

# **Convergent optimization of Eco-innovation, Resource-Constrained Product Development (RCPD) & Green Advertising to attain Sustainable Packaging**

**By**

**Dr. Salil Seth**

Assistant Professor, Department of Marketing and Supply Chain Management, School of Business Studies, Central University of Jammu

E-mail: [salil100seth@gmail.com](mailto:salil100seth@gmail.com)

ORCID ID: <https://orcid.org/0000-0002-8842-2552>

**Mrinal Kanti Mahato**

Research Scholar, Department of Marketing and Supply Chain Management, School of Business Studies, Central University of Jammu

E-mail: [mrinalkantimahato333@gmail.com](mailto:mrinalkantimahato333@gmail.com)

ORCID ID: <https://orcid.org/0000-0002-3385-4788>

## **Abstract**

Under immense pressure on the ecological environment due to anthropogenic activities, innovative marketing has developed various approaches like being Customer-Centric, Profit-Centric or Eco-Centric. Eco-centrism, as applicable to innovative marketing when orchestrated with Resource Constrained Product Development (RCPD) can be glamorized to lure the customers via Green Marketing. Sustainable Packaging as one of the tenets of Green Marketing when extrapolated via Eco-Innovation can yield plausible results to lay the foundation of sustainability. Bio-degradable packaging when catapulted via Green Advertising can not only lead to the escalation of eco-consciousness but also strengthen the establishment of sustainability. This conceptual research paper attempts to qualitatively justify the optimization of Resource Constrained Product Development (RCPD) via the combinational effects of Eco-Innovation and sustainable packaging propelled via Green Advertising. Literature from many different fields, including management and environmental sciences, was treated qualitatively by being culled from the vast data archives available online. Deducing feasible inferences and expanding a conceptual model were aided by a method that combined grounded theory and conceptual framework analysis (applied to the framework structuring of the whole literature based on homogeneity). The study is meant to serve as a model for future researchers in the field of industrial green packaging, as well as advocates of sustainable marketing, eco-legal experts, and social attorneys interested in environmental tactics.

**Keywords:** Eco-Centrism, Eco-Innovation, Green Advertising, Resource Constrained Product Development (RCPD), Sustainable Packaging.

## **Research Objective**

To qualitatively justify the optimization of Resource Constrained Product Development (RCPD) via the combinatorial effect of Eco-Innovation & Sustainable Packaging propelled via Green Advertising.

## 2.0 Introduction

The statement green has been more popular in recent years. It has received significant attention due to the importance of a sustainable future. To differentiate themselves from their competition, several firms supply their goods in a more environmentally conscious way. The primary goal of sustainability is to satisfy societal demands while generating profit. Businesses that want to be sustainable should not just be eco-friendly in manufacturing, but also in putting an effort into advertising. Sustainable packaging especially is the most palpable term and has a realistic perspective; so, it's indeed essential to think about sustainability as well. Packaging is essential for all sorts of goods. It entices and motivates people to purchase the merchandise. But, after the items are consumed, the packaging becomes obsolete, and the consumers are no longer satisfied. Sustainable packaging may be a developing demand in the present circumstances in order to eliminate such pollution and progress towards sustainable development. Sustainable Packaging is a weapon for future generations to safeguard the environment. It refers to the adoption of substances and procedures of production for a package design that has a minimal effect on both energy utilization and the natural environment. Businesses and customers may reduce toxins that harm our earth's atmosphere, marine life and land by utilising eco-friendly packaging. Any statements, information, graphics, logos, symbols, and brand names, as well as their interactions with colour, on the packaging, labelling, and advertising created by the companies may fall under this category, depending on the circumstances. It might induce consumers to engage in practices that are damaging to the natural world. In this theoretical research, qualitative data analysis is conducted on literature that has been processed using systematic data mining applied to secondary sources of data. Characteristic conclusions are derived from the conceptual framework analysis and the grounded theory technique employed in this study. It is anticipated that anyone involved in green marketing, environmental protection, sustainability activism, and green policy would gain knowledge by reading this study.

