



INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

A Case Study On Green Packaging Practices Between Two Leading E-Commerce Platform Of India

Bipasha Mridha Ghosh^{1*CA}

¹Department of Environmental Science, NSHM Knowledge Campus, Durgapur, West Bengal-713212

ABSTRACT

Every day's hurry and work from home culture during and post COVID period has created a tendency of on line shopping. In addition, the e-commerce platforms are also promoting buying attitude among customer by offering various lucrative offer. This changing attitude of consumer from physical to virtual market, undoubtedly has enhanced profitability to online platform and cozyness in modern life. On the other hand, as products are being supplied from every nook and corners of the world, increasing load of packaging material or solid waste. In this article, packaging practices of two leading e-commerce platforms were studied and pointed out their changed behaviour towards sustainable packaging. The study found that among two e-commerce platform "Amazon" has taken few initiatives but exactly same may not be adopted by another platform "flipkart". However, this research concluded that there is a paradigm shift in the packaging material and sustainable approach in the e-commerce platforms as they have adopted proactive strategy in terms of packaging strategies than reactive.

Key Words: Green Packaging, E-commerce, Sustainable development

INTRODUCTION

"Green packaging" (GP) is an occurrence which developed specific essential need in the modern market. The expansion of GP unlocked the prospect towards businesses to promote their consumables into distinct line, praising the green-friendliness of some while overlooking that of theirs. Such packaging methods will be clarified as a direct result of drive in the thoughts of the purchaser market. As a result of this businesses have increased their rate of targeting consumers who are concerned about the environment [1]. The 'buying and selling' of merchandises and services over an e-platform, as well as the transfer of costs and data, is mentioned to as e-commerce or 'electronic commerce'. "Business-to-business" or (B2B) along with "business-to-consumer" or (B2C) along with "consumer-to-consumer" (C2C), and "consumer-to-business" (C2B) transactions are all possible [2].

The electronic commerce (e-commerce) has started, it's journey in India since 1991 [3]. The major regulating factor for expansion of e-commerce platform is internet connection, which was not easily available to Indian citizen. Internet in India started in 1986 and was primarily accessible to the academic and research institute. Common Indian has started to access internet in India from 15 August 1995. As per forecasted estimation of Cisco, India will have more than 900 million internet users by 2023 [4].

Since 1995 to 2023, Indian telecom industries evolved rapidly, this development promoted the growth of e-commerce [5]. Around 692.0 million internet consumers were in India at the start of 2023, as soon as internet infiltration raised at 48.7 percent [6]. According to The Hindu's report the live internet base in India is anticipated to raise to 900 million by 2025 [7]. With this growth of internet e-commerce also expanded.

The introduction of e-commerce transformed consumer behaviour of Indian, particularly afterward the sharp progress in online infrastructure and the internet of the nation. The probability of online shopping will increase in near future, country like India with 1.4 billion populations and rapidly growing economy it is forecasted by CISCO, that by the year 2027, it will be 427 million. Subsequently, the growing e-commerce industry is projected to be valued over 350 billion U.S. dollars by 2030 [8]. The expansion of e-commerce concept also enhances the possibility to affect environment, therefore it is considered as basic responsibility of all "e-commerce" platform to promote sustainable or green packaging in country and abroad.

OBJECTIVE

Aim of this article is to focus on the online green packaging behaviour of leading e-commerce platform of the world. It attempts to find out the trends of e-purchasing, hence e-commerce packaging fabrication its material and usage in recent years, and their ecological consequence. This paper analyses the development of green packaging trend in e-commerce packaging focusing, specifically in post COVID era. The prime purpose was to recognize research gaps in e-commerce wrapping and to propose new research lines aimed at reducing its environmental impact.

