products can give manufacturers and retailers to have financial return on these assets, however, many manufacturers still do not recognize the potential value in financial terms (Muniz Jr. J. et. al., 2017).

The increasing of return goods has resulted in the increasing of generated of solid waste. According to the author Ngadiman N, et. al. (2016), the amount of solid waste generated in Malaysia increased from 16,200 tons per day in the year 2001 to 19,100 tons in the year 2005. Due to the important of reverse logistics, the reverse logistics system should be accomplished systematically and efficiently for the reverse logistics operations to be effective. The reverse logistics operations therefore add significantly to the value chain and considering the reverse flow that can add value to the products and indirectly generating a competitive advantage to companies and organizations (Dowlatshahi S,2012). Therefore, this study makes attempt to present a comprehensive review of the published literature on these related reverse logistics concept and activities. In the section of literature review, it detailed discusses the concept and reverse logistics practices.

## II. LITERATURE REVIEW

### Reverse Logistics Concept

Reverse logistics was an extension of organizational logistics and become an innovation in logistics field. Reverse logistics definition has been explained by many authors. The first definition of reverse logistics was appeared in the year 1989s. Data from several studies have identified the definition of reverse logistics.

In the year 1993, *Council of Logistics Management* has stated reverse logistics as “ the field of reverse logistics is broad and related to the skills and activities involved in the management of waste, movement, and disposal of products and packages”. In the same line, the *Reverse Logistics Executive Council* (RLEC) mentioned that “ the reverse logistics refers to the process of planning, implementing and controlling the efficiency and the cost effectiveness of the flow of raw materials, work in process, finished products, and all the related information, from the point of consumption to the points of origin in order to recapture value or to offer an appropriate disposal”.

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In year 2005, *European Working Group on Reverse Logistics* mentioned that, reverse logistics involves all operations related with products and materials reuse as well as the logistics of collection, dismounting, and processing of products and used parts with the aim to assure their sustainable recovery without prejudicing the environment (C.R Vaz et. al., 2013). However, the *Council of Supply Chain Management Professional (CSCMP)* provides the popular definition of reverse logistics as “reverse logistics is a specialized segment of logistics focusing on the movement and management of products returns for repair and/or credit (Wang J,2016).

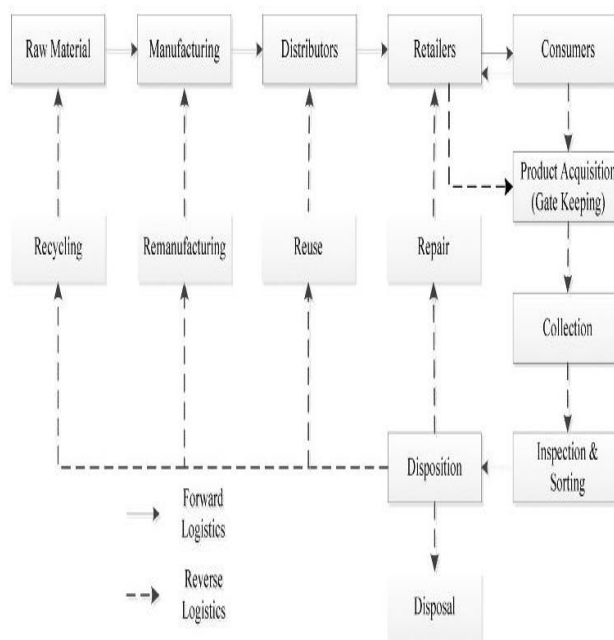
On the other hand, other studies have considered other definition of reverse logistics. Rogers and Tibben-Lembke (1999) was defined reverse logistics is the process of planning, implementing and controlling the efficient, cost effective flow of raw materials, in process inventory, finished goods, and related information from the point of consumption to the point of origin for the purpose of recapturing or creating value or proper disposal (Wang J, 2016). The authors Filiz C. and Reyhan. S (2017) has summarize the definition of reverse logistics that has been developed over the years. Murphy and Poist (1989) define reverse logistics as pointing out the reverse flow of goods. From authors Bernon et.al (2011), reverse logistics not a homogeneous subject but an umbrella term that covers several different operational cases. In the year 2014, Ramirez and Morales mentioned as all recovery actions in which a firm gains economic benefits directly or indirectly refer reverse logistics. Generally reverse logistics in a one of the logistics practices and activities to recovery or dispose the returned products with the proper and correct channels.

### Reverse Logistics Practices

According to C.R. Vaz. et. al. (2013), basically there have five basic dimensions of reverse logistics before any of organization wants to implementing reverse logistics activities. The five dimensions or factors that when one company wants to implementing reverse logistics at their organization, firstly is why implementing it, secondly is why returning, third is how to return or collect, forth who is making the returns, and fifth what is being returned. Basically, the individual aspects of the chain process that is characteristics for the reverse logistics flow. The authors A. Antonyova et. al. (2016) was examined the reverse logistics activities are specified in activities of gatekeeping as activity of controlling, sorting and storing, asset recovery and transportation. In addition, to keep reverse logistics become successful implemented, the processes can be added value of customer satisfaction, new technology implementation, eco compatibility, strategic alliances, knowledge management and value recovery. It is supported by Khor K. and Udin Z, (2012), reverse logistics is a series of processes that begin from authorization of returns transportation, auditing, product disposition and creating information system to track returns. Refer to H. Prajapati et.al. 2019, the reverse logistics activities are opposite flow of the traditionally supply chain movement of goods from producers to customers. The flow of reverse logistics consists of collect post of consumer goods, recover their residual value, recreate and redistribute either marketable or useful for forward value creation processes (H.