## 3.0 Literature Review

### 3.1 Green Packaging for the propagation of Sustainability

The concept of sustainable packaging refers to the act of transmitting a responsibility toward supportability, ecological actions of organisations, and green product qualities on the market (Ghodeswar & Kumar, 2014). Sustainable packaging has three distinct identities:

1. Sustainable packaging reduces the burden of decompose packaging,
2. It utilises packaging with minimal energy consumption,
3. They employ ecologically friendly packaging.

Effective marketing strategies, such as Green Packaging, Green Pricing, Green Designing and Green Positioning, are at the heart of green advertising since they are what ultimately influence customer behaviour (Mahato & Seth, 2022). The topic of sustainable packaging is often utilised to show an organisation's duty towards environmental sustainability and to improve brand appeal. According to the Global Packaging Trends 2020 report from Mintel, there are two packaging trends connected to sustainability. 1<sup>st</sup> Trend-Packaging companies and brands need to keep releasing new technologies that make use of recyclable materials. 2<sup>nd</sup> Trend-fast-growing package-free grocery outlets that provide on-site restocking. As a result, stores throughout the industry are debating whether or not to facilitate product refills as an alternative to selling items in single-use packaging. Given the importance of packaging to the economy as a whole, its definition has broadened from that

of a material to hold and conserve the commodity to that of a coherent manner to prepare and safeguard commodities throughout the supply chain in a way that maximises efficiency and sales. The packaging industry's perspective on environmental sustainability. Among them are the advantages of eco-design development in packaging for both brands and the planet, as well as the role that technical, corporate, and human skills play in its successful implementation (Sumrin et., al, 2021). Businesses are developing brands on new lines of products to support more ecologically friendly, reusable, recyclable, and sustainable packaging, which necessitates them to invest in brand-new filling processes (Walmart Highlights Sustainability Efforts,2020). The three primary characteristics of sustainable packaging are reducing the amount of non-biodegradable materials used in the packaging, reducing the amount of energy used in the packaging, and employing eco-friendly components (Tuwanku et al., 2018). Sustainable packaging is indeed the practice of using environmentally acceptable materials and trying to minimize packaging's footprint by cutting down on its quantity, size distribution, and weight. The technique appears to be applied for packaging goods that minimize their impact on the natural world (Kassaye, 2001). According to Nguyen, Parker, Brennan, and Lockrey, in the year 2020 stated three important elements of environment-friendly packaging: packaging material, production technique, and marketing appeal. Sustainable packaging includes recyclable materials since it is valued by customers in both developed and developing nations (Young, 2008). To be environmentally friendly, a product must be created in a way that minimises its impact on the environment throughout its entire life cycle, from the gathering of raw materials through the last stages of recycling or disposal. With the goal of reducing waste, eco-friendly package design prioritises the use of renewable resources (Guillard et al., 2018). Consumers look for two forms of reusability in packaging to determine its eco-friendliness: the ability to be used in its current form at home, and its potential as a raw material for other purposes (Lindh, Williams, Olsson, & Wikstrom, 2016). The allure of sustainable packaging to consumers can be thought of by incorporating colour and graphical images presented by numerous visual merchandising methods that may be used to increase the allure of sustainable packaging(Tait, Saunders, Guenther, Rutherford, & Miller, 2016). Green packaging, and printed ads with "green" themes, are advertisements promoting environmental advantages all encourage sustainable marketing (Mahato & Seth, 2022).