METHODOLOGY

The two leading e-commerce platform the Amazon and Flipkart are considered for study. Sustainability related information has collected from their authorized website as well as published research article. Thereafter, through chronological review survey it is represented in the article. The packaging medium of e-commerce platforms are vary depending on materials supplied, although broadly they use the material as represented in Table-1. The packaging material mainly depends on the nature of product, like the fragility, perishability etc.

Table-1: THE SUSTAINABLE PACKAGING PRINCIPLE IN E-COMMERCE PLATFORMS [9], [10]

e-commerce platform	Amazon	Flipkart
Sustainable Packaging Parameter		
Corrugated Boxes	yes	yes
Courier Bags	yes	yes
Adhesive Tapes	yes	yes
Stretch Wraps	yes	yes
Bubble wrap	yes	yes
Antistatic bubble wrap	yes	yes
Air cushion packaging	yes	yes

REVIEW OF LITERATURE

The packing ingredients are directly influence energy usage as well as waste production, while waste generation is increasing concern for government and conservationist [11], [12]. In reference to Fig. 1, the weekly production of packaging materials through food intake per person, home storage, home cooking, transport, and retailing are compared here. This study reveals, the food supply and its' packaging can produce

maxim energy. Moreover, package mass and size are also significant because they effect energy usage [13], [14] .

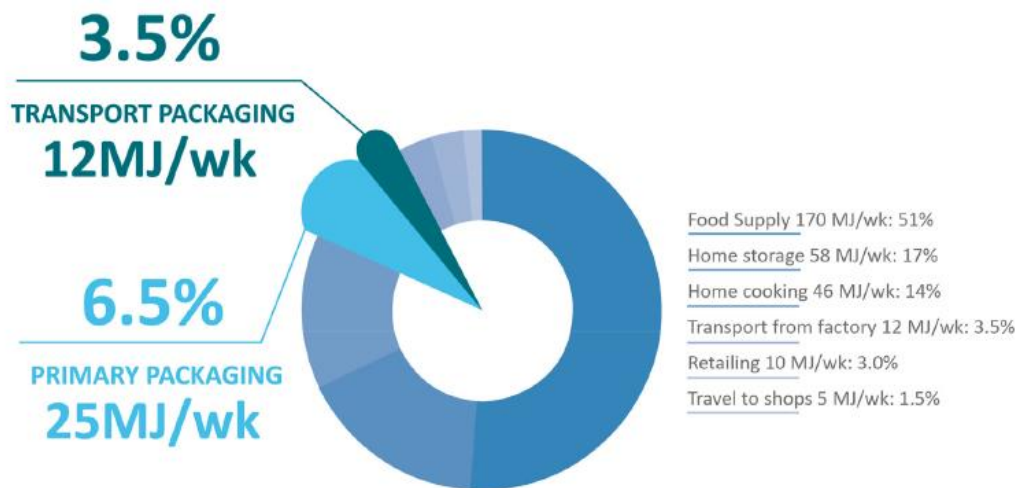


Fig. 1. Quantity of energy required, in MJ, Adapted from [14]

Depending on current research, packaging materials and expertise changed quickly till the 1990s. Thereafter, it became difficult to further decrease their cost and environmental effect. Moreover, few packaging stuffs continued to be prepared from non-renewable materials to renewable for the growth of e-commerce. Additional investigation is required to find out with a new package from renewable sources such as cellulose-containing supplies, which are easily available in nature, or from reused cellulose-based ingredients such as carton board. Improving distribution processes with new, more effective tools could additionally help alleviate the environmental impact of packaging [14].

Reuse of packaging signifies a foremost opportunity to keep the functionality of the material and merchandise, and achieve possibly great reductions in material use and environmental impacts. Recyclable forms of wrapping have factually been used in a lot of presentations and are still found, both in B2B and in B2C [15]. Novel B2B advances are identified and recognized as enterprises are trying to invent ways to advance the sustainability of their supply chains. For instance, “Ghirardelli Chocolates” from California has introduced recyclable transports to replace cardboard containers for Internal delivery [16].

