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IIMS Journal of Management Science is the scholarly open access journal of the Indian Institute of Management Shillong that publishes research contributions in all areas of management and its allied discipline since 2010. It follows a double anonymised peer-review process and publishes two issues a year. While submissions from all management domains and their allied disciplines are welcome, the journal encourages articles with cross-functional managerial implications.

The journal looks for original and insightful research articles that create differential research traditions to shed new evidence on contemporary challenges faced by management practitioners, policymakers, academicians, and others. The journal envisages publishing rigorous research output backed by qualitative or quantitative methods. The articles that establish the intuition, argument, and implications using clear and concise English and improve our understanding of the management theory and practice knowledge are preferred. All contributions should be well written in English and supported by either original/empirical data or a well-justified theoretical or mathematical model.

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Aims and Scope

IIMS Journal of Management Science is an open-access journal that publishes original research and review articles from all functional areas of business management. It follows a double anonymised peer review policy.

The articles from all domains of business management, including (but not limited to): accounting, analytics, banking, communications, economics, finance, industrial relations, information systems, marketing, operations and supply chain management, organisational behaviour, organisational development, human resources management, strategy, sustainability & liberal studies, innovation, entrepreneurship, public policy, international business and corporate social responsibility are welcome.

Contributions with a rigorous analysis of economic, social, political, sustainability, and other factors relevant to management theory, practice, or policy are well received. The journal encourages authors to submit articles with cross-functional implications that provide new insights on contemporary issues faced by management practitioners, firms, societies, policymakers, academicians, and others.

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Contents

Innovating for a Sustainable Future: Bridging Ethics, Sustainability, and Consumer Engagement

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The IIMS Journal of Management Science has a long-standing tradition of publishing impactful, insightful research that bridges academic rigor and practical relevance. This issue upholds that legacy by showcasing innovative studies addressing critical challenges in contemporary business management.

The latest issue of the IIMS Journal of Management Science brings together a selection of compelling research articles that explore emerging trends in sustainable, ethical, and innovative business practices. With topics ranging from corporate social responsibility (CSR) to green entrepreneurship, the contributions in this issue collectively emphasize the importance of aligning business strategies with broader societal and environmental objectives.

The article, "Does Organic Food Consumers' Perception of Organisation CSR Matter: Evidence from Malaysia" by Tamana Anand, Jayalakshmy Ramachandran, and G.S. Batra investigates how consumers' perceptions of CSR influence their trust and purchase intentions for organic food in Malaysia. Highlighting the role of affordability, trustworthy information, and environmental commitments, the study underscores the importance of CSR initiatives that align with stakeholder health and environmental well-being. The findings call for government action to improve standards and reduce reliance on imports, fostering consumer satisfaction and trust.

"Mindful Content Marketing: Increasing Brand Awareness" by Vivek Newar and Shraddha Chetry explores the intersection of mindfulness and marketing, this study presents a conceptual model linking mindful content strategies to enhanced brand awareness. The research illustrates how mindfulness can influence brand positioning by incorporating ethical and consumer-centric approaches. It also offers actionable insights for marketers to use mindfulness in addressing consumer expectations ethically.

Arpita Ghosh, Ananya Das, and Poulomi Bhattacharya, in their article "The Importance of Sustainability Strategies in Businesses: A Research Trend Analysis" examines the integration of sustainability into Indian business operations, emphasizing economic, social, and environmental dimensions. Using bibliometric analysis, the study identifies barriers like inadequate funding and lack of green taxonomies, proposing measures to enhance public awareness and corporate practices. The research is a call to action for businesses to prioritize net-zero targets.

"Motivations to Adopt Solar Energy Systems: A Literature Review Using the TCCM Framework" by Archana Nag, Rupal Chowdhary, and Amulya Gurtu systematically reviews the adoption and diffusion of solar energy systems, focusing on small-scale installations like rooftop solar in the residential sector. Using the TCCM (Theory, Context, Characteristics, and Methodology) framework, the authors analyze 95 studies from top journals between 2000 and 2023. The research identifies key motivators and barriers to adoption, such as socio-economic factors, policy support, technological advancement, and environmental awareness. It also categorizes factors by income groups, finding commonalities among countries within similar economic strata. The study emphasizes the importance of context-specific strategies and provides a roadmap for policymakers to design inclusive and effective renewable energy policies.

K. Sethupathy, in his article, "Exploring the Factors Influencing Green Entrepreneurship Among Northeast Entrepreneurs—An Approach of Gray-DEMATEL," identifies key drivers and barriers to green entrepreneurship in India's Northeast region, employing a Gray-DEMATEL approach to understand the causal relationships between influencing factors. It highlights the importance of green manufacturing, funding innovation, and regulatory support for fostering sustainable entrepreneurial practices.

Laxmidhar Samal reviews the book, "India and the Global Financial Crisis - Managing Money and Finance" by Dr. Yaga Venugopal Reddy. This book review presents Dr. Reddy's attempt to explore India's gradual and inclusive reform strategies during the global financial crisis. The review highlights India's unique approach to integrating financial and real-sector reforms, emphasizing the importance of policy foresight in fostering resilience and sustainability in economic practices, as outlined in the book.

This collection of articles underscores the critical need for businesses to embrace sustainability, ethics, and innovation as core components of their strategies. Together, they provide a roadmap for navigating the interplay between consumer engagement, environmental responsibility, and economic growth. I hope these studies inspire meaningful dialogue and actionable insights for scholars, practitioners, and policymakers alike.

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Article

Does Organic Food Consumers' Perception of Organisation CSR Matter: Evidence from Malaysia

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Tamana Anand[1], Jayalakshmy Ramachandran[2] and G. S. Batra[3]

Abstract

This article aims to test whether organic food consumers' perception of organisations' corporate social responsibility (CSR) matters by examining the specific attributes that consumers prioritise in gauging the corporate CSR of organisations manufacturing organic food products in Malaysia. A structured Likert scale questionnaire was used to collect data from a total of 313 consumers utilising the survey method. Findings suggest that organisations should prioritise stakeholders' interest through positive health benefits of organic food products, environmental commitment, product knowledge, trustworthy information and affordable prices rather than using CSR as a growth factor to promote quality and sustainability only. The study emphasises the role of the Malaysian government in enhancing the standards of organic food production and processing, which will motivate many companies to venture into organic farming and lead towards less reliance on imports of organic food. This will build up consumer trust and satisfaction towards organic produce. Lastly, there will be an increase in

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consumer trust and satisfaction towards organic produce as demand increases after the COVID-19 pandemic. Therefore, this study is suitable for organic food manufacturers who intend to improve social image, stakeholder experience and value creation, which will help brand their products. The implications of this study are generalisable not only in Malaysia but worldwide since the world is moving towards the new normal, and precautionary measures to combat health issues are prioritised.

Keywords

Organic, food products, corporate social responsibility, human values, consumer

JEL Classification: I18, M31, M14

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Introduction

The demand for organic food products has increased exponentially. It has gained popularity due to consumer perceptions that organic food products are safe, nutritious and healthy. Consuming organic food has been marketed as a healthy alternative and free of chemicals and pesticides (Hidalgo et al., 2022; Zinoubi & Toukari, 2019). Conventionally, consumers tend to consume food that provides them self-fulfilment, regardless of the positive or negative impact on their health. However, of late, more consumers are becoming increasingly concerned about the quality of food products that are safer and healthier (Andrea, 2016; Hossain et al., 2019). It has been observed in one of the developing Asian countries, Thailand, that consumer trust is crucial for food companies to establish market credibility, especially those who manufacture and sell green and organic food (Nuttavuthisit & Thøgersen, 2017). These consumer preference traits have been observed in many Asian developing countries like Malaysia, but there is a substantial literature gap in understanding the changes happening in the organic food market. These literature and industrial gaps are discussed in this article.