### ***3.2 Eco-innovation led Resource-Constrained Product Development (RCPD) for culmination into Sustainable Packaging***

As numerous environmental issues have brought about public awareness, innovative package design focused on sustainable development and assessment of life cycle has turned into a fascinating subject (Nordin & Selki, 2010). There is a positive correlation between market requirements and organizational performance as well as the process of developing environmentally friendly products. If there is a sustainable relationship between market trends and environmentally friendly products, this will undoubtedly result in the company being successful (Lin et al., 2013). Companies that invest in R&D and prioritise environmental considerations in their product designs tend to outperform their competitors (Camison and Lopez, 2012). Resource-Constrained Product Development (RCPD) is a method for creating innovative goods that meet the needs of a wide audience without draining scarce resources. By reducing the time and money spent on developing a new product RCPD is a useful tool. Unexpected advantages include the efficient use of resources, leading to the conservation of limited resources, which further contributes to sustainable development (Sharma and Iyer, 2012). The RCPD process also necessitates a shift to more modern methods of product creation. Re-designing or Innovative designing fundamentals of technology and novel methods of structuring industrial procedures as well as supply chain

interactions are prioritised with a focus on keeping prices low. Instead of investing heavily in new resources to meet an unmet market need, as is done in the conventional method of new product development, RCPD looks for ways to put to good use the limited resources that already exist. Because of this, the market is forced to make do with ad hoc amalgamations of existing technology, talents, and procedures (Economist, 2010), (Prahalad and Malshekar, 2010) and (Baker and Nelson, 2005). The designing of new products, processes, and taking the advantage of scale economies are all ways that RCPD has been tried. While developing a product, RCPD considers both the price and the usefulness of each component. The product development team takes this information into account as they design new products with improved performance, expanded functionality, and lower overall costs. Scale economies are another means of keeping costs down. Due to their large populations, emerging nations can further develop and perfect their processes, resulting in significant economies of scale (Kriplani, 2008). Eco-innovation is implemented to boost sustainable development performance to meet the need for sustainability, it allows organisations to raise productivity to offset the expenses associated with protecting the environment (Chen et al., 2006). Recyclability, biodegradability, simplicity of construction and reusability are hallmarks of environmentally friendly packaging. Organizations may boost their green image in the market by adopting such eco-innovations as more sustainable and eco-friendly packaging (Blanco & Sheffi, 2015). The relationship between the environment and innovation is becoming stronger as businesses attempt to innovate in order to preserve natural resources and reduce the environmental effect of their goods, packaging, and manufacturing processes (Samina Sumrin et al., 2021). If a company uses packaging considering environmental factors as part of its business plan, it may assist the product to enter new markets by connecting with customers. These package improvements offer value for socially aware customers, assisting brands in market positioning. Similar manner, eco-labelling on packaging could serve as an effective marketing tool to raise customer knowledge of a company's green-innovation initiatives (Marsh and Bugusu, 2007). According to Andersen in the year 2010, Eco-innovation not only demonstrates the firm's environmental standards but also provides advantages to the brands are as follows.

- The first advantage might be a price increase on the revolutionary eco-friendly product, method, or marketing initiatives.
- The second advantage is that the firm's manufacturing costs will be reduced since recyclable and reused materials will be less expensive.

### ***3.3 Role of Green Advertising in escalating Sustainability***

Publicity, sales promotions, personal selling, and online advertising are all types of advertising. Advertisements are a kind of impersonal advertising that use various forms of media to present items to people in an effort to generate sales. Advertisers make use of green messaging as a competitive edge is strongly correlated with customers increasing interest in purchasing products that are better for the environment and their shown commitment to conserving natural resources. (Mahato et al., 2023). In order to bolster their reputations as eco-friendly businesses, many businesses engage in what is known as "green advertising," which promotes environmental-focused initiatives run by such businesses (Haytko & Matulich, 2010). Advocating for the purchase of environmentally friendly items and trying to draw attention towards the beneficial effects of such purchases is an example of green advertising (Yang et al. 2015). The company's endeavour to persuade customers to purchase more of their environmentally friendly goods is reflected in the higher price tag of their green advertising campaigns (Kim et al., 2019; Yang et al., 2015). Credibility, in terms of not inflating the environmental perfection of the goods or developing unrealistic