ECOLOGICAL IMPACTS OF REUSABLE PACKAGING

Review work shows a significant drops in packing material use as much as possible, both in primary purchaser packaging or B2C [17]. Significant aspects that affect both the finances and ecological impacts of reusable packaging are conveyance distances, return charges, and the influence of organizing, spring-cleaning and maintenance [18]. It is also necessary to study from the unsuccessful or successful of reusable packing schemes [19].

PROSPECTS FOR REUSABLE PACKAGING METHODS

In recent past packaging industry advances and has shown numerous instances of recyclable packaging methods, but in reality not all supply chains are appropriate for the use of recyclable packaging methods, or it may not be given in environmental advantages. Henceforth, for every set of products, supply chains, and distribution scheme, a critical examination is necessary to possibly grow a “sustainable recyclable raft system”. The shift towards eco-packaging desires a supply chain method, with specifications of key and ancillary wrapping, observing systems, proprietorship, inverse logistics, and service organization [20].

RESULT

The report of Amazon Sustainability was published on 2022 [21] and according to that report Fig.2, Fig.3, Fig.4 are used in this article. The analysis of report and Fig.2, reflects the prospects of Amazon’s view in regards to promote sustainability and moreover to become more sustainable professional as it needs a defend, multidimensional approach—one that contemplates and discourses both conservational and social controls.

They are employed to gauge and collaborate with other parties to cut emissions, waste, and water consumption on the other hand innovating methods to improve packing and product performance. Moreover, they are searching for ways that will respect the human rights of people all through their supply chain [21].



Fig. 2: Sustainability Review of Amazon ,Year 2022 [21]

Fig.2, also represents that in year 2022, Amazon became successful to reduce Carbon emission 7%, capable to reduce carbon emission. Moreover, this corporate become world’s largest corporate purchaser of renewable energy and also promoted clean energy concept. To encourage the other SDG goals like zero hunger, white collar jobs, water conservation and many others. Furthermore, since 2015 this e-commerce platform became capable to 2 M+ (two million) tons packaging materials.



Fig. 3: Sustainability Approach of Amazon ,Year 2022 [21]

The Fig.3 represents sustainability approaches like ‘Driving Climate solutions’, ‘Reducing Waste and packaging’, ‘Protecting Natural Resources’. They are also empowering women and advancing human rights and every moment they are innovating their products and services.