According to the IBIS World industry report, consumers have adopted healthy eating options due to health concerns, seeking premium products like organic foods (Hwang & Chung, 2019). This trend is partially driven by concerns arising from modern food production-related techniques, mainly through the overuse of fertilisers and chemicals, which are currently significant causes of health concerns (Gerrard et al., 2013). Past studies have enhanced our understanding of organic food attributes in terms of health, quality, safety and environmental benefits. Consumers are also evaluating other factors, including product price, the producer's corporate social responsibility (CSR) reputation, the complexity of product information and uncertainty about environmental and social benefits, which will affect their purchase decision (Tong & Su, 2018). The conventional traits of consumers consuming organic food products, including motives, beliefs and attitudes towards organic food products, are also essential to consider (Monier et al., 2009; Zinoubi, 2021). A comparative study was conducted between developed and developing economies, such as France and Morocco, to understand the role of national institutions in the context of organisations' CSR in the food processing industry. Authors have opined that small and medium-sized enterprises in developing countries will use CSR as an economic and marketing tool to promote their organic food products globally (Baz et al., 2016). There is a need for comprehensive research to support the role of the government of developing economies like Malaysia in enhancing companies' commitment towards sustainability; hence the motivation for this research.

Consumer behaviour studies have shown that consumers' perception and subsequent behaviour towards certain products is significantly correlated with the CSR of the organisations that produce them. When consumers buy similar products with the same price and quality, the CSR could be the determining factor (Arli et al., 2014). Many researchers provided indicators for CSR assessment that must be grounded in actions concerning social issues that affect companies' operations. The marketing strategy, termed Marketing 3.0, focuses on increased attention to sustainability by drawing consumers' attention towards socially responsible organisations (Bonn et al., 2016). Socially responsible companies, therefore, are perceived to demonstrate a solid commitment to human values (Rosario González-Rodríguez et al., 2016). Peloza and Montford (2015) highlighted that consumers consider corporate-level information and food-level attributes while evaluating food products in the firms' markets. We argue that organisations providing products at affordable prices with reliable information establishing health benefits through environmentally friendly practices may be perceived to be socially responsible. Little research has been done on how consumers perceive organisations to be socially responsible, hence the motivation for this study.

This study examined whether attributes of organic food products, which have been tested and validated in prior studies, such as affordable prices, educating consumers about the product, projecting positive health benefits, knowledge, environmental concern, trust and affordable prices, influence the perception of consumers on the CSR of organisations manufacturing organic food products in Malaysia. The study was guided by the research question:

RQ: Do the attributes influence the perception of consumers on the CSR of organic food manufacturers in Malaysia?

Through a usable sample of 313 survey responses from around Kuala Lumpur (i.e., the capital city of Malaysia), we provide evidence that the factors mentioned above collectively increase consumers' trust in organic food brands, which, in turn, shapes the intentions of consumers to buy organic products. Our study has several implications, both theoretically and practically.

First, we view CSR initiatives as organisations' attempts to establish and enhance the legitimacy of their operations and practices. Consumers will only purchase organic food if they trust or possess sufficient confidence that the nature of such foods or aspects relating to their production is genuine, as claimed by organic food manufacturers. Put simply, their likely purchasing behaviour is a 'reasoned action' based on how they perceive organic food manufacturers. Many researchers have suggested that the big local organisations, as well as multinational companies, are the major players in CSR implementation in Malaysia, although budget allocations may have differed as per the company's size, policy and origin of the country (Lu & Castka, 2009).

Practically, the study is suitable for companies intending to improve social image, stakeholder experience and value creation, indirectly aiding in branding their products. Notably, during the COVID-19 and the recovery/post-recovery period, the reliance on organic food products is likely to increase. For example, it was claimed that *the demand for organic products 'doubled' recently after more Filipinos began buying goods seeking to boost health amid the spread of COVID-19 in the country* (Domingo, 2020). The study also provides insights for tightening government policies with respect to CSR and promoting organic food products in Malaysia, especially since there seems to be a lack of awareness among producers, retailers and consumers of the broader extent of organic production and processing standards in local markets (Somasundaram et al., 2016).

This article is organised as follows. The next section details the literature and the theoretical background of this study. This is followed by the formulation of the research model and the introduction of the research methods. Next, we report our findings and discussions. Finally, we conclude this article by outlining its theoretical contributions, practical implications and the future scope of research.

Literature Review

Organic food can be defined as products of farming systems that shun the use of fertilisers and pesticides (Rodriguez-Fernandez, 2016). Typically, organic products contain minimum pollutants from air, soil and water, which is good for the health and productivity of soil, plants, animals and humans (Bonn et al., 2016). Organic farming uses approximately one-third less pesticides than conventional farming at the cost of a potential loss of productivity (Willer et al., 2013), although organic food products need not necessarily be better in taste or quality. However, consumers purchase organic products because they are unique and have superior attributes compared to conventionally grown products (Bellassen et al., 2019; Willer & Lernoud, 2014). Nevertheless, the broader public still relies on conventional products due to their availability, price benefits and perceived quality (Buder et al., 2014; Hossain et al., 2019).

Global Prospect of Organic Food

According to the FiBL-IFOAM survey report (Willer et al., 2013),[1] organic farming is practised by 186 countries with ~71.5 million hectares of agricultural land managed by 2.8 million producers. The per capita consumption was €12.8, and the number of countries with organic regulation in 2018 was 87 (Willer et al., 2018). The organic food market is still in its infancy, with Malaysia importing more than 60% of its requirements (Somasundaram et al., 2016). A decade ago, the Malaysian agriculture industry highlighted that '*Malaysia has the potential to develop and tap into the massive global market for organic produce*' (Gerrard et al., 2013). However, issues concerning accreditations and trust in quality persist (Aziz et al., 2020). Statistics reveal that, unlike in many other developed and developing countries, Malaysia is yet to fully implement standards endorsed as organic by the International Federation of Organic Agriculture Movements (Willer & Lernoud , 2019).

One of the efforts of the Malaysian government along these lines includes establishing organic standards in collaboration with five other Association of South East Asian Nations (ASEAN) countries, namely Indonesia, Cambodia, the Philippines, Vietnam and Thailand.[2] The standards aim to improve supply chain management while reducing production costs. The Ministry of Agriculture and Food Industries also introduced the Malaysian Organic Certification Scheme (myORGANIC) to recognise farms that practice organic farming based on Malaysian Standard MS 1529:2001, providing guidelines on packaging, processing, labelling and marketing organic food products.[3] The 191 farms are spread over 1,848 hectares of land with a total production of 65,591 tonnes, estimated at RM175 million. These statistics indicate the seriousness with which Malaysia is pursuing organic farming and marketing.

CSR and Organic Food

Nguyen et al. (2019) explained the importance of consumers' CSR perception, which influences their buying intentions. 'CSR is a management concept whereby companies integrate social and environmental concerns into their business operations and stakeholder interactions'.[4] Andrea (2016) explains that the meaning of social responsibility is vast, ranging from being 'legally and ethically responsible' to being merely 'charitable' or 'legitimate'. Simone and Hervé (2013) asserted that when firms pursue CSR activities that support the stakeholders' interest rather than merely using CSR as a growth factor, there can be a market for quality and sustainability. CSR is a dynamic concept that incorporates strategies and specific contextual factors influencing organisational behaviour (Andrea, 2016). CSR is in the interest of businesses and all stakeholders, such as employees, consumers and governments, demand and value the respective efforts (Gerrard et al., 2013). These practices have become popular among governments from various countries with stringent social and environmental regulations (Arli et al., 2014). Thus, the government has a significant role in spearheading CSR practices in their countries. This is particularly important for businesses and institutions dependent on the government's aspirations and vision concerning social and environmental issues. Researchers claim that CSR is an essential determinant in consumers' food purchasing (Hartmann et al., 2013). Consumers in developed countries are willing to pay premiums for social and environmental responsibility, as demonstrated by companies selling organic food (Bellassen et al., 2019; Loose & Remaud, 2013), mainly due to its positive impact on creating trust. It is also essential to differentiate CSR messages among consumer groups for firms' branding strategy (Mueller, 2014).

Therefore, we posit that organic food attributes perceived as necessary by consumers, if considered by companies with reasonable accountability and seriousness, can positively influence consumers' perception of the organisation's CSR initiatives and help improve the marketability and branding of the products. Othman et al.'s (2019) research shows that Malaysian companies actively involved in CSR initiatives have experienced increased financial performance and long-term sustainability. This indicates that companies should integrate CSR into their strategic planning to sustain themselves in the market or industries for a long time. These companies believe in disclosing social information and desire to comply with government social policy, thus helping build a corporate image. This can also be a powerful promotional tool as businesses can communicate with their customers about reconstructing society and enhancing positive perception in the eyes of the public (Nasir et al., 2015).

