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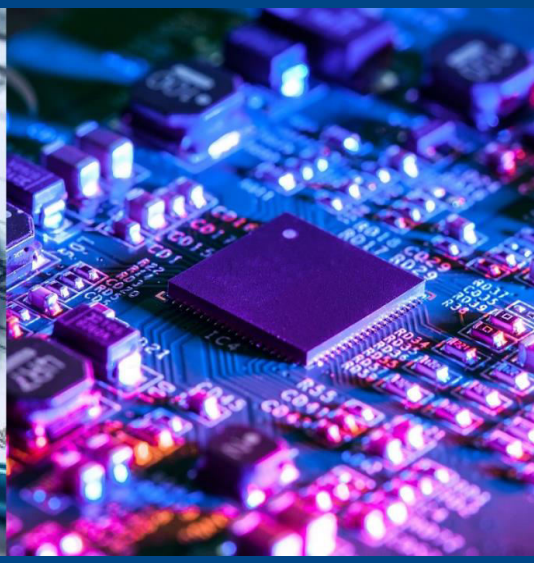

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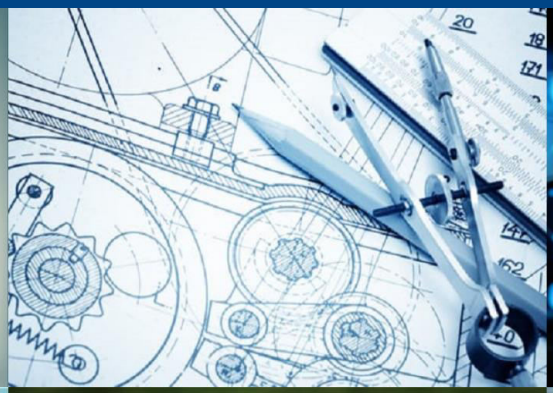

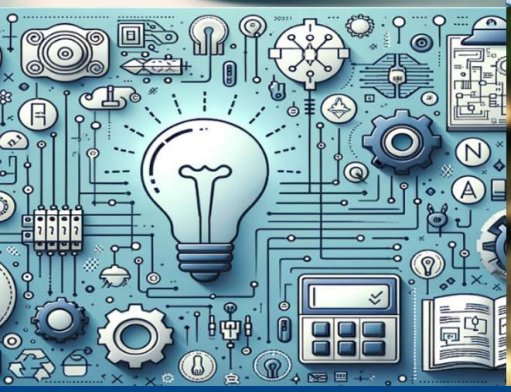

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Going Green in Supply Chain Management: Trends and Challenges from Emerging Economies in Flipkart

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ABSTRACT: The global imperative to combat climate change has intensified the focus on greening industrial supply chains, particularly in high-growth e-commerce sectors like Flipkart. Green Supply Chain Management (GSCM), characterized by practices like eco-friendly sourcing, carbon-neutral logistics, waste reduction, and digital traceability tools, offers transformative potential to reduce environmental footprints. However, the implementation of these practices is not without challenges. This study aims to identify and evaluate the barriers to GSCM adoption in Flipkart, a major e-commerce player from an emerging economy. The Step-wise Weight Assessment Ratio Analysis (SWARA) method is employed to systematically assess and prioritize these barriers.

KEYWORDS: Green supply chain management, e-commerce, Flipkart, sustainability, barriers, carbon footprint, reverse logistics, digital traceability, environmental compliance, SWARA

I. INTRODUCTION

The e-commerce sector, led by companies like Flipkart in India, is transforming retail by streamlining delivery systems and customer experience. However, it contributes significantly to environmental degradation through packaging waste, high energy consumption, and carbon-emitting logistics. The adoption of Green Supply Chain Management (GSCM)—including sustainable sourcing, green packaging, and circular economy practices—has emerged as a vital solution. Despite its benefits, GSCM adoption in emerging markets faces hurdles such as cost constraints, policy gaps, and limited awareness. This paper seeks to explore these barriers in the context of Flipkart.

II. LITERATURE REVIEW

GSCM aims to integrate environmental concerns into every step of the supply chain. In emerging economies, implementing GSCM is challenged by infrastructure limitations and lack of regulatory enforcement. Luthra and Mangla (2018) identified organizational, technological, and environmental barriers in Indian supply chains. Mittal et al. (2018) highlighted the lack of GSCM readiness in retail and logistics sectors. While many companies are aware of the environmental impact of their operations, the actual implementation of GSCM in the e-commerce space—especially in firms like Flipkart—is still at a nascent stage.

III. RESEARCH METHODOLOGY

To investigate the barriers to GSCM implementation in Flipkart, the study adopts the Step-wise Weight Assessment Ratio Analysis (SWARA) method. SWARA, developed by Kersuliene et al. (2010), helps in calculating the weight of decision-making criteria based on expert opinions. Unlike AHP and BWM, SWARA reduces the need for pair-wise comparisons and is particularly suited for prioritizing subjective barriers using linguistic ratings provided by domain experts.

IV. DATA COLLECTION AND ANALYSIS

A questionnaire was emailed to ten executives from Flipkart involved in sustainability, logistics, and procurement. They were asked to rate the barriers in terms of their relative significance using linguistic terms (e.g., very high, high, medium, low). Respondents are coded as DM1, DM2,…, DM10.

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- Step 1: Experts provided significance ratings (pi) for each identified barrier.
- Step 2: Mean scores were computed to derive aggregated significance, which fed into the SWARA methodology to calculate relative weights and rankings.

VII. DISCUSSION

The analysis revealed that lack of green infrastructure (B3) and high implementation costs (B7) are the most critical barriers to GSCM adoption in Flipkart. These are followed by inadequate government incentives (B5) and limited awareness among vendors (B1). Though barriers like customer resistance to higher prices (B4) and technological incompatibility (B6) were ranked lower, they still influence GSCM progress. Addressing top-ranked barriers through policy incentives, vendor training, and investment in green logistics could improve GSCM adoption significantly.

VIII. CONCLUSION

The study identifies the most pressing barriers to GSCM in Flipkart as infrastructural gaps and high costs. These challenges reflect broader systemic issues in emerging markets where environmental priorities often compete with growth and affordability. Tackling these challenges through digital transformation, policy support, vendor partnerships, and consumer education can accelerate the green transition in Flipkart's supply chain.

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