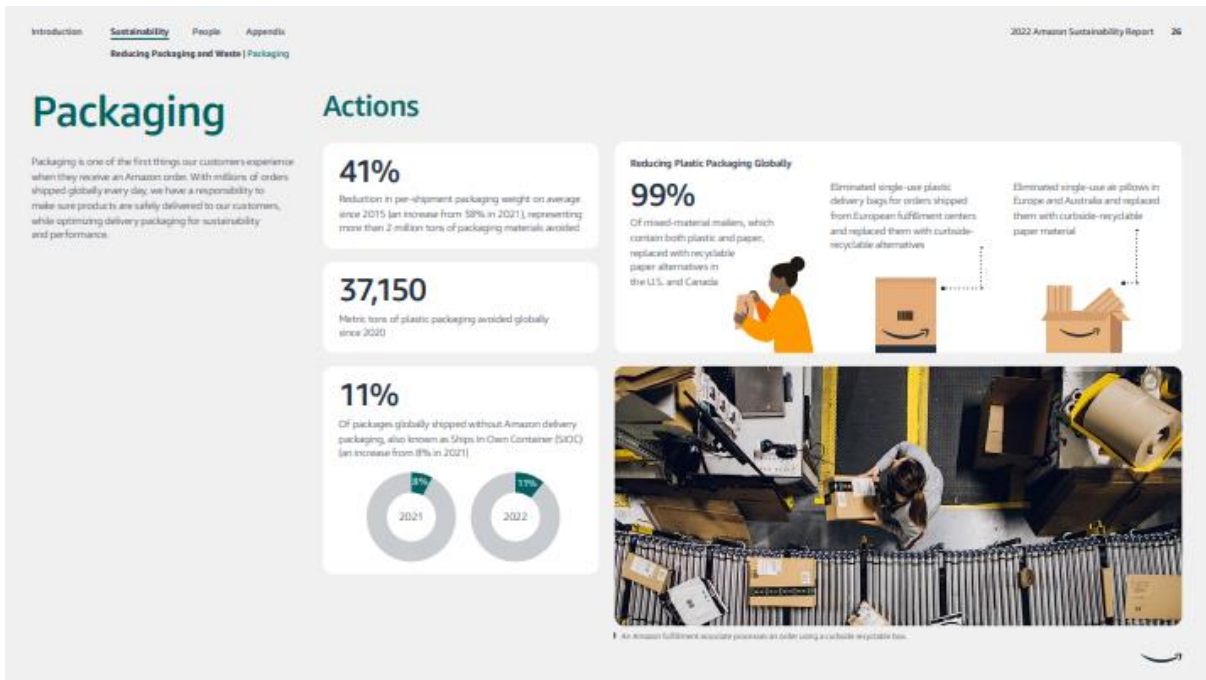


Fig. 4: Sustainability Packaging Approach of Amazon Year 2022 [20]

The Fig. 4: represents 41% reduction in pre-shipped packaging weight on average since 2015 and more than 58% packaging material was recycled in 2021. With good notes, moreover 37,150 metric tons' plastic package were avoided and furthermore 11% of packages globally shipped without packaging material in 2022, while in 2021 it was 08% [21].

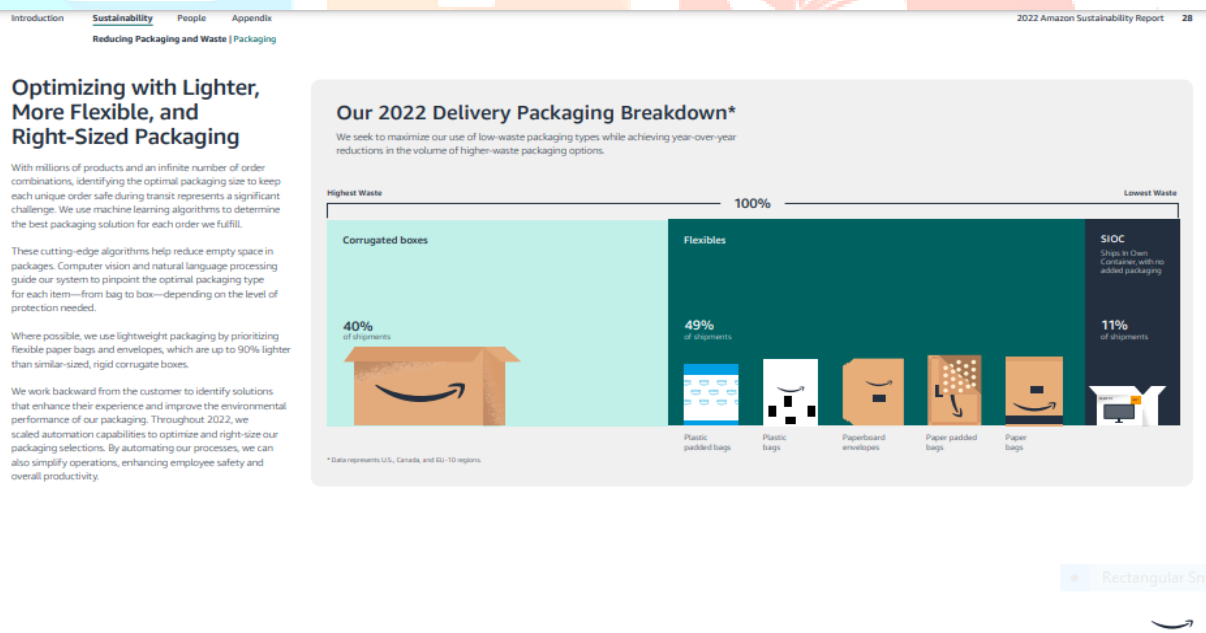
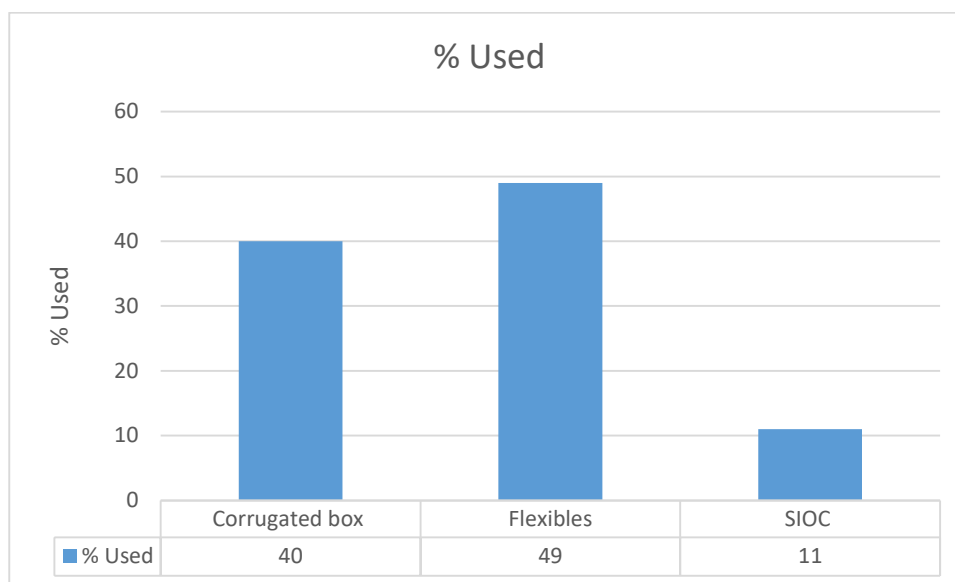