Theoretical Underpinnings

Firms undertake CSR initiatives to enhance the legitimacy of their operations. Suchman (1995) described legitimacy as a generalised perception that the actions of an entity are desirable, proper or appropriate with the norms, values and/or beliefs of the society in which it operates. When society is broken down into its major constituents, the legitimacy theory predicts that firms would place great importance on addressing the concerns of the most influential stakeholder groups (Campbell, 2000). Such an emphasis is highly complementary to that of the stakeholder perspective/theory (Donaldson & Preston, 1995). Devinney et al. (2006) highlighted that companies seeking to benefit from their purported social credentials often score only a pyrrhic victory, as consumers do not always pull their weight in ethical consumption. Put simply, while consumers expect companies to offer products that are produced in a socially responsible manner (Mohr et al., 2001), most do not exhibit a clear preference for products produced by 'ethical' companies (Oberseder et al., 2011). For instance, Young et al. (2009) found that 30% of consumers who claim they are very concerned about environmental issues struggle to translate this into purchases. In this context, recent studies found that managers' motivation to pursue CSR activities sincerely is triggered by organisational drivers and companies' willingness to change. Organisational drivers are internal factors such as altruism, legitimacy and competitiveness, while drivers of change comprise external factors such as economic responsibilities and profitability. These changes in company policies will lead to businesses' responsibility towards society for a bright future (Nasir et al., 2015).

Proactive initiatives such as detailed labelling would help consumers concentrate their limited efforts on considering firms' CSR initiatives, leading to improvements in consumer beliefs, attitudes and intentions (Cicia et al., 2010). However, consumer attitudes and purchase intentions are influenced by CSR initiatives only if the consumers are aware of them (Pomering & Dolnicar, 2009). This study is also informed by the theory of reasoned action (TRA), where consumers' purchasing behaviour is primarily determined by individual motivational factors, especially behavioural intention and perception. These TRA constructs are empirically excellent predictors of many behaviours (Montano & Kasprzyk, 2008).

The following section of this article scrutinises specific CSR-related attributes of organic products likely to influence consumers' purchasing behaviour significantly. Each attribute is considered 'high-fit', as each is inextricably tied to the nature of organic products. Consumers' evaluation of CSR initiatives is complex yet structured, during which consumers consider many initiatives (Oberseder et al., 2011). Such an understanding would improve firms' marketing strategies in the hopes that consumers *'would stick to their side of the bargain'* when it comes to making actual CSR-informed purchases (Thøgersen et al., 2015).

Health Benefits

Consumers rank health and food safety as the primary quality in determining organic agriculture's private or personal benefits (Loebnitz & Aschemann-Witzel, 2016). Studies focussed on health benefits as one of the critical attributes of organic food consumption (Curvelo et al., 2019). Health-conscious consumers prefer to remain well-informed about their products and strive to keep healthy by consuming high-quality food (Newson et al., 2015). Thus, health considerations are one of the primary reasons why consumers purchase organic food (Moise et al., 2019). The nutritional value of organic food positively impacted consumers' attitudes towards organic food, per Liang (2016). However, whether organic food manufacturers can ensure that the organic products they manufacture can provide the perceived health benefits should hypothetically depend upon their commitment to CSR instead of intentions to earn higher profits through premium pricing (Nasir & Karakaya, 2014). Many discussions about organic food products question whether they truly offer the claimed health benefits (Rizzo et al., 2020). We believe that consumers see companies as socially responsible when they can effectively promote and distribute high-quality organic products that offer enhanced health benefits.

H_1: Health benefits demonstrated by the company can have a positive influence on consumers' perception of manufacturers' CSR.

Knowledge of Organic Products

Informed consumers hold a positive attitude towards organic products because they understand production and processing practices (Hsu et al., 2019). Consumer knowledge is shaped by the information they receive, including labelling, certifications and advertisements. Modern consumers prefer to buy organic products due to the eco-friendly production process and sustainable farming methods. Parameters related to food safety, such as reduced use of chemical fertilisers and minimal usage of artificial preservatives and additives without harming the environment, contribute to a positive attitude among customers towards organic produce (Hidalgo et al., 2022; Rizzo et al., 2020).

Objective knowledge can be acquired through individual preferences (Ajzen et al., 2011), while subjective knowledge pertains to an individual's perception of their image of a specific topic (Bonn et al., 2016). This influences the attitudes and behaviour of individuals when choosing organic products. In developed countries, knowledge of organic food products has been observed to have both positive and negative effects on consumer choices (Shamsollahi, 2013). We hypothesise that:

H_2: Providing more knowledge and awareness of organic products will positively influence the consumers' perception of manufacturers' CSR.

Environmental Concerns

Attitude towards consuming organic food is crucial in predicting an individual's choice of food products (Zinoubi & Toukabri, 2019). Studies on attitudes towards organic food consumption have found influences from external factors such as the environment, trust and cost (Aziz et al., 2020), with environmental concern being a major influence (Rodriguez-Fernandez, 2016). Consumers recognise that organic foods are produced in a way that minimises negative impacts on the environment and can reduce water and soil contamination by avoiding chemical pesticides (Bonn et al., 2016). According to Somasundram et al. (2016), there is a clear connection between consumer concern about the environment and their behaviour towards organic food products. Hence, environmentally aware consumers are likely to make eco-friendly purchases. European customers value green products and are willing to pay for their environmentally friendly features due to their environmental concerns. Research has also shown that environmentally friendly products and processes indicate socially responsible organisations. Enterprises prioritising environmental impacts and taking timely precautions to preserve the environment (Żelazna et al., 2020) are considered socially responsible and can enhance their product branding through word of mouth, which is prevalent in developed countries (Moise et al., 2019). We therefore hypothesise that:

H_3: Addressing environmental concerns positively influences the consumers' perception of manufacturers' CSR.

Trust in Organic Products

Consumers need to feel secure when purchasing organic products at a premium price, and they seek more information disclosure about these products (Curvelo et al., 2019). Studies have highlighted that distrust of organic food labelling and claims poses a significant barrier to purchasing organic food products (Shamsollahi, 2013). Research also suggests that consumers tend to trust branded organic products with certified labels, indicating that retailers are socially responsible (Rodriguez-Fernandez, 2016). In the case of Egyptian organic products, the absence of state certification through appropriate labels has led to a lack of trust (Willer & Lernoud, 2014). A similar situation exists for Danish organic products, where systematic trust is based on labelling and control schemes supplemented by personal trust (Thorsøe, 2014). Studies have indicated that the perceived value of trust for the success of organic products has not been fully satisfied (Rittenhofer & Povlsen, 2015). Research on online marketing reveals that trust in sponsored links is lower than in organic links unless vendors' information is reliably disclosed. However, this reduction in trust is not enough to negate the overall effect (Ma et al., 2013).

Various aspects of CSR, including product liability, organic labelling, packaging information and honest labelling of the country of origin, play crucial roles in gaining customer trust and cultivating a stronger pro-social image (Simone & Hervé, 2013). In today's competitive world, a unique selling proposition (USP) for organic products can be achieved by accurately presenting all the facts, such as sourcing, country details and nutritional facts. These communication strategies contribute to a positive positioning in customers' minds, fostering loyalty and sustained profitability (Tong & Su, 2018). Żelazna et al. (2020) reported that uncertainty and lack of trust could have a negative impact on consumer perception and attitude. Certified labels are the most essential tool for enhancing corporate transparency. Labels are hybrid instruments because they provide informational features for consumers and economic or marketing incentives for companies. Hence, government policies and regulations are required to enforce and encourage CSR initiatives from businesses, placing importance on labelling (Arli et al., 2014).

H_4: Providing trustworthy information about the product positively influences the perception of manufacturers' CSR.

Price

Price has consistently been one of the most critical factors influencing the purchase of organic products. Previous studies indicate that consumers perceive organic food as more expensive than non-organic alternatives (Simone & Hervé, 2013). While consumers belonging to the middle and upper class generally show optimism towards the premium prices of organic products due to their perceived value (Curvelo et al., 2019; Monier et al., 2009), price remains a significant barrier affecting consumer behaviour towards organics (Guliyeva & Lis, 2020). Research also suggests that individuals face a trade-off between choosing organic food and saving money or buying luxury goods (Zinoubi, 2021). Thus, price is considered a double-edged sword, acting as a barrier while also influencing consumer opinions by associating high prices with high quality (Żelazna et al., 2020). While consumers may be willing to pay a premium for the benefits of organic products, the premium cost still hinders purchase decisions (Sriwaranun et al., 2015). On the contrary, Narine et al. (2015) documented that consumers are willing to pay premium prices for selected organic products based on income levels and per capita income (Muhammad et al., 2015).

