

Effective Waste Reduction Practices in E-Commerce Businesses

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Abstract

Shopping online is huge now, and you can buy stuff whenever you want. However, it also generates much more waste, especially from packaging and returns. This study examines how online stores reduce waste and what shoppers know about eco-friendly choices. For the study, a survey of 40 people was conducted and existing studies were reviewed. The study found that most shoppers want less packaging and more recyclable items, and that using less cardboard packaging, eco-friendly materials and simple returns reduces waste. Dealing with waste is the need of the hour which helps to protect the planet and keeps businesses operating in a sustainable way.

Keywords: E-commerce, Waste Management, Sustainable Packaging, Green Commerce, Recycling, Reverse Logistics

Introduction:

Shopping everywhere has been completely flipped by e-commerce. Now that everyone uses the Internet, smartphones, and online payments, people buy stuff online because it is easy, saves time, and there is more stuff available. Big names such as Amazon and Flipkart have helped things grow fast and made customers happier. However, this growth has also created new environmental problems, mostly with trash and resource depletion.

A major concern with e-commerce is the amount of packaging used. You get items wrapped in plastic, cardboard, and who knows what else, all to keep them safe on the way here. Although it may protect the item, it causes significant pollution. When people send things back because they messed up the order, it arrived busted, or they just felt like it, that is more waste and emissions (van Loon et al., 2015).

We need to buy less, reuse more, and recycle to deal with the e-commerce trash. Reducing waste is the key to protect the environment and achieving sustainability. Sustainable development is about ensuring that we have what we need now without screwing things up for people later (Geissdoerfer et al., 2017).

People are more aware of environmental problems and want businesses to be greener. Companies have started using better packaging, cutting waste, and running things more efficiently. Therefore, we should check how good these waste-cutting ideas are for online stores.

Objectives of the Study:

- To identify good practices in waste reduction in e-commerce businesses.
- To explore consumer awareness of green packaging.

Literature Review:

The impact of e-commerce on the environment has been the subject of many studies. Packaging is a key environmental issue, as it comprises a large part of the waste. Sustainable packaging options, including recyclable and biodegradable packaging, can positively impact the environment, as stated by Escursell et al. (2021).

The principle of a circular economy has recently attracted considerable attention. Waste minimization is the practice of minimizing waste through reusing, recycling, and resource-efficient use. Geissdoerfer et al. (2017) discuss that the implementation of circular economy practices, among others, that prevent linear production models and production overconsumption can improve a firm's sustainability.

Logistics and transportation systems also contribute to the environmental challenges of e-commerce. Pålsson et al. (2017) emphasize that energy consumption and emissions from delivery processes can be reduced through efficient logistics management. Similarly, van Loon et al. (2015) argued that optimizing delivery routes and reducing packaging size can lower carbon emissions.

Kannan et al. (2024) discuss the importance of green packaging in e-commerce and suggest that businesses adopt eco-friendly materials to meet consumer expectations. Sarkar (2023) highlights that sustainable practices not only reduce environmental impact but also enhance business performance and customer satisfaction.

Reverse logistics, which involves handling product returns, plays a crucial role in waste management. Thakur et al. (2024) emphasize that efficient return management systems can reduce waste and improve resource utilization.

Overall, the literature indicates that sustainable packaging, efficient logistics, and consumer awareness are key factors in reducing waste in e-commerce.

Methodology:

A descriptive research design was used to examine the waste minimization activities of e-commerce firms. To guarantee a thorough analysis, the data for this study were acquired from primary and secondary sources.

Data Collection:

- **Primary Data:** A survey conducted using a structured questionnaire on 40 participants, including students and online shoppers.
- **Secondary Data:** Published data from scholarly journals, research articles, and reports are also used for the study.

Sampling Method:

A convenient sampling technique was used considering the time factor and availability of the subjects.

Tools Used:

- Percentage analysis
- Tabular form
- Simple comparative analysis

Area of Study:

This study was conducted on a sample group consisting of local area/college respondents. The approach taken is in line with the typical methodologies employed in e-commerce and green studies (Mangiaracina et al., 2015; Wiese et al., 2015).