aspirations for customers, is the key to success, thus the communication of ecological excellence must be presented in a reliable manner (Kao & Du, 2020). Nowadays, getting individuals to change their habits in a way that is sustainable and environmentally beneficial is one of the most pressing problems. As the media plays a crucial part in creating values and developing eco-friendly goods, green advertising is a vital instrument for development as well as sustainability to improve long-term prospects for the environment (Matthew J. Cox, 2008). The revenues and sales of promoted items may be boosted if advertisers and marketers adopt ethical business practices. Green advertising is meant to inform people about the advantages of buying environmentally friendly items (Muhammad Zubair Tariq, 2014). In order to be successful in green advertising advertisers must adhere to all applicable laws and be developed with proper consideration for environmental rules and regulations governing ethical business conduct (Pranee, 2010). One notable change brought about by the push for greener package design is the increased attention paid to a certain business when it proudly displays the word "green" among its advertising materials (Tawanku et. al, 2018). In the field of green advertising has been expanding, it has become clear that consumers still have a lot of questions about what it means when a product is advertised as "green," such as biodegradable, eco-friendly, ozone-friendly, and so on. This is because many people lack the understanding of science and technology to recognize these claims (Furlous, 2010).

#### **4.0 Research Methodology**

Since the study is exploratory in nature, it takes a fresh and original approach. The literature was obtained from legitimate secondary information sources. Using a systematic review data mining approach (by employing topic-specific keywords), the literature of relevance was identified and put into comprehensible work-frames. This qualitative study divides the whole literature into three frames based on similarities. As a qualitative research approach, the assimilation found in three frames was then addressed in conceptual framework analysis. Deducing feasible inferences and expanding a conceptual model were aided by a method that combined grounded theory and conceptual framework analysis (applied to the framework structuring of the whole literature based on homogeneity). In this conceptual article, the technique for deriving conclusions is inductive, since the results go from specific to a degree of generality depending on the viewer's and researcher's views.

