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1 Introduction

This research studies the impact of two reverse logistics business strategies on profitability of the firm through operations management. The study is employed on scrap steel industry. The first strategy is Production Mix Efficiency (PME), which is involved in the process of producing goods. The second strategy that this research analyzes is Product Route Efficiency (PRE), which engages in the transportation of goods. Finding indicate that operations management alone does not have a positive impact on profitability. However, the two strategies have a positive effect on profitability, which provides a potential answer to firms trying to improve profitability.
2 Manifest Variables

Production Mix Efficiency flexibility is the ability to produce a wide range of products, to accommodate modifications to existing products, and to assimilate new products, all with minimal degradation of performance (Slack, 1987). These “mixes” are based upon factors such as current demand, material availability, equipment, and profit margins. Also, firms may be limited in the amount they can produce and may not be able to match demand. Letmathe and Balakrishnan’s (2005) study shows a relationship between optimal Production Mix Efficiency and environmental factors such as waste. This provides evidence that one factor may affect another and that the environmental factor must be taken into consideration when dealing with the Production Mix Efficiency. It is important with regard to profitability to make the most of the materials a firm has. This is achieved by using the materials the firm has to produce a mix of products to achieve maximum profitability, Wahab (2005). Hence, the importance of PME to a firm’s profitability and the inclusion of it in this study.

Logistic systems management in distribution channels is a complex process. Integration is needed on all levels to ensure channel efficiency and maintain high levels of customer service (Haas, Murphy, and Lancioni, 2003). These routes can determine whether shipments are on time or late. They also can affect profitability by potentially optimizing route schedules. Information support is also important in the area of product transportation and routing. Authorizing, tracking, and handling returns can positively impact both economic and service quality-related performance (Daugherty, Richey, Genchev, and Chen, 2005). Therefore, Production Route Efficiency must also be considered in this study to ascertain its effect upon profitability.

3 Reverse Logistics Importance

Dowlatshahi (2000) indicates that “from design through manufacture to consumer, firms should explore and integrate reverse logistics as a viable business option in the product life cycle.” Dowlatshahi (2000, 2005) also placed emphasis on the needs for more research in strategic issues of reverse logistics. This research focuses on the reverse aspect of the businesses studied, as research suggests its importance.

The focus of this research was to examine the relationship between Operations Management (OM) and Profitability (PF) from a reverse logistics standpoint using the scrap steel industry as a case study. In addition, this study analyzed some factors (production mix efficiency and product route efficiency) that will affect profitability. Structural equation modeling was used together with confirmatory factor analysis (CFA) to analyze and evaluate the proposed relationships. The conceptual model will be composed of four first-order constructs and six second-order constructs. There are a total of 48 indicator items for the complete model. These 48 items when combined give an accurate overall analysis of the hypotheses, which will be listed in detail.

4 Conclusions

Five hypotheses were developed. Three of the four hypotheses in this research were supported by the data. Hypothesis 1 stated that increased levels of Operations Management (OM) factors will have a significant, non-positive increase on Profitability. Support was found for hypothesis one. Hypothesis 2 states increased levels of Operations Management factors will have a significant, non-positive increase on Production Mix Efficiency. Hypothesis 3 states that increased factors of Production
Mix Efficiency will lead to an increase in Profitability. Support was not found for either Hypothesis 2 or Hypothesis 3. Hypothesis 4 states the following increased levels of Operation Management (OM) factors will have a significant, non-positive increase on Production Route Efficiency. Hypothesis 5 says that as Production Route Efficiency factors increase so will Profitability. Support was found for Hypotheses 4, and 5.

The results of this research indicate that there is not a direct, positive relationship between operations management and profitability. Therefore strategies such as the two proposed must be implemented in order to achieve the goal of profitability.

References