Producers and companies are prioritising marketing communications for price-sensitive consumers, highlighting the benefits of organic products compared to traditional farm produce. Efforts have been made to justify higher prices for organic produce by emphasising quality, freshness, food safety, taste and reliable sources. Regional labels have been supported as a solution to control the higher cost of organic products through shorter distribution channels. Therefore, while there are diverse perspectives on the relationship between price and the choice of organic products, we argue that socially responsible organisations are more likely to consider the cost–benefit for consumers, especially when targeting the middle-income group.

H_5: Affordable price positively influences the consumers' perception of the manufacturers' CSR.

The abovementioned hypotheses have led to the development of the theoretical framework depicted in Figure 1. As this is a foundational study, we avoid exploring interrelationships among variables; instead, we focus on testing the direct linear relationships between the independent and dependent variables.

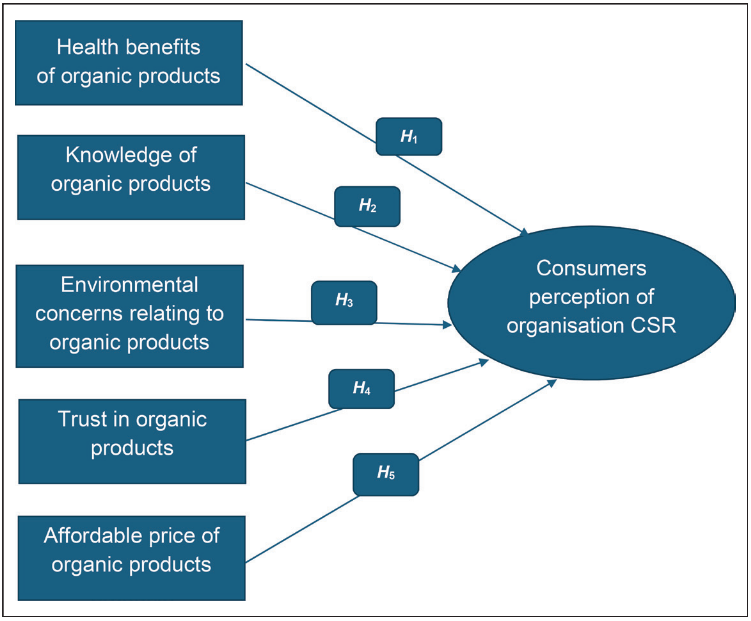

Figure 1. Theoretical Framework.

Note: CSR: Corporate social responsibility.

Table 1. Choice of Variables and Past Studies References.

Variables	Past Studies
Health benefits	Curvelo et al. (2019), Moise et al. (2019), Rizzo et al. (2020) and Liang (2016)
Knowledge	Hsu et al. (2019), Hidalgo et al. (2022), Rizzo et al. (2020) and Bonn et al. (2016)
Environmental concerns	Zinoubi and Toukabri (2019), Aziz et al. (2020), Żelazna et al. (2020) and Moise et al. (2019)
Trust	Curvelo et al. (2019), Tong and Su (2018), Rodriguez-Fernandez (2016) and Willer and Lernoud (2014)
Price	Zinoubi (2021), Guliyeva and Lis (2020), Zinoubi and Toukabri (2019) and Sriwaranun et al. (2015)
Consumer perception	Nguyen et al. (2019), Andrea (2016), Bellassen et al. (2019) and Loose and Remaud (2013)

Research Framework and Methodology

Data Collection and Sample

Data were collected using a questionnaire adapted from a previous study. Table 1 provides details of past studies upon which the questionnaire was based. The six variables were derived from various studies (Table 1).

Using a purposive sampling technique, self-administered questionnaires were distributed at supermarkets and minimarkets in the Klang Valley, including a screening question to identify consumers who purchase organic food products. Purposive sampling is a non-probability technique where participants are selected based on researchers' judgement to ensure they can provide valuable inputs to achieve the study objectives. Since participants needed to be users of organic food products and willing to complete the survey in supermarkets and minimarkets, purposive sampling was deemed the most appropriate approach. A total of 370 questionnaires were distributed, resulting in a response rate of 84%, and 313 questionnaires were deemed usable.

Respondents' Profile

The respondents were diverse in gender, age, education level, occupation, income and family size. The demographic details are presented in Table 1. The survey included 156 females (49.8%) and 157 males (50.2%), ensuring an unbiased gender representation. In terms of age, 43.8% of respondents were in the 20–29 age category, 26.2% in the 30–39 category, 17.2% in the 40–49 category and the remaining in the 'more than 50 years' category. Employment-wise, 58.8% were employed, 19.5% were self-employed, 13.1% were homemakers and 8.6% were either waiting for a job or students undergoing internship training. Educational qualifications varied, with 56.5% holding a degree, 7% having a diploma, 29.8% having postgraduate qualifications and the rest being professionals. Regarding family size, 65% had 4–6 members. Regarding monthly income, 63.1% fell

Table 2. Demographic Statistics.

Demographics	Category	Total Respondents (N = 313) (100%)
Gender	Male	157 (50.2%)
	Female	156 (49.8%)
Age	20–29	137 (43.8%)
	30–39	82 (26.2%)
	40–49	54 (17.2%)
	Above 50	40 (12.8%)
Occupation	Employed	184 (58.8%)
	Self employed	61 (19.5%)
	Housewife	41 (13.1%)
	Other (e.g., student, completed studies and waiting for a job)	27 (8.6%)
Education	Diploma or equivalent	22 (7%)
	Degree	177 (56.5%)
	Postgraduate	93 (29.8%)
	Professional	21 (6.7%)
Income level per month	<RM 2,500	56 (17.9%)
	RM 2,500–RM 12,000	198 (63.1%)
	>RM 12,000	59 (19%)
Family size	1–3	91 (29.1%)
	4–6	203 (64.9%)
	More than 6	19 (6%)

between MYR 2,500 and MYR 12,000, with almost equal numbers above MYR 12,000 and below MYR 2,500.

Initial Analysis

The questionnaire, comprising 35 items, was divided into six factors derived from past literature and perception studies. The factors included health benefits, knowledge, environmental concerns, trust, price and CSR. Each factor, except CSR, had six items, while CSR had five (refer to Table 2). The reliability of the factors was confirmed by Cronbach's alpha, with all factors scoring above 0.7, indicating suitability for further analysis. Skewness and kurtosis tests were within permissible limits. The Kaise–Meyer–Olkin (KMO) measure (0.833) indicated that the overall data were suitable for further testing. Observing Table 2, the mean scores were highest for price, followed by health benefits and environment, while trust and knowledge had relatively lower mean scores.

Correlation Analysis

Table 3 presents the correlation statistics, revealing that four out of the five attributes were correlated at the 1% significance level. Only the correlation involving price was observed at the 5% significance level.

Table 3. Descriptive Analysis.

Variable	Mean	Standard Deviation	Cronbach's Alpha
Health benefit	4.20	0.508	0.819
Knowledge	3.75	0.577	0.814
Environment	4.08	0.583	0.802
Trust	3.90	0.566	0.817
Price	4.23	0.508	0.756
Perception of organisation CSR	3.83	0.777	0.787

Note: CSR: Corporate social responsibility.

Cronbach's alpha is a coefficient of consistency that assesses the internal consistency or reliability of a set of variables measuring a single dimension. A Cronbach's alpha greater than 0.7 is generally recommended for better reliability in measurement (Hair et al., 1998; Nunnally & Bernstein, 1995).

Multiple Regression

Multiple regression analysis is employed to investigate the association and establish a predictor equation between the consumer perception of organisation CSR (dependent variable) and a store's health benefits, knowledge, environment, trust, price and product attributes (independent variables). As a result, three hypotheses need to be tested, and the statistical equation corresponding to this model is formulated for further analysis:

$$Y = \beta X_1 + \beta X_2 + \beta X_3 + \beta X_4 + \beta X_5 + \varepsilon$$

Findings

The following regression equation was developed based on the theoretical studies.