Fig. 5: Sustainability Packaging Breakdown of Amazon Year 2022 [20]

In reference to report and Fig. 5: The Amazon has shared their sustainable packaging strategy. They have mainly divided their packaging in three categories, likely Corrugated box, Flexibles (Plastic Padded Bags, Plastic bags, Paperboards envelopes, Paper added bags, Paper Bags), SIOC (ships in own container).



Graph 1 The Sustainable Packaging Material[20]

On the other hand, **Flipkart** became the first Indian ecommerce firm to pledge to tracking 100% of its electricity needs from renewable energy by year 2030. It acquired the Climate Group's "RE100 promise", becoming a participant of this association of powerful businesses dedicated to 100 per cent renewable electricity by 2030 [22]. Flipkart's would like to transit in more sustainable e-commerce ecosystem where packaging plays an important role to decrease environmental impact. For holistic development this platform and reducing impact flipkart depends on positive partnerships, such as the WWF India's Un-plastic Collective [23]. This platform has more than 400 million users in pan India including e-commerce marketplace and primary fashion terminus "Myntra", has excluded single-use plastic packing in their supply chain or working with suppliers totally. Depending on four pillars – "Engagement, innovation, compliance and capacity building" flipkart has achieved milestones– to find suitable solutions and help partners changeover to sustainable substitutes [23].

Journey of Sustainable Packaging at Flipkart



Fig. 6: Sustainability Packaging Milestones of Flipkart Year 2019-21 [22]

Fig. 6: represents that the e-commerce platform “Flipkart” continues to use bar on plastics throughout its networking and mark the packaging’s sustainability even in a better way, these corporations have recognized some of the subsequent steps to advance the plastic-like value chain, data-based goal setting, an open view to generate an environmental view of the complete waste management journey for plastic packaging, then another step is “Play by the book” where a state-by-state playbook will be created for training and education of all stakeholders (employees, consumers, and suppliers) and most important step is to keep focussing on alternatives where they have to identify and implement the right alternatives to plastic that can sustainably replace plastics. Flipkart’s team piloted a survey to identify the sustainable alternatives to decrease single-use plastic and the utmost efficient way of executing them [22].