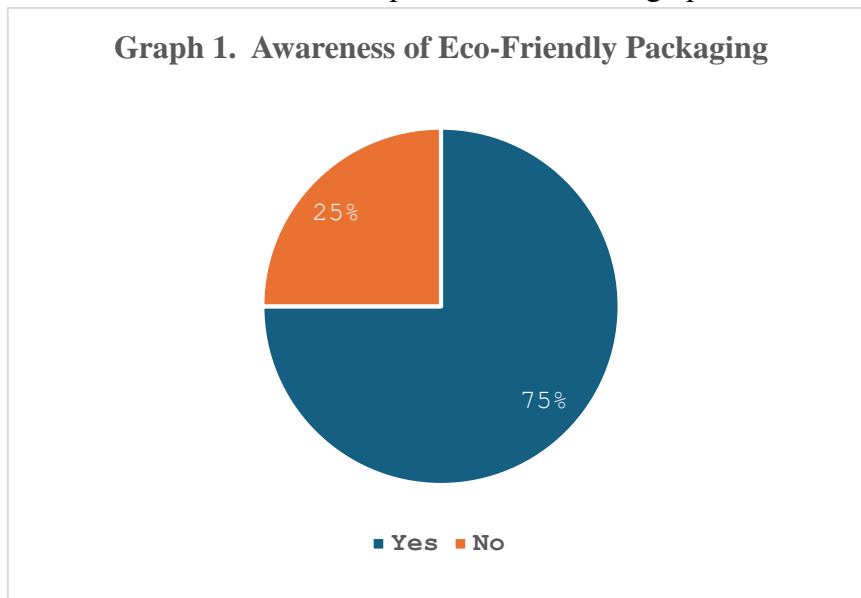
Results:

Table 1: Awareness of Eco-Friendly Packaging

Response	Percentage
Yes	75%
No	25%

Source: Field Survey

The above data is pictured in the next graph.



The responses recorded in Table 1 point clearly to a very large positive for the environment:

Eco-friendly packaging report: Very high awareness: As many as 75 of them were aware of eco packaging! This means that three out of four people are aware of sustainable packaging solutions.

The ignorant are a Misunderstanding minority: Only One in Four claimed to be ‘unaware’, signaling that ‘aware’ and ‘eco-friendly’ are not niche terms.

Market Implications: The high score (75 percent) suggests a ready market for sustainability-minded brands. This will encourage more customers to look for products with reduced environmental footprints.

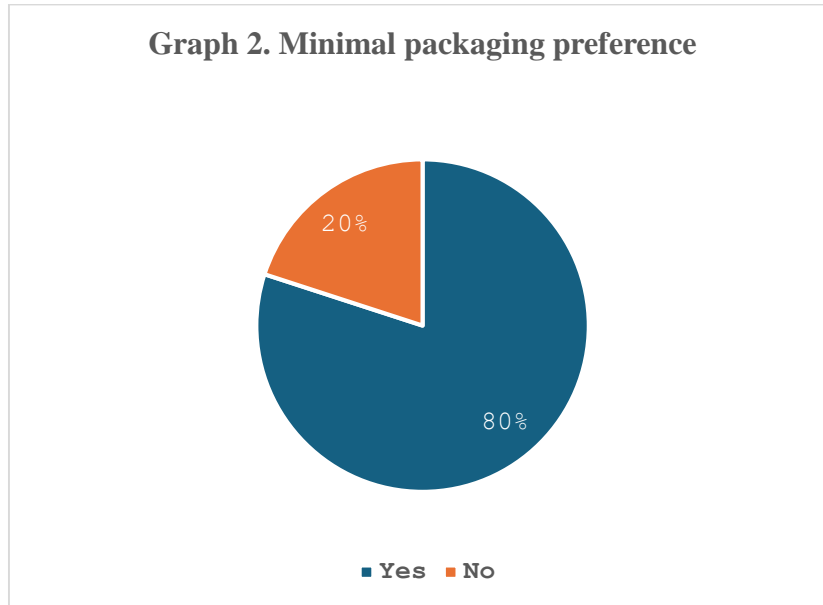
Growth Potential: 75% is good, but the 25% “No” response indicates that there is a little more room for us to educate consumers and grow this practice to become a universal practice.

Table 2: Minimal packaging preference

Response	Percentage
Yes	80%
No	20%

Source: Field Survey

The above data is pictured in the next graph.



The information in Table 2 demonstrates that consumers tend to have a strong preference for packaging with fewer designs.

Strong Preference: Up to 80% of respondents preferred less packaging. The results indicate that the vast majority of consumers favour efficiency and minimization over- elaborate or excessive reminders on packaging.

Traditional packaging was the least favored: Only 20% of the respondents admitted that they did not prefer minimalist packaging, possibly due to the presumption (albeit wrongly) that it offers greater product protection or that it is more luxurious.

Connection to Environment: This predilection is likely a product of increased consciousness of packaging waste (as supported in Table 1). Consumers have now begun to equate “less” with “better for the planet.”