Discussion

The figures in Tables 4, 5 and 6 reveal that all the hypotheses are supported. It can be observed that consumers' perception of the manufacturer's CSR is positively influenced by (a) detailing essential health benefits of consuming organic food, (b) building trust in the information provided, (c) environmental concerns tacked by manufacturers and (d) providing adequate knowledge of the products that they market. It is surprising that the price of the product, although significant, is not the most essential criterion set by consumers. This implies that consumers do not perceive premium prices for organic products as an indicator of compromised CSR. However, consumers do not place higher importance to price when judging organisational CSR.

Table 4. Correlation Between the Independent Variable and Perception of Organisation Corporate Social Responsibility (CSR).

	Health Benefit	Knowledge	Environment	Trust	Price	Perception of Organisation CSR
Health benefit	1					
Knowledge	0.233**	1				
Environment	0.439**	0.424**	1			
Trust	0.328**	0.363**	0.262**	1		
Price	0.329**	0.177*	0.403**	0.316**	1	
Perception of organisation CSR	0.238**	0.265**	0.321**	0.275**	0.180*	1

Notes: *Correlation is significant at the 0.05 level (2-tailed).
**Correlation is significant at the 0.01 level (2-tailed).
Based on the literature review and hypotheses, the theoretical framework was developed, as shown in Figure 1.

Table 5. Model Summary.

Model	*R*	*R* Square	Adjusted *R* Square	Std Error of the Estimate
1	0.742	0.551	0.541	0.67770347

Table 6. Coefficients.[a]

Model	Unstandardised Coefficients		Standardised Coefficients	*t*	Sig.
(Constant)	1.004E–013	0.045		0.000	1.000
Health benefit	0.458	0.045	0.458	10.072	0.000
Knowledge	0.266	0.045	0.266	5.849	0.000
Environment	0.335	0.045	0.335	7.373	0.000
Trust	0.381	0.045	0.381	8.380	0.000
Price	0.112	0.045	0.112	2.473	0.014

Notes: [a]Dependent variable: Perception of organisation corporate social responsibility (CSR).
$Y = 0.458X_1 + 0.266X_2 + 0.335X_3 + 0.381X_4 + 0.112X_5 + \varepsilon$
CSR: Consumers' perception of organisation CSR.
H: Health benefits of organic products.
K: Knowledge of organic products.
E: Environmental concerns relating to organic products.
T: Trust in organic products.
P: Price affordability.

We hypothesised that health benefits demonstrated by the company can positively influence consumers' perception of manufacturers' CSR. This implied that organisations indicating the health benefits of their products transparently are likely to gain higher visibility and are perceived to portray a better CSR.

Our research finding supports this hypothesis, which is also the highest contributor (β = 0.458). Socially responsible manufacturers will indicate the real health benefits of their products, as iterated by Nasir and Karakaya (2014). However, many manufacturers hype the health benefits of organic food products to charge a premium price (Rizzo et al., 2020). Consumers also look for good returns as 'value for money' is a critical parameter after purchasing premium-priced organic and green food (Johnston, 2008). Our study emphasises that the appropriate health benefits can influence consumers' perception of CSR, which will influence the consumers' buying intention. Our studies thereby support some of the recent findings in this area.

Next, we hypothesised that the perception of manufacturer CSR is influenced by the information disseminated by the manufacturers (knowledge). This was supported, although compared to other variables, knowledge had a lower coefficient (β = 0.266) despite the fact that the price was the lowest. The implication is that consumers prioritise the knowledge they gain about the product through the information provided in the product. Researchers determined that the social responsibility of organic food importers includes labelling, certification and codes of conduct (George, 2015). Consumers will emphasise proper labelling regarding calorie content and other health benefits (Johnston, 2008). While these are important for imported goods, they are also crucial for farmed products and manufacturers, which has not been studied. This study closed that gap. This is a concern in Malaysia, since the knowledge and awareness among Malaysian producers, retailers and consumers are lacking (Somasundaram et al., 2016). While our study supports many past studies, we contrasted the opinion of (Hassan et al., 2015), who claim that Malaysians are not too keen on the knowledge of organic food products.

Third, we hypothesise that environmental concerns impact consumers' perception of manufacturers' CSR. Our research supports this hypothesis, which is currently a global issue and not merely regional. Global environmental concerns include climatic conditions, land procurement and green labels (Guliyeva & Lis, 2020). Land issues and environmental attitudes are the key concerns in the growth of the Malaysian organic sector (Haris et al., 2018). Johnston (2008) suggested that modern-era consumers are well-educated and aware of global issues around organic and green food products, such as environmental impact and health benefits. They have shown ethical behaviour by choosing the right product at the right price from the right place; consumers spend their time selecting ethical companies in the food industry. While the concerns are highlighted, how they impact the consumers' perception of manufacturers' CSR remains underexplored. Our research conveys a clear message that consumers prioritise environmental concerns in gauging the manufacturers' CSR. This could likely influence the branding of the locally manufactured products, which justifies why Malaysian consumers prefer imported organic products to locally manufactured ones (Somasundaram et al., 2016). The findings are also consistent with past studies, which show that environmental concerns are crucial in influencing consumers' choice of organic products (Nasir & Karakaya, 2014). This is not surprising as organic food production is often regarded as low risk in terms of water or ground pollution. Such environmental considerations are also the characteristic of socially responsible organisations. Manufacturers of organic products must, therefore, demonstrate the use of environmentally friendly processes.

We also hypothesise that trust in the products will impact consumers' perception of manufacturers' CSR. The second-highest coefficient supported this compared to knowledge (β = 0.381). Security when using any product, specifically food or skin-related, is essential for humans to remain healthy. One of the key CSR activities of any organisation is to develop trust in the consumers. This is true for organic food consumers (Nguyen et al., 2019). Moreover, some authors opined that small and medium-sized enterprises in developing countries will use CSR as an economic and marketing tool to promote their organic food products in the global space (Baz et al., 2016). Researchers also claim that a lack of trust in control systems and the authenticity of the fool sold can negatively impact consumers' buying intentions (Nuttavuthist & Thogersen, 2017). In China, trust in food manufacturers was vital in establishing overall trust in organic food products (Ayyub et al., 2018). It has been observed in Thailand, a developing country, that consumer trust is the critical factor for food companies to establish market credibility, especially those who manufacture and sell green and organic food (Nuttavuthisit & Thøgersen, 2017). We have yet to establish the manufacturers' trust through transparent information in Malaysia. Our findings make it apparent that effective dissemination of detailed information on (a) the nature of organic food and its health benefits and (b) how organic food firms address environmental concerns positively influences consumer perception of organisational CSR. Furthermore, their perception is also shaped by their trust in the information provided.

Finally, the touted benefits of organic products would positively influence the attitude of consumers, which would induce them to pay a premium. Premium price is a matter of concern for many Malaysians (Somasundaram et al., 2016). Furthermore, Peloza et al. (2015) highlighted that consumers use corporate-level information and food-level attributes as essential factors to consider while evaluating food products marketed by the firms. Therefore, we posit that socially responsible organisations would aim to provide quality at affordable prices instead of overly focusing on profit maximisation. Indeed, we found affordable pricing to be a significant factor. However, Malaysian consumers give the least priority to the price of products, indicating that Malaysians do understand that organic food products will warrant higher prices compared to non-organic food products, which they might be willing to pay. However, manufacturers who claim very high premiums with profit intentions and without demonstrating value additions will have trouble branding through CSR.

Conclusion and Implications

The primary aim of this study is to investigate whether specific attributes influence the CSR perception of manufacturers producing organic food products. Through multiple regression analysis, it is noteworthy that all five attributes studied significantly relate to how consumers perceive the CSR of organic food manufacturers.

First, the findings indicate that increasing consumers' knowledge, awareness of health benefits and trust in organic food products influence their intentions to buy such products and shapes their perception of the manufacturer's CSR. Second, when consumers perceive that the manufacturer is environmentally conscious, they are more likely to have a positive view of an eco-friendly manufacturer. Third, despite being price-conscious, consumers are willing to pay a premium for organic food products, contributing to a positive perception of the manufacturer's CSR. These findings align with the idea that consumers' purchasing actions are reasonable, involving a careful evaluation of organisational CSR.

The practical implications of this study are twofold. First, it is crucial for manufacturers seeking to enhance their social image, stakeholder experience and value creation—essential elements for branding and rebranding their products. Despite price increases, more consumers are expected to turn towards organic products during the COVID-19 pandemic, provided they are convinced of the legitimacy of these products. Second, CSR initiatives aim to establish and enhance the legitimacy of organisational operations and practices. Consumers will only purchase organic food if they trust that the nature of the food or the production process is genuine, as the manufacturers claim.

