

Chapter 6

Reverse Logistics Effect on Promoting Circular Economy by Mediation of Closed- Loop Supply Chain in the Horn of Africa

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ABSTRACT

In order to investigate the connections among reverse logistics (RL), closed-loop supply chains (CLSC), and circular economy (CE) principles in the Horn of Africa, this study, “The Influence of Reverse Logistics on Promoting Circular Economy through Closed-Loop Supply Chain in the Horn of Africa,” uses regression analysis. Significant favorable relationships were found in the data gathered from different supply chain management stakeholders. With a regression coefficient of 0.864 ($p < 0.001$), the results manifest that RL significantly influences CLSC, emphasizing the vital role of influence reverse logistics procedures. With a value of 0.328 ($p < 0.001$), a positive correlation among CLSC and CE was also discovered, indicating that improvements in CLSC procedures boost the efficacy of CE programs. The correlation among RL and CE is exceptionally robust, with a regression coefficient

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of 0.957, underlining RL's important role in promoting circular economy activities. To sum up, successful closed-loop supply chains and circular economy ideas depend on reverse logistics.

INTRODUCTION

In the past few years, the concept of reverse logistics has grown in popularity, particularly as the global community has begun to recognize the importance of resilience and the influence of resources (Sonar et al., 2024). Reverse logistics is critical to promoting the Circular Economy (CE) because it facilitates the recovery, recycling, reusing and recycling of commodities and resources. This strategy not only eliminates waste as well augments a resilient economic model by allowing resources to be used as long as possible (Yang et al., 2024). The Eastern part of Africa is an important case investigation for learning about how reverse logistics might strengthen circular practices beneath closed-loop supply chains, as it has unique socioeconomic possibilities and limits (Wilson et al., 2022). Thinkers like Kenneth Boulding, who envisioned an economy that emulated natural processes, made early contributions to the circular economy notion in the 1970s. The CE framework has changed throughout the years, manifesting the necessity of reconsidering conventional linear models of production and consumption (Mahmoodi et al., 2024). Reverse logistics has been accomplishment manifested in a variety of industries, as demonstrated by empirical investigation, which also manifests how it may augment resource efficiency and economic resilience (Alvim et al., 2024). Influence reverse logistics, according to studies, not only lessens the influence on the surrounding but also creates economic significance by creating new income streams through recycling and remanufacturing (Sonar et al., 2024).

Considerate the function of reverse logistics in establishing a circular economy requires taking into account the Eastern part of Africa's specific socioeconomic constraints. This region presents unique problems, such as high poverty rates, informal economies, and limited access to knowledge, all of which influence how well reverse logistics can be manifested (Minerbo and Brito, 2022). According to the World Bank, around 30% of the Eastern part of Africa's population lives below the poverty line, which has an influence on consumer attitude and the viability of returnable merchandise systems? In such cases, corporates frequently rely on informal networks for overseeing returns, outcompeting in inefficiencies and a lack of uniformity. This concept is manifests by a case investigation of a local Ethiopian beverage corporate (Akbari & Hopkins, 2022). By cooperating with informal garbage collectors, the corporate created a method for collecting and recycling glass bottles, minimizing surrounding influence while also augmenting local livelihoods (Belhadi et al.,

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