Rachih et. al (2019).

The author Agrawal S. et. al. (2015), has summarized the processes of reverse logistics from few perspectives that carried out by Rogers and Tibben-Lembke (1999) and other authors, the used or returned products are collected after their acquisition and are inspected for sorting into the different categories based on the reasons of return and types of damage. The next step is to dispose them for repair, remanufacturing, recycling, reuse or final option which is disposal based on the decision taken to either recapture value or dispose it. However, the most key steps or processes of reverse logistics is identified as product acquisition, collection, inspection/ sorting, and disposition. The below diagram figure 1.0 is showing the basic flow of forward logistics versus reverse logistics that adapted from study of Agrawal S. et. al (2015). The usual practice of forward logistics, the processes of forward logistics is start from raw material until received by consumers or end users.



**Fig. 1 Basic flow of forward logistics vs reverse logistics (Agrawal S. et. al. 2015)**

One the other authors perspective, the products return is collected either from customers or retailers and it taken to disassembly center. The returned products then be tested and sorted into three groups. According to H. Prajapati et. al. (2019), returned goods can be divided into three groups which is firstly, convertible products into finished goods, which is in this group of products can be converted to final products with minor correctios. Secondly, convertible product into raw material, for these types of products, the products required major corrections, therefore it is better to convert the products into raw material for further use in industry. Third category is products inconvertible which is of no use to industry and rejected. Usually this kind of products such as perishable goods, expired products and others. The reverse logistics activities that can be consider such as reclaim the material,

dispose off in landfill and dispose with energy recovery. The figure 2.0 is showing the general reverse logistics activities structure for all types of products which is product inconvertible, convertible products either into finished goods or into raw materials.

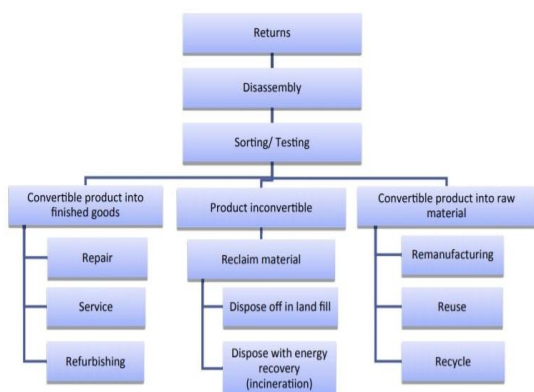


Fig. 2 General Reverse Logistics Structure (H. Prajapati et. al. (2019)

Finally, it can be summarized as reverse logistics concept consists of several activities that companies need to carry on with the returned products or materials and it need to identify the possible destination of returned products (M. Sukril.A and Aysen C. 2012). The action taken need to be consider of the characteristics of the products or goods.

III. METHODOLOGY: SECONDARY DATA

A literature review seems to be valid approach for reviewing thoroughly and structuring a research area. Literature review helps in identifying the conceptual content of the research area and guides toward the theory development (Saurabh Agrawal et. al. 2015). The authors are referring to the secondary data that's been published by the online journal to prepare this study. The selected journal prior to implementing reverse logistics, reverse logistics practices and the history. Therefore, the findings can help this study to strengthen the need for further research in reverse logistics to improve the current stage.

IV. RESULTS

This study has conducted a preliminary survey with one of beverage industry in Malaysia in order to prove the five factors and dimensions before any organization ready to implement reverse logistics practices that argues by C.R. Vaz. et. al. (2013). There have five factors have been mentioned (1) is why implementing, secondly (2) is why returning, third (3) is how to return or collect, forth (4) who is responsible with the returns, and fifth (5) what is being returned. The results have been summarized as below table:

Table 1. Significant factors those make reverse logistics success based on the framework dimensions of 4W and 1H (Ngadiman, N.I. 2016)

Factor	Findings
1. Why Implementing it	The Drivers of: -Corporate citizenship, marketing and promotion

	purpose
2. Why Returning	Reasons returns from hypermarket: -End of life and damage products  Reasons return from retailer: -Expired, pricing issues, quality issues and damage in transit  Reasons reject from retailer: -Duplicate order, cancel order, insufficient order, wrong order, document order (DO) issues and purchase order (PO) issues
3. How to Return/Collect	Processes Method: -Sorting, Inspection  Recovery Option: -Landfill, resell with lower price for certain products
4. Who Responsible	-Forward players, reverse players, and government institutions
5. What being Returned	Product characteristics return from supermarket, grocery market, restaurant, convenient store and traditional store

From the table above, it can be summarizing the significant factors consist of 4W and 1H can make one organization implementing reverse logistics practices with efficiently, effectively and successfully. After sorting the reasons and recovery options, the organizations can gain greatest benefits and advantages from the practices. In addition, reverse logistics practices will demonstrate the firm's commitment towards environment sustainability (Chen D. et. al. (2018) and corporate image branding.

V. CONCLUSION

The purpose of the present research was to be explore and understand the concept definition and reverse logistics practices. Therefore, future research should be done to investigate the drivers and the importance of implementing reverse logistics activities toward organization performance.

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