

IMPACT OF REVERSE LOGISTICS ON FINANCIAL PERFORMANCE

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Abstract

Reverse logistics is a critical operation that is frequently misunderstood. Many businesses don't know what protocols and procedures to follow or how to effectively manage reverse logistics. Though studies have proven the favorable effects of adopting numerous reverse logistics strategies, the researcher discovered no research that particularly demonstrated how adopting reverse logistics methods might affect performance of the firm. Objective of this study was to determine the extent to which adopted reverse logistics practices affect the financial performance of the firm

Key words : Reverse logistic, critical operations ,financial performance

Introduction

The Council of Logistics Management defines logistics as the process of planning, implementing, and controlling the efficient, cost-effective flow of raw materials, in-process inventory, finished goods, and related information from point of origin to point of consumption in order to meet customer needs.

All of the activities described in the definition above are included in reverse logistics. Because reverse logistics operates in the opposite direction, it comprises all of these processes. As a result, 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 back to the point of origin in order to reclaim value or dispose of it properly.

Reverse logistics, to put it another way, is the process of transporting things away from their usual destination in order to capture value or dispose of them properly (Rogers & Tibben-Lembke, 1998). This notion of reverse logistics may also encompass remanufacturing and refurbishment activities. More than just reusing containers and recycling packing materials is involved in reverse logistics. Redesigning packaging to utilise less material or lowering transportation energy and pollutants are significant operations, but they might be better categorised as "green" logistics. The operation is probably not a reverse logistics activity if no goods or materials are being sent "backwards." Damaged merchandise, seasonal inventory, replenishment, salvage, recalls, and surplus inventory all fall under the reverse logistics umbrella. Programs for recycling are also included.

Literature Review

The reverse logistics process, according to Larsen, Masi, Feibert, and Jacobsen (2018), entails the execution of actions connected to the creation of plans, supervision, and cost-effective raw

material utilisation. This is done with the intention of coordinating the inventory's in-process and finished goods' operations utilising point-of-sale data. It aids in determining and recovering the value of used products so that adequate arrangements may be made for the disposal of goods that can no longer be reused or remanufactured.

Returns, disposition, green manufacturing, re-conditioning/refurbishing, recycling, remanufacturing, salvage, and dumping are all examples of reverse logistics, according to Jayaraman and Luo (2007). To ensure that the reverse logistics process is done efficiently, each process is carried out in a step-by-step way. Returns are the initial step, in which a product is returned to a store or manufacturer owing to poor quality or inability to satisfy and perform a specific utilitarian function. The pattern in which the product will be disposed of is determined by the disposal procedure. It can take the form of selling to a recycling centre, a broker, or a landfill. According to Mukhopadhyay and Setoputro (2004), including reverse logistics into a company's operations can assist increase income by profiting from the resale of core components to a true supplier, an independent recovery organisation. Profits from the selling of end-products to independent recovery firms and recyclers are also included. The procedure of retrieving and repairing products in order to give services is also beneficial in raising the company's revenue proportions by introducing open return policies.

According to Abbey et al., (2015), the reverse logistics or supply chain process enables businesses to do recovery and take-back operations, increasing the value of virgin items. As a result, the income generated from the sale of virgin items increases, boosting the company's profit potential. According to Zhou and Xoing (2013), reselling recovered products allows the company to enter the market quickly and at a reasonable cost. Finally, it aids in expanding sales and revenue proportions to their highest levels. As a result, reverse logistics methods can be stated to boost a company's financial strength by raising its sales and revenue potential.

According to Benjelloun, Crainic and Bigras, (2010) logistics are defined as the process in which the different organizational departmental processes such as planning, adopting, and supervision are carried out. It is executed to ensure that there is a better utilization of resources and the mechanism related to flow, movement, storage, accessibility, and goods. Logistics department is responsible for carrying out organizational activities such as demand forecasting, procurement, product preparation, requirement scheduling, and effective administration of the inventory. It also involves carrying out physical distribution activities such as delivering products to the customers, haulage, order dispensation, allotment planning, and management of completed goods. These activities must be carried out in an efficient manner so that activities like warehousing, product handling, and packaging, related functionalities are performed successfully. The concept of logistics is applied by the organizations to hedge against the risk of soaring fuel prices. This helps the firm to be more vigilant and incur cost benefits so as to increase the efficiency of production functions to optimized levels. It also promotes the use of the latest technology so that logistics practices are aligned in the most efficient manner. Moreover, quality services are provided to consumers. This can be achieved only by maintaining a balance between the traditional and modern means of production as well as communication channels. As a result, on the one hand, it

helps in reducing economic regulation. While on the other hand, it is conducive to enhance the power of the retailers in such globally competitive scenarios.