Few studies have explored the relationship between organic product attributes and the perception of organisational CSR. As a developing nation aspiring to make its mark in international markets, Malaysia holds vast potential for manufacturing and marketing organic food products. Therefore, the study's third practical implication underscores the need for highly informative labels on organic foods. Encouraging adherence to standards set by the International Federation of Organic Agriculture Movements and obtaining endorsements and certifications from relevant authorities can enhance the perceived reliability and trustworthiness of information. Additionally, organic food firms must be responsive to consumers' concerns and contribute to social welfare, aligning with the increasing consumer interest in health and well-being.

Lastly, the study's results can be extended to other major cities in Malaysia, such as Penang, Putrajaya and Ipoh, providing insights into how consumer behaviour varies across different regions compared to Kuala Lumpur, the capital. The study also serves as a valuable reference for future research in different countries. Based in Kuala Lumpur, Malaysia's capital and one of Asia's known economic hubs, the findings provide insights into the operations of many international companies and the city's cosmopolitan nature. Multinational companies can use these insights to undertake CSR-related initiatives, contributing to the sustainability of the organisation and the marketability of their products globally.

Limitations and Future Research

This study acknowledges certain limitations. Convenience sampling may restrict the generalisability of the findings, and future researchers are encouraged to employ a broader and more representative probability sample. The limited sample size, particularly from Kuala Lumpur, poses a challenge in generalising the study's outcomes. Additionally, the inclusion of in-depth qualitative analysis methods and diverse stakeholder perspectives could have further enriched the research findings. While the empirical findings contribute valuable insights into organic food products and manufacturers' CSR, future studies should aim for a more extensive and regionally diverse sample covering all regions in Malaysia. Exploring different methodologies could allow a deeper understanding of the interrelationships between independent variables or the potential interaction effects of dummy variables such as gender and income levels. Qualitative methods can be employed to delve more profoundly into consumers' perceptions and manufacturers' perspectives on the organic food market. This multifaceted approach would enhance the comprehensiveness and depth of future research in this domain.

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Notes

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Article

Mindful Content Marketing, Increasing Brand-Awareness: Theoretical Study & Literature Synthesis

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Abstract

This paper deals with the application of the mindfulness theories into the content marketing approach to make the branding success. One of them is a conceptual model that can be defined as, mindfulness is the intervening variable between content marketing and brand awareness enhancement. The paper took into account the already written books and journals, which have already been discussed about awareness, consciousness, and mindfulness and tried to study how mind-based communication can affect people's perception of brand communication. It fills the gap in existing literature by it being a way of discussing the direct connection between mindful content marketing and enhanced brand awareness. The results have shown that mindful content marketing is indispensable in order to guarantee the right brand positioning and it also improves the effect of the brand communication purpose. The presented study introduces a fresh approach in the content marketing industry as it uses mindfulness to design consumer reactions and thereby, to get better links with the brands.

Keywords

Mindfulness, brand awareness, content marketing consciousness

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Introduction

The landscape of digital marketing is constantly changing, with methods that prioritize consumer-focused approaches over more conscious, potentially unethical, approaches that disregard ethical ramifications. These oversights can significantly reduce overall brand awareness and damage brand loyalty. The controversy surrounding Patanjali Ayurved's marketing of Coronil for treatment of COVID-19 is a burning example of mindless marketing. Despite lacking regulatory clearance, Patanjali spread misinformation and took advantage of public fear during the pandemic, due to which it faced a huge backlash and was forced to reposition the product as an immunity booster instead of a cure. The moral and legal difficulties of marketing health care during times of crisis are brought to light by this case (Mukherjee, 2021). The use of deceptive marketing tactics by Bournvita in the context of kid-friendly health drinks is another example. The lack of vital nutrients in Bournvita is concealed by the large disparity between the nutritional content of the product and its marketing promises of nutritional advantages. Due to the widespread criticism it received for providing false information on nutrients, the brand's loyalty and reputation suffered (Kulkarni & Pathak, 2024).

Furthermore, there is a significant difference in the way developed and developing countries use mindful marketing strategies. This difference frequently leads to firms missing out on opportunities that may be achieved by adopting more consumer-focused and ethically aligned techniques. In order to maintain and improve brand awareness and loyalty, this study aims to investigate the benefits of implementing mindful marketing strategies, especially in areas where consumers are more likely to value material that upholds moral and ethical standards. By bridging the current knowledge gap, the study intends to show how conscientious content marketing may successfully meet and exceed consumer expectations while upholding and encouraging more moral standards in marketing. Establishing enduring brand partnerships is imperative when customers are becoming more discerning about the credibility of the companies they endorse.

This research is intended to study the use of mindfulness concepts in the development of content marketing methods in order to enhance the effectiveness of branding. The research is designed to investigate the connection between mindfulness and content marketing, to study the role of mindfulness principles in content marketing and brand awareness, and to give an example of the use of the mindful practices in business and marketing.

Methodology

The review conducted in this study covers the research and developments in this field over the previous 20 years. The current research on the subject reviews the available literature on the study of mindfulness in content marketing and its influence on brand awareness and consumer engagement. The choice of learning materials was based on their relevance and the impact they had on the theoretical and empirical understanding of the effective content marketing strategies that include the feature of mindfulness.

Data Collection

Out of a huge number of materials for this study, the ones that have been collected were chosen through a very thorough search process from a number of highly respected databases. The main databases that are employed are Scopus, UGC Care List, and Thomson Reuters. Besides, the searches were carried out by hand using Google Scholar to guarantee a wide and complete array of sources. Research papers indexed in these databases which were published in the timeframe of 2000 to 2024 were studied thoroughly for this review. The technique was created to catch the pioneering studies and the recent progress in the field to present a comprehensive picture of the current state of the knowledge.

Selection Criteria

The criteria for the selection were the ones which focused on finding the studies which were about the integration of content marketing with the mindfulness principles and the real-world applications in the marketing contexts. The purpose was to pick articles that give both strong theoretical background and solid empirical evidence to support the analysis.

1. *Relevance to Mindfulness and Content Marketing*: The studies that were chosen were those that had directly investigated the issue of mindfulness as a principal element in the marketing strategy that is covered in content marketing. This research also covers the study of how mindfulness can be used to increase the customer's engagement and brand awareness.
2. *Empirical Evidence*: The study favored the empirical ones that give both quantitative and qualitative data confirming the effectiveness of mindful content marketing. This is about the methods such as surveys, experiments, and case studies that present to consumers their behavior and the perception of the brand and at the same time the results are measurable.
3. *Theoretical Foundations*: The papers that proved to be the important theoretical basis for the integration of mindfulness in marketing were chosen to be the first ones to be considered. The fact is that the projects that are considered for mindful marketing are those that are based on psychological theories of mindfulness, such as those proposed by Kabat-Zinn (2003) and Bahl et al. (2016) and then they are applied to marketing practices. These theories are selected on the basis of their role in exploring the strategic application of marketing to improve the brand perception and consumer behavior toward the product. These theories can be directly applied in marketing techniques for enhancement of the brand awareness.

Data Analysis

After the papers of the actual topic were chosen, a thorough investigation was carried out to identify the main findings and insights. The analysis involved:

1. *Identifying Common Themes*: In the research, the main themes about the mindfulness and content marketing were found in all the papers. This also covers the idea of comprehending how mindfulness affects consumer's perception, involvement, and loyalty.
2. *Synthesizing Results*: Many studies' results were combined to form a complete picture of the current knowledge of mindful content marketing. This combination of the works paves the way for the identification of the areas that are still undeveloped in the literature and the areas of the future research.
3. *Quality Assurance*: The study followed the procedures of academic research to the maximum to support the quality and reliability of the findings. This includes the following:
4. *Peer-Reviewed Sources*: The only sources used for the research were peer-reviewed articles which made the credibility and validity of the research findings that much more.

The first step of the methodological approach of this study was the thorough review of the existing literature which helped in the understanding of the integration of mindfulness in content marketing. Through the emphasis on the empirical evidence, theoretical basis, and practical applications of this study, the authors have accomplished a thorough analysis of the effects of mindfulness on brand awareness and consumer engagement. The findings from this investigation are the basis for the guidance given to marketers who are in the process of mindfulness content marketing. It shows the possibility of the increased loyalty of the customers and the brand's success.