#### **Research Implications**

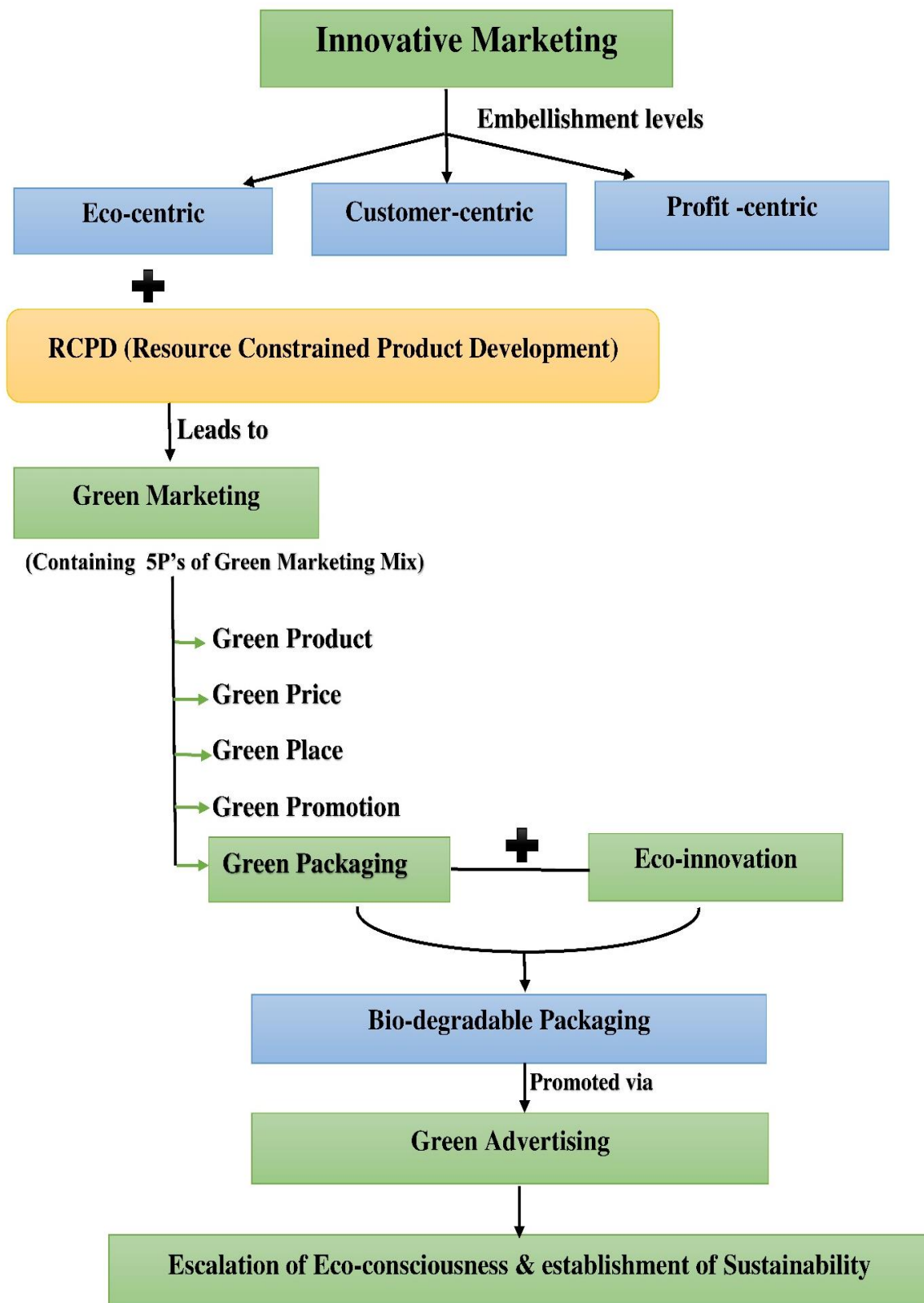
Through establishing a conceptual framework for how Resource Constrained Product Development aids in generating environmentally friendly goods at reasonable prices, further research is needed, particularly into RCPD's green benefits and its competitive advantages in developing environmentally friendly products over other methods. This would need to contrast the efficacy of conventional and RCPD approaches to the creation of environmental friendly goods and services. Our research is a first step in elucidating these notions and assessing Eco-innovation relevance to sustainable packaging through green advertising. It is possible that further study may elucidate the role that RCPD tactics contribute in the performance of companies operating in developing markets. As both demand and supply circumstances play a major role in resource-constrained product creation, it is crucial to learn more about green marketing strategies that might provide consumers with the most valuable products and give businesses a competitive edge. Even though most RCPD offerings are targeted at the developing-country market. The findings also indicate that businesses should

actively solicit feedback from consumers at every stage of the creation process. Markets between businesses may benefit more from a customer-centric approach to RCPD. Providers and consumers should work towards a mutual understanding of their distinct perspectives on risk and reward sharing. A company's success with RCPD also depends on its ability to integrate its technical and commercial operations thoroughly. For more market share, they may need to try new price strategies. With regards to what constitutes eco-friendly or sustainable packaging, the initiative has established a number of guidelines, including the following: Effective, safe, and healthful for people and the development of their surrounding throughout the entire life cycle.

- Sustainable packaging plays a pivotal role in the marketing strategy including product, price, place and promotion.
- Renewably sourced materials that are produced, delivered and recycled.
- Makes the best use of recyclable or renewable resources.
- Firm's factors of production utilising best practices and eco-friendly technology.
- Is constructed with non-toxic components that last the duration of the product's life.
- To utilise and maximise energy and materials.
- Successfully recovered and used in industrial or biological closed-loop processes.