	Alternatives	To Replace	Challenges
1	Compostable Bags	Poly based security bags	<ul style="list-style-type: none"> Domestic supply not available in quantities required for Flipkart. Significant cost even at scale. Not compliant with guidelines across regions.
2	Paper bags with Normal HS Lacquer Coating	Poly based security bags	<ul style="list-style-type: none"> Packaging suffered physical damage due to moisture which caused security-related concerns.
3	Paper bags with Fibre Mesh	Poly based security bags	<ul style="list-style-type: none"> Manufacturing capabilities could not be scaled to meet requirements and the alternative was cost-intensive.
4	Jute Based Bags	Poly based security bags	<ul style="list-style-type: none"> Process not scalable in Fulfilment Centres due to constraints around space and productivity. Supply of alternatives was not scalable to meet Flipkart's manufacturing requirements and quality standards.
5	Honeycomb Paper Bubbles	Bubble wraps	<ul style="list-style-type: none"> Customisation as per application was not possible. Not available in quantities required for Flipkart.
6	Paper Fillers	Bubble wraps	<ul style="list-style-type: none"> Process was not scalable in Fulfilment Centres due to constraints around space and productivity. Tried with some more iterations like developing customised machines that can make 2-ply perforated wraps, the alternative to bubble wrap. These machines were installed at vendor locations. Initially, eight vendors (2 in each Zone) installed these machines to supply the converted material to Flipkart. Later, we expanded this to almost all carton vendors.
7	Eco wraps	Stretch films	<ul style="list-style-type: none"> Process was not scalable in Fulfilment Centres due to constraints around space and productivity.
8	Paper wraps	Shrink films	<ul style="list-style-type: none"> Packaging suffered physical damage due to moisture which caused security-related concerns.

Fig. 7: Sustainability Packaging Materials of Flipkart Year 2019-21 [22]

CONCLUSION

The above discussion shows that both the e-commerce platform Amazon and Flipkart are concerned for sustainability. Moreover, both of them are concerned for their packaging materials and supply chain management. In Flipkart, critically approaches are developed to holistically safeguard, circular plastic environment to reduce plastic seepage into environment. As a home-grown e-commerce Flipkart has a great secondary packaging footprint, creating plastic waste management can be considered as key lever in its commitment to sustainability. Flipkart is working with commitment for a green future as well as for a circular plastic economy by helping establish a culture of peer-to-peer knowledge and best practices by substituting between businesses, for fostering collaboration and innovation across their supply chains [23]. On the other hand, Amazon is also operating on an ESG business intelligence platform, where the platform has analysed existing and forthcoming protocols, and media and company reports to measure exterior risks and opportunities [21]. Both the studied e-commerce platform is adopting sustainable measures prior to use, so it can be concluding that for selecting packaging materials and sustainability issues e-commerce platforms are proactive.

Bibliography

- [1] K. Dutta, "• Koushik Dutta, "Green Packaging-A Packaging Practice with e-packaging", 4th National Seminar on "Opportunities & Challenges of Contemporary & Innovative Management Practices", " Silliguri, -6th October 2012..
- [2] V. Zwass, "e-commerce," Encyclopaedia Britannica, [Online]. Available: <https://www.britannica.com/money/e-commerce>. [Accessed 17 11 2023].
- [3] timesofindia, " For the first time, India has more rural net users than urban," 6 MAY 2020. [Online]. Available: <https://timesofindia.indiatimes.com/>.