Mindfulness

Mindfulness, derived from the Pali word "sati" meaning "to remember," is a state of being fully present and aware, involving conscious thinking, information gathering, and world perception formation. According to Langer et al. (1989) and Ndubisi (2014), this idea implies that cognitive processes and perspective adjustment are crucial for individuals and organizations to adapt and perform reliably in dynamic environments, underscoring the importance of adaptability and awareness. Mindful marketing is a customer-centric strategy that integrates mindfulness into marketing strategies, aiming to improve social responsibility, environmental concerns, consumer well-being, and societal well-being while achieving business profits and stakeholder benefits. Mindfulness is defined as the awareness that arises purposefully, in the present moment, and being nonjudgmental on how experience is unfolding moment by moment (Kabat-Zinn, 2003). It is defined as the mental ability to be fully present at this moment in a state of nonjudgmental and nonconceptual awareness (Bahl et al., 2013). Mindfulness mainly serves the goal of assisting individuals to maintain their state of awareness for as long as possible (Bahl et al., 2013) by being aware and attentive to everything that they are going through.

Mindful Marketing Strategy

Hagenbuch and Mgrdichian (2020) utilized a 2 × 2 mindful matrix as shown in Figure 1. The researchers' approach to determining the 2 × 2 matrix for marketing strategies, known as "mindful marketing," assesses the marketing strategies' efficaciousness and ethical qualities (Hagenbuch & Mgrdichian, 2020).

The matrix categorizes strategies into the following four types:

1. *Single-Minded*: The minor portals were indeed effective but not ethical.

   Description: The techniques used to reach the marketing objectives are effective but they do not have any ethical considerations and usually resort to using manipulative strategies or falsified information.

   Implications: Although they are quick, they can ruin the brand's reputation and the consumers' trust.

2. *Simple-Minded*: Although it is morally right, it is ineffective for improving public transport.

   Description: These strategies uphold the principles of ethics and social responsibility but they do not lead to noteworthy marketing results.

   Implications: They are ethical but fail to engage the consumers and the sales either do not go up or go up very slowly.

3. *Mindless*: Not a valid nor ethical statement.

   Description: These tactics are not helpful for the achievement of business goals and they are void of ethical problems.

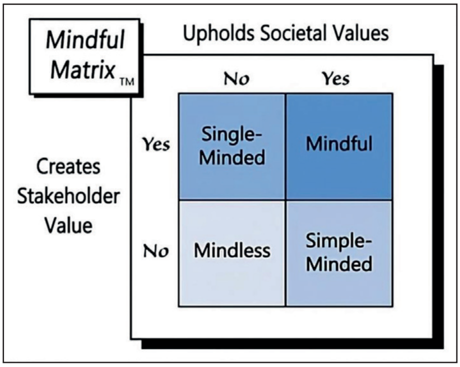

Figure 1. Mindful Matrix.

Source: Hagenbuch and Mgrdichian (2020).

Implications: They lead to the use of resources that are not needed and the bad brand image of the company which eventually implies to the consumers not to trust the company and the company could not be successful.

4. *Mindful*: Effective and Ethical.

   Description: These methods are the ones that successfully manage to be both efficient and ethical, they are customers-friendly, socially responsible, and environmentally sensitive.

   Implications: These are the results of sustainable growth, enhanced brand reputation, and tight consumer relationships.

Through the Mindful Marketing Matrix, businesses can evaluate and improve their strategies to obtain both ethical integrity and marketing effectiveness at the same time, which will lead to trust, loyalty, and long-term success.

Similarly, there has been a recent wave of consumer research debating the impact mindfulness can have on the decision-making processes set by consumers. Likewise, mindfulness offers a solution to the phenomenon of mindless consumption, through which it can help enhance social welfare levels (Bahl et al., 2016; Ndubisi, 2014). Mindfulness increases consumers' reliability on physiological cues for purchases (Van De Veer et al., 2016), and mindfulness also influences consumers' loyalty and quality of relationships in service marketing situations (Ndubisi, 2014). However, most of the existing literature revolves around how mindfulness influences consumer behavior or how it can be used to reduce mindless consumption. High-mindful consumers exhibit higher levels of trust, satisfaction, and commitment compared to low-mindful consumers (Bahl et al., 2016; Ndubisi, 2014; Van De Veer et al., 2016). Mindfulness reduces compulsive smartphone SNS (social networking site) use, boosting self-esteem, and reducing social anxiety. Mindfulness interventions can help alleviate stress and improve self-esteem, potentially reducing stress associated with SNS usage (Apaolaza et al., 2019). According to Evans et al. (2009), trait mindfulness, especially its nonjudgmental and nonreactive aspects, predicts increased persistence on a challenging lab task. However, self-critical aspects of self-consciousness were found to be negatively correlated with mindfulness, and self-consciousness did not predict persistence as one might have predicted. Although most research has used the terms self-awareness and self-consciousness interchangeably, the current study employed the word self-awareness as an inclusive term that covers both dispositional and situational self-focus at the theoretical level. If we focus on self-awareness alone, which is self-consciousness, Vorauer and Ross (1999) also used self-awareness as an inclusive term that includes both state and trait in their study. However, they specified the distinction between self-awareness and self-consciousness. Marketing through social media activities has a positive and significant effect on brand awareness (Arsalani et al., 2021). Bayraktar et al. (2015) explored the strategic value of mindfulness for global marketing, particularly for businesses growing outside of underdeveloped nations. A new brand's ability to reach worldwide markets would generally be hampered by its country of origin, since the results demonstrated that conscious consumers were more receptive to brands from nations with low brand equity. Brand awareness can also be influenced by the content shown in social media activities.

Content Marketing

Content marketing is a key online marketing tactic that focuses on creating and distributing valuable, relevant, and consistent content to attract and retain a clearly defined audience. It typically includes detailed descriptions in advertisements, providing consumers with a comprehensive understanding of a product. This approach is primarily aimed at engagingly educating the audience. Content is often provided by advertising agencies and the firms themselves. The key characteristics of content marketing are as follows:

- It involves creating detailed and informative content.
- It aims to educate consumers about products or services.
- It utilizes a variety of techniques and media due to the extensive use of the internet.
- It aims to build a business's reputation and customer focus.

(Agarwal, 2020; Al-Gasawneh & Al-Adamat, 2020; Arsalani et al., 2021; Bunpis & Haron, 2014; Langaro et al., 2015; Sussman & Siegal, 2003; Xiao et al., 2019). Commonly known as advertorials, it consists of placing advertisements through articles about a product or service, and providing information in a newspaper, magazine, or website (Vinerean, 2017; Wixom & Todd, 2005). In many cases, publishers are paid by brands to create informative articles, and marketers use this technique to create awareness of a product among their target consumers. Using suitable media, a specific target audience can be reached with content marketing. A good example of this is content marketing in business publications, where a particular set of people with a definite interest in finance, markets, economics, and other products is targeted. In the case of brands, however, narrative is a more effective means of reaching out to potential customers than traditional print advertising in newspapers, magazines, or online banner advertising. Active engagement on brand-like pages on social media, especially Facebook, significantly improved brand attitude and had a direct beneficial impact on brand awareness, with the relationship between the two being mediated by brand awareness. Furthermore, the active participation of users in brand-like pages was positively influenced by their previous purchase frequency. Content marketing, when approached mindfully, can significantly enhance brand awareness. This approach leads to a consistent increase in brand awareness, suggesting that mindfulness principles in content marketing are key to higher consumer engagement and brand loyalty. This mindful approach in content marketing not only elevates brand-consumer relations but also transforms them, making mindfulness a powerful tool for marketers aiming to deepen their connection with consumers (Langaro et al., 2015). One online marketing tactic that drives business within the company and connects with the target audience is social media marketing. Attempting to persuade customers that a company's goods or services are worthwhile by using social media is known as social media marketing. Building a business around a company's reputation and customer focus is the primary objective of social media marketing, which helps businesses grow and thrive (Arsalani et al., 2021). Content marketing typically includes detailed descriptions in its advertisements, to provide the consumers, with a thorough understanding of a product. In most situations, the original content is provided by advertising agencies and the actual firms. Due to the extensive use of the internet, there is a great variety in content marketing techniques and media. A common feature of all online content marketing is its educational component, which must be presented in an engaging manner online to minimize the audience's demand for cognitive ability. As a result, online content marketing is found to be more effective than traditional advertising. Brands that integrate mindfulness in their content marketing strategies are more likely to experience increased consumer engagement and loyalty. Mindfulness in content marketing involves creating content that is not only informative and engaging but also ethically responsible and aligned with consumer well-being (Bunpis & Haron, 2014; Sussman & Siegal, 2003; Xiao et al., 2019). In this paper, the concept of content marketing was studied with the help of the work of Xiao et al. (2019), by making the consumer aware of the product, describing its advantages, and grabbing their interest, to create effective marketing content. To have a better understanding on the behavior, intentions, and perceptions of consumers toward a brand, three theories, namely, Schema theory, Brentanian theory, and Theory of Relativistic Consciousness, are discussed in the following section.