## **6.0 Conclusion**

In the beginning, marketers cared more about generating a profit for their businesses than about developing environmentally friendly infrastructure and addressing environmental issues. But, as time has passed and Mother Nature has shown her destructive potential, the organisation is under intense pressure to alter its manufacturing method to generate green items. A growing awareness of the need to take action to preserve our natural resources has resulted from the alarming acceleration of environmental problems. Marketers clever enough to play on consumers' emotions pitch the goods as "green" notwithstanding any lack of relevance to the environment. Slowly but surely, the public is catching on to the advertiser's eco-friendly methods of doing business. For this reason, promoting green goods to consumers is crucial. Green advertising helps spread awareness of environmental issues and encourages people to take action to create a more sustainable future. This article has tried to comprehend the significance of sustainable packaging by analysing the subjective dynamics of Green Advertising and how they might synergistically guide customer behaviour in a fair and equitable way. To generate profits from eco-conscious buyers and improving and innovating in packaging quality is the ultimate goal of Green Advertising. One potential advantage of developing items with limited resources is that they may be more eco-friendly. A firm's commitment to environmental sustainability may be shown by adopting RCPD. In addition, RCPD generates additional advantages not accessible via conventional product development packages. The study provides a conceptual framework to back up the subjective claims made in green packaging: a tool of green advertising for advocacy of sustainability. The environmentalists, propagandists of green consciousness, and policy influencers seeking a comprehensive approach to sustainability will find much to value in the ideas presented in this conceptual paper.



**Fig 1: Framework justifying the nexus between Eco-centrism, Eco-innovation, Biodegradable Packaging, Green Advertising & subsequent generation of Sustainability**

[Source : Author's conceptualization]

## 7.0 References

- Andersen M. M. (2010). Eco-innovation toward a taxonomy and a theory. Paper for the DRUID conference, June 18-20: Copenhagen.
- Baker, T., & Nelson, R. E. (2005). Creating something from nothing: Resource construction through entrepreneurial bricolage. *Administrative science quarterly*, 50(3), 329-366.
- Blanco, E. E., & Sheffi, Y. (2015) Eco-growth: A framework for sustainable growth, enter for transportation & logistics Massachusetts institute of technology, Cambridge, MA, U.S.A.
- Camison, C., & Villar-López, A. (2012). On how firms located in an industrial district profit from knowledge spillovers: Adoption of an organic structure and innovation capabilities. *British journal of management*, 23(3), 361-382.
- Chen, Y. S., Lai, S. B., & Wen, C. T. (2006). The influence of green innovation performance on corporate advantage in Taiwan. *Journal of business ethics*, 67, 331-339.
- Cox Mathew J. (2008) -Sustainable communication: A study of Green Advertising and audience and reception within the growing area of corporate social responsibility. ISSN 1774-2893.
- Economist (2010, April 17). First break all the rules. Special report on innovation in emerging markets.
- Furlow, N., and C. Knott (2009), "Who's Reading the Label? Millennials' Use of Environmental Product Labels," *Journal of Applied Business and Economics*, 10(3).
- Ghodeswar, Bhimrao, and Prashant Kumar. "A study of green marketing practices in Indian companies." *International Journal of Applied Management Sciences and Engineering (IJAMSE)* 1.2 (2014): 46-64.
- Guillard, V., Gaucel, S., Fornaciari, C., Angellier-Coussy, H., Buche, P., & Gontard, N. (2018). The next generation of sustainable food packaging to preserve our environment in a circular economy context. *Frontiers in nutrition*, 5, 121.
- Haytko, D.; Matulich, E. Green advertising and environmentally responsible consumer behaviors: Linkages examined. *J. Manag. Mark. Res.* 2008, 1, 2.
- Kao Tsai-Feng & Du Yi- Zhan (2019) Published by Elsevier Ltd. A study on the influence of Green Advertising design and environmental emotion on advertising effect
- Kassaye, W. W. (2001). Green dilemma. *Marketing Intelligence & Planning*, 19(6), 444-455. doi:10.1108/EUM0000000006112
- Kim, W. H., Malek, K., & Roberts, K. R. (2019). The effectiveness of green advertising in the convention industry: An application of a dual coding approach and the norm activation model. *Journal of Hospitality and Tourism Management*, 39, 185-192.
- Kriplani, Manjeet (2008). GE: Reinventing tech for the emerging world. *Business Week*, April 17. [http://www.businessweek.com/magazine/content/08\\_17/b4081068884259](http://www.businessweek.com/magazine/content/08_17/b4081068884259).
- Lin, M. J. J., & Chang, C. H. (2009, August). The positive effect of green relationship learning on green innovation performance: the mediation effect of corporate environmental ethics. In PICMET'09-2009 Portland International Conference on Management of Engineering & Technology (pp. 2341-2348). IEEE.
- Lindh, H., Williams, H., Olsson, A., & Wikström, F. (2016). Elucidating the indirect contributions of packaging to sustainable development: A terminology of packaging functions and features. *Packaging Technology and Science*, 29(4-5), 225-246.
- Mahato, M. K., Seth, S., & Yadav, P. (2022). GREEN ADVERTISING AS A PRECURSOR TO SUSTAINABLE MARKETING. *Jilin Daxue Xuebao (Gongxueban)/Journal of Jilin University (Engineering and Technology Edition)*, 41(2), 118-128. <https://DOI:10.17605/OSF.IO/QJ2KY>.



