Chapter 6

REVERSE LOGISTICS PERFORMANCE EVALUATION METHODS AND CRITERIA: A SYSTEMATIC LITERATURE REVIEW

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INTRODUCTION

Legal regulations, environmental concerns and producer responsibility make manufacturers responsible not only for producing products but also for the subsequent process of end-of-life products (Bogataj & Grubbström, 2013). Reverse logistics has many advantages such as reducing processing costs, reducing opportunity costs for faulty or outdated products, ensuring efficient use of resources and protecting the environment (Abdulrahman et al., 2014; Chiou et al., 2012).

Reverse logistics is also a tool that enables organizations to control rising costs and increase the value of their products. For these reasons, it is important for organizations to understand the use of reverse logistics to improve their performance (Ramirez, 2012). The reverse supply chain must be measured to be effective for performance improvement in the organizations. The first condition for increasing and achieving business excellence is to develop and implement a performance measurement system to measure the effectiveness and effectiveness of actions (Kennerley & Neely, 2002). Performance measurement is an analysis of whether or not a business has reached its pre-determined goals. Given that the non-measurer cannot be managed, in order to gain access to the level of performance desired by the business, it is first necessary to have developments in the field of performance measurement. The performance measures implemented in reverse logistics determine the potential problems that may arise at every stage of the chain and provide necessary precautions to the enterprises.

Although reverse logistics is a very important issue, there has been a remarkable increase in academic studies and industrial applications especially in the last 10 years (Bai & Sarkis, 2013). Among these, performance evaluation is rarely discussed (Fernandes et al., 2018).

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verse logistics performance evaluation studies. At this point, 41 different criteria (1-Customer/Customer Service/Stakeholder 2-Financial 3-Process/ Internal and External 4-Innovation and Growth 5-Environmental 6- Recovery (Asset/Value/ Product/Facility) 7- Sorting and Storing/Inspection and Sorting 8-Gate Keeping 9-Transportation 10-Suppliers/Supplier Commitment 11-Social 12-Economic Programs 13-Image Programs 14-Citizenship Programs 15-Flexibility 16-Quality 17-Legal Programs 18-Manufacturers 19-Distributors 20-Intermediate Measures 21-Management Commitment 22-Material Features 23-Recycling Efficiency 24-Recycling Cost 25-Dependability 26-Cost Efficiency 27-Returns Flow and Time Related 28-Collection 29-Degree of Disassembly 30-Manufacturing Plant 31-Distribution Center/Warehouse 32-Lead Time 33-Products Reused 34-Products Remanufactured 35-Products Recycled 36-Products Parts Harvested 37-Input Quantity Level 38-Output Quantity Level 39-Costs 40-Disposition 41-Process Efficiencies) emerged.

Among these, the most commonly used criteria were Customer, Innovation, Financial, Process, Environmental and Recovery criteria.

Finally, in this research, we introduce a review and summarize the reviewed researches in a table focusing on area of application, framework dimensions and established indicators, applied approaches and methods. It is helpful for researchers to direct their future work and research questions to overcome in the existing researches.

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