Theories

Schema Theory

It is an area of cognitive science that studies how the brain organizes information. An ordered body of knowledge about a topic or occurrence is called a schema. It is used to guide present knowledge or action and is based on prior experience. A thorough framework for examining how customers interpret brand information can be found in schema theory. The schema theory lays out a cognitive framework that helps in understanding the process of attaining awareness about a brand by the consumers. This theory helps in understanding the influence of content marketing in brand perception and consumer engagement through established cognitive schemas, and therefore, is selected for this study. The boundaries of knowledge content are defined by a cognitive schema, which also distinguishes between different kinds of information and shows the relationships between different forms of information. The ability to examine brand-specific knowledge in many contexts and in conjunction with superordinate and subordinate knowledge structures is made possible by the significant fact that the internal structure of schemata is constant across conceptual domains. According to the cognitive psychology theory of schemata, people tend to simplify reality by arranging and storing all of the information and experiences they have about their social environment in memory-based cognitive structures known as schemata. Our long-term construction of cognitive schemata shapes our expectations about the characteristics of social situations we encounter, governs how we perceive information, and provides cognitive economy. Schema theory has been applied in marketing research because consumers' perceptions of the market can also be shaped by relevant cognitive structures, such as the product, brand, or ad schemata. Schema knowledge has been found to have a significant impact on how consumers process and react to marketing communications (Halkias, 2015; Stojanović et al., 2018).

Chan et al. (2017) asserted that a company's decision to allocate its advertising resources between offline and online platforms has a substantial impact on its brand perception and performance. They use schema theory as their overarching framework, and they find that reputability, social interactivity, and message content strategies act as moderators. *Application of Schema Theory.* The applications of schema theory are as follows:

1. *Apple*: Apple, having its name so well-known and typical, is a good example of how schema theory is the basis of consumer perceptions and brand evaluations. With Apple being a famous brand, a strong, consistent schema of the company has been created in the consumers' minds. This scheme covers the brand name, product design, and user experience. A slight shift from this firmly set structure, such as different brand names or the product look, will probably be regarded as a negative. For example, an iPod with a different name or modified design would be labeled as an imitation or counterfeit by the customers because of the strong brand schema that is linked to Apple. This high typicality ensures that Apple continues to keep its brand equity and consumer trust thus, resisting to imitation and fake.
2. *Red Bull*: The other brand, Red Bull, also shares this advantage of the schema theory as well. Red Bull's branding is so powerful that every product that shares its design or name is evaluated very carefully by the customers. The schema for Red Bull comprises of its logomark, color scheme, and the way the energy drink is presented. When a competitor launches a product that looks exactly or virtually the same or has the same name, it is probably to be given a bad and judged to be a counterfeit or imitation. The reason is that the brand Red Bull has a strong scheme, and any deviation is quickly noticed and rejected by the consumers.

Apple and Red Bull are the two paradigm case examples of the strength of brand schemas in safeguarding against imitation and counterfeiting. The already-existing schemas for these brands make it possible for the consumers to easily recognize and deny the products that do not fit their opinion of what an authentic Apple or Red Bull product should look and be named. This high brand typicality thus encourages the consumers to stick to the brand when they are trying to keep themselves away from the imitation attempts (Roux et al., 2016).

Brentanian Theory

Brentano classified mental phenomena and used that idea to differentiate between mental and physical phenomena. According to Brentano, distinctions in the way mental events are directed toward a particular object represent differences in kind across mental acts if intentionality is a basic component of all mental acts. Every mental phenomenon has an “inner perception” that gives it the ability to be considered aware in the intransitive sense. The concept of intentionality and perception in this theory, helps in analyzing the impact of targeted marketing on the consumer behavior toward a brand, thereby making it necessary to include this theory in the review. This theory emphasizes on consumers’ perception and judgment toward brand loyalty and purchase pattern of a product. One of the three fundamental categories of intentional phenomena that Brentano discusses extensively in his psychology is judgments. That is not to say, however, that Brentano’s theory of judgment is just concerned with psychological issues. In addition, Brentano wants to demonstrate how the act of accurately judging can give us a foundation for understanding ideas such as existence, truth, and logical deduction. Thus, logic, epistemology, and eventually metaphysics are expected to evolve from Brentano’s study of the mental act of judgment (Dewalque, 2013). Example: Nike

Intentionality and Perception: Nike’s marketing strategy is built on the ground of deliberateness, and thus concentrates the consumer’s attention on the brand’s basic values of performance, innovation, and inspiration. The “Just Do It” campaign which is an iconic one by Nike is a shining example of how the brand creates intentionality. This slogan is not just a phrase; it pushes consumers to link Nike with motivation, empowerment, and the triumph of obstacles. Each advertisement, sponsorship, and endorsement is formulated to improve this idea.

Inner Perception and Consumer Awareness: Nike very well utilizes inner perception to create consumer awareness of its brand. Through the constant belief in the connection between Nike and top athletes and sports events, Nike represents the idea that wearing its products will be a great help to the consumers to achieve their greatness. This goes down to the consumer level who feel that they are one of the community of high-performers when they decide to go with Nike. The emotional appeal in Nike’s ads generates a feeling of self-awareness and the association with the brand’s values, thus the emotional connection to the brand.

Judgment and Decision Making: The marketing strategies of Nike are aimed at changing the consumer’s view about the performance and quality of the products. Nike can cite either the technological innovations like Nike Air or the sustainable practices like Nike Grind as its reasons for the consumers to purchase its products and, hence, the consumers will perceive Nike products as better. This is quite obvious in their product launch meetings and advertisements, which usually have testimonials from athletes and detailed descriptions of product benefits.

Nike’s methods of marketing are well-designed by so-called Brentanian Theory which concentrates on the purpose, the manipulation of consumer’s perception and the shaping of their judgments. Through the association of its brand with the messages of empowerment, performance, and social responsibility, Nike establishes a well-defined internal perception among the consumers, who then see Nike products as the necessary tools for personal and societal goals. The whole plan promotes the strong relationship with the brand and the reason for its long-time market success.

Existence, Truth, and Logical Deduction: Nike, by the way, strengthens the belief in its brand values, not only by the constant repetition of its messages but also by the real-life stories of its team. The company's actions concerning social issues like equality and sustainability are being demonstrated through campaigns. For instance, the "Equality" campaign is a good representation of Nike's commitment to inclusion and a logical demonstration of how the brand is making a contribution to the social change. This strategy is a tool for consumers to logically conclude that by purchasing Nike products, they are actually supporting these values (Yan et al., 2022).

Relativistic Theory of Consciousness

Consciousness is a relativistic phenomenon, neither observer's position can be privileged, as they both describe the same underlying reality. This theory delves into the concept of influence of consumer awareness at different levels on brand perception and consumer purchase behavior and hence, is selected for the review. With applications in consumer, industrial, and media research, the "level of consciousness" technique provides a more sensitive measure of brand strength than overall brand recall (Cohen, 1966). The presumption is that attitudes and needs that shape the preferred brand are formed explicitly before consumers make judgments. However, studies in the field of automaticity suggest that most, if not all, human action is either fully unconscious at the outset or happens entirely unconsciously. Unconsciously influencing customers' attitudes, beliefs, and aspirations are other automatic mechanisms that affect them. These include behavioral mimicry, attribute and stereotype activation, and nonconscious goal pursuit. Requiring no conscious thought or intention, habits are a unique kind of automaticity in which behavior is entirely governed by contextual cues (Martin & Morich, 2011). Positive influences on adolescent brand consciousness include product placements