- [4] HT Tech., "India's internet user base to cross 900 million by 2023 cisco," 9 March 2023. [Online]. Available: <https://tech.hindustantimes.com/tech/news/india-s-internet-user-base-to-cross-900-million-by-2023-cisco-story-IU9SoZlgMjY1EAUtiwhVjK.html>. [Accessed 16 11 2023].
- [5] The Hindu, "Telecom industry to benefit from e-commerce boom: survey," The Hindu, August 2021. [Online]. Available: www.thehindubusinessline.com.
- [6] Digital India, "The state of digital in India in 2023," 13 FEBRUARY 2023. [Online]. Available: <https://datareportal.com/reports/digital-2023-india>.
- [7] The Hindu, "Over 50% Indians are active internet users now; base to reach 900 million by 2025: report," 4 MAY 2023. [Online]. Available: <https://www.thehindu.com/news/national/over-50-indians-are-active-internet-users-now-base-to-reach-900-million-by-2025-report/article66809522.ece>.
- [8] Statista, "E-commerce in India - statistics & facts," 31 Aug 2023. [Online]. Available: <https://www.statista.com/statistics/1191958/india-number-of-annual-online-shoppers/>.
- [9] Shiprocket Packaging, "Choose Perfect Packaging material," [Online]. Available: <https://packaging.shiprocket.in/blogs/ecommerce-packaging/ecommerce-packaging-material>. [Accessed 17 11 2023].
- [10] Amazon, "How Amazon is reducing packaging," 14 December 2022. [Online]. Available: <https://www.aboutamazon.com/news/sustainability/how-amazon-is-reducing-packaging>.
- [11] H. Pålsson, "Selection of packaging systems in supply chains from a sustainability," Technology Science, vol. 26, p. 289, 2013.
- [12] J. Shvarts, "ECO-FRIENDLY packaging materials OF the future: brands must," Brand Packag , vol. 19, pp. 23,, 2019.
- [13] P. L.-M. M. B. R. Sílvia Escursell, "Sustainability in e-commerce packaging: A review," Journal of Cleaner Production,, 2021,.
- [14] J. Kooijman, " Environmental assessment of packaging: Sense and sensibility," Environmental Management,, vol. 17, pp. 575-586., 1993.
- [15] A. Golding, "Reuse of Primary Packaging – Final Report.," Abfallberatung, 1999.
- [16] StopWaste, " Ghirardelli Chocolate Company – Reusable Totes Case Study.," 2005.
- [17] M. J. L. W. E. T. W. Hekkert, "Reduction of CO2 emissions by improved management of material and product use: the case of primary packaging," Resource Conservation Recycle, vol. 29, pp. 33-36, 2000.
- [18] M. Dubiel, "Costing structures of reusable packaging systems.," Packag. Sci. Technol., vol. 9, pp. 237-254, 1996.
- [19] L. B. L. G. M. Rigamonti, "Packaging re-use: a starting point for its quantification.," J. Mater. Cycles .Waste Manage. , vol. 21, p. 35–43., 2019.
- [20] C. d. H. v. H. E. Bakker, "Products That Last: Product Design for Circular Business Models," Amsterdam, The Netherlands., . BIS Publishers,, 2014.

- [21] Amazon, "Building a Better Future Together 2022 Amazon Sustainability Report," 2022. [Online]. Available: <https://sustainability.aboutamazon.com/2022-sustainability-report.pdf>. [Accessed 20 11 2023].
- [22] TOI, "An e-comm giant moves towards sustainability," 16 june 2023. [Online]. Available: <https://timesofindia.indiatimes.com/business/india-business/an-e-comm-giant-moves-towards-sustainability/articleshow/101052159.cms?from=mdr>.
- [23] Flipkart, "Designing sustainable packaging in e-commerce: A WWF India case study on the Flipkart Group," 15 February 2022. [Online]. Available: <https://stories.flipkart.com/designing-sustainable-packaging-wwf-india-case-study/>.