- Mahato, M. K., Seth, S., & Yadav, P. (2023). Numerical Simulation and Design of Improved Optimized Green Advertising Framework for Sustainability through Eco-Centric Computation. *International Journal of Intelligent Systems and Applications in Engineering*, 11(2s), 11-17.
- Mahato, M.K., Seth, S. (2022). *Contemporary Issues in Business Innovation Technology & Social Science*. Bharti Publications.
- Marsh, K., & Bugusu, B. (2007). Food packaging—roles, materials, and environmental issues. *Journal of food science*, 72(3), R39-R55.
- Mintel Group Ltd is a global, (2020). *Global Packaging Trends 2020* London. <https://www.mintel.com/packaging-market-news/global-packaging-trends/>
- Nguyen, A. T., Parker, L., Brennan, L., & Lockrey, S. (2020). A consumer definition of eco-friendly packaging. *Journal of Cleaner Production*, 252, 119792.
- Nordin, N., & Selke, S. (2010). Social aspect of sustainable packaging. *Packaging Technology and Science*, 23(6), 317-326.
- Prahalad, C. K., & Mashelkar, R. A. (2010). Innovation's holy grail. *Harvard Business Review*, 88(7/8), 132-141.
- Sharma, A., & Iyer, G. R. (2012). Resource-constrained product development: Implications for green marketing and green supply chains. *Industrial Marketing Management*, 41(4), 599-608.
- Sumrin, S., Gupta, S., Asaad, Y., Wang, Y., Bhattacharya, S., & Foroudi, P. (2021). Eco-innovation for environment and waste prevention. *Journal of business research*, 122, 627-639.
- Tait, P., Saunders, C., Guenther, M., Rutherford, P., & Miller, S. (2016). Exploring the impacts of food label format on consumer willingness to pay for environmental sustainability: A choice experiment approach in the United Kingdom and Japan. *International Food Research Journal*, 23(4), 1787.
- Tariq Muhammad Zubair (2014): Impact of Green Advertising and green brand awareness on satisfaction with meditating effect of buying behaviour. *Journal of Managerial Sciences* Volume No. VIII Number 2.
- Tuwanku, A. A., Rohman, F., & Rofiq, A. (2018). Does sustainable packaging matter as a business strategy? Exploring young consumers' consumption in an emerging market. *Problems and Perspectives in Management*, 16(2), 376.
- Tuwanku, A. A., Rohman, F., & Rofiq, A. (2018). Does sustainable packaging matter as a business strategy? Exploring young consumers' consumption in an emerging market. *Problems and Perspectives in Management*, Journal 16(2), 376–384. 15.
- Walmart Highlights Sustainability Efforts. Available online: <https://www.packagingdigest.com/smart-packaging/walmart-highlights-sustainability-efforts> (accessed on 30 December 2020).
- Yang, D., Lu, Y., Zhu, W., & Su, C. (2015). Going green: How different advertising appeals impact green consumption behaviour. *Journal of Business Research*, 68(12), 2663-2675.
- Young, S. (2008). Packaging and the environment: a cross-cultural perspective. *Design Management Review*, 19(4), 42-48.