Fernandez, (2003) examined that reverse logistics is the process in which goods are received from the consumers to the company. Such products are returned after use so that the product could be reused or resold by the producers by repairing, refurbishing, or remanufacturing the product. These products may also undergo other processes like cannibalization, recycling, incineration, and landfilling. Nonetheless, products that are of no use in any of the supply chain processes are then discarded. According to Kroon and Vrijens, (1995) reverse logistics is also associated with performing logistics management activity. Logistics management comprises the activities that are related to reducing, administrating, and discarding of non-useful waste are carried out. These activities are similar to those of the process of products packaging. It ensures that implementation of wastage management practices is carried out in a strategic manner at a lower cost for enhancing organizational efficiency. Moreover, Carter and Ellram, (1998) analyzed that reverse logistics in their study. The study outlines reverse logistics as the process in which the functionalities related to forward management of products are carried out in such a way that there are fewer cases of flow back of products and ensures reuse of materials by implementing recycling procedures. As a result, by pursuing the activities related to reverse logistics, the companies become more aware of the environment and prefer to perform activities that are in the favour of re-utilization of products.

Hypothesis:

H₀: There is no significant impact of adoption of reverse logistics on the financial performance of the firm.

H₁: There is a significant impact of adoption of reverse logistics on the financial performance of the firm

Research Methodology

A descriptive research design is used in this study. Primary data is the centre of the study, but secondary data is also collected for a literature analysis and to develop a solid theoretical foundation. Personal interviews were used to acquire the primary data for this study, which had a sample size of 278 people. The information was statistically analysed. SPSS software was used to test hypotheses.

Data Analysis

The below tabulation gives the descriptive of each variable with their mean and deviation of the value from their mean.

Table No. 1 Descriptive Statistics

	Mean	Std. Deviation	N
How long has your firm established reverse logistics practices?	3.56	1.172	278
q1. Improvement in gross profit margin	3.46	1.296	278
q2. Improvement in Return on Investment	3.65	1.279	278

q3. Improvement in Market share growth	3.43	1.742	278
q4. Reduces asset recovery cost	3.32	1.390	278
q5. Helps in cost containment	3.54	1.267	278
q6. Improves profitability	3.56	1.278	278
q7. Reduces investment in inventory	3.55	1.264	278
q8. Improves labour productivity	3.78	1.223	278
q9. Reduces distribution cost	3.72	1.237	278
q10. Reduces waste management cost	3.47	1.301	278
q11. Reduces product purchasing cost	3.87	1.131	278

Table No. 2 Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.795 ^a	.633	.609	.25586

Table No. 3 Anova

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	29.333	17	1.725	26.358	.000 ^b
	Residual	17.020	260	.065		
	Total	46.353	277			

Table 4: Coefficients ^a for Hypothesis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.893	.393		9.909	.000
q1. Improvement in gross profit margin	.032	.077	.036	.423	.673
q2. Improvement in Return on Investment	.052	.057	.057	.921	.358
1 q3. Improvement in Market share growth	.048	.049	.072	.988	.324
q4. Reduces asset recovery cost	-.268	.103	-.318	-2.599	.010
q5. Helps in cost containment	-.004	.071	-.004	-.050	.960
q6. Improves profitability	-.039	.080	-.042	-4.485	.628

q7. Reduces investment in inventory	.226	.113	.244	1.999	.047
q8. Improves labour productivity	-.072	.131	-.076	-.552	.581
q9. Reduces distribution cost	-.026	.083	-.027	-.309	.757
q10. Reduces waste management cost	-.067	.085	-.075	-.791	.430
q11. Reduces product purchasing cost	.012	.138	.011	.085	.932

Conclusion

The agreement of participants on different items associated with impact on the financial performance variable confirmed that the significant effect of reverse logistics is recognised on gross profit margin, market share growth, profitability, labour productivity, reduction in distribution cost and waste management cost. Therefore, reverse logistics improve financial performance. For the hypothesis testing, at first the Descriptive Statistics of each item with their mean and deviation of the value from their mean was analysed. There were 11 items related to the dependent variable, "How long has your firm established reverse logistics practices". Further, for the null hypothesis stating that "Adoption of reverse logistics has no significant impact on the financial performance of the firm", the statistical testing for 11 items with the help of t values and p values was done. It is suggested that the larger the absolute value of the t-value is, and the smaller the p-value is, it shows a greater evidence against the proposed null hypothesis. The test results showed that for item no. 4 stating "Reduces asset recovery cost" and no. 7 stating "Reduces investment in inventory", p-value is less than 0.05 and therefore, it is significant and the null hypothesis is rejected. Hence, it can be stated that adoption of reverse logistics significantly impacts the financial performance of the firm by reducing the asset recovery cost and investment in inventory. In the table above p-value is less than 0.05 for q4 and q7 indicating that it is significant, so we reject H0 and conclude that Adoption of reverse logistics has a significant impact on the financial performance of the firm.

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