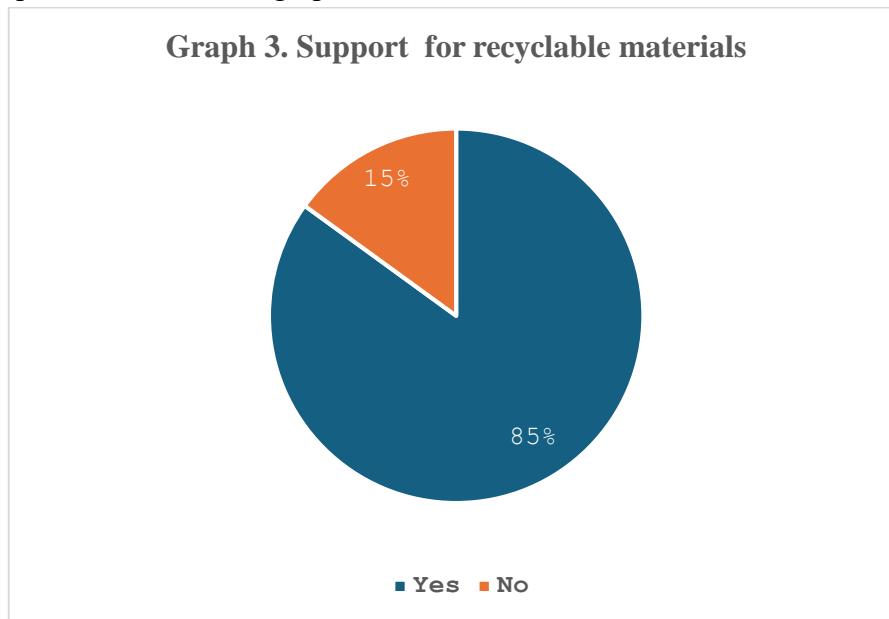
Strategy for the brand: For brands, the data speaks for itself: they need to run a tighter packaging ship. Reducing materials speaks to consumers and can save money on shipping and help create a more minimalist carbon footprint.

Table 3: Support for recyclable materials

Response	Percentage
Yes	85%
No	15%

Source: Field Survey

The above data is pictured in the next graph.



The results of Table 3 reveal that a vast majority of consumers agreed to include recyclable materials in packaging.

Top Tea Support: 85% were in favor of recyclable materials, which is the most clear-cut consensus over all three tables, suggesting that recyclability is the greatest concern for consumers.

Commercial Insight: Although 85 per cent of consumers identifying packaging for recyclability is promising, it represents yet another stage in consumer expectations, where providing packaging that is recyclable is not an additional feature for brands – it's the minimum to which they can aspire. Consumers designate non-recyclable materials as a major barrier.

Sustainable harmony: Beginning with awareness (75 per cent) and preference for light packaging (80 per cent) through to support for recyclables (85 per cent), actual behavior consistently backs demonstrated intentions and reflects a growing commitment to consumer duty.

Major Findings:

- People have largely become aware of eco-friendly packaging.
- Rather than more packaging, they actually want less packaging when they order online.
- Many shoppers also support the use of recyclable packaging.
- Overall, there is a clearly positive public mood on sustainability.

These observations correlate with previous studies on consumer preference for sustainable practices (Sarkar, 2023; Wiese et al., 2015).

Discussion:

The research indicates that people online care deeply about the environment and want e-commerce to do better. People are aware of more environmentally friendly alternatives and are willing to support companies that provide them with these alternatives. Because reducing packaging is a consumer preference, this is good news for companies: they can save materials without upsetting customers. These findings are consistent with the results of Escursell et al. (2021), who found that the reduction of packaging waste is relevant.

Clearly, people are hungry for recyclable products, and it is time for companies to provide more solutions in the packaging arena. In 2024, Kannan et al. re-emphasized that green packaging not only fulfils consumer expectations but also enhances a brand's reputation.

Reverse logistics is also important. When organizations process product returns efficiently, they reduce waste and improve their operations (Thakur et al., 2024). If they streamline logistics and shipping, they will consume less energy and release fewer carbon emissions (Pålsson et al., 2017).

This is in line with the principles of a circular economy, which focuses on reducing waste by reusing and recycling as much as possible (Geissdoerfer et al., 2017). Therefore, if e-commerce companies fully adopt these moves, they can maintain their sustainability and profit streak.

Recommendations

- Opt for sustainable or compostable packaging
- Omit any unnecessary packaging materials in orders
- Provide reusable packaging solutions if feasible
- Facilitate returns and recycling for customers
- Educate shoppers on the importance of sustainability

Conclusion:

The report concludes that although e-commerce is a profitable business, its sustainability depends on waste reduction. People are more conscious of climate change and prefer to buy from brands with sustainable packaging. Therefore, companies need to step up and use less packaging, switch to recyclables, and streamline returns. Such initiatives benefit the environment, enhance corporate reputation, and facilitate long-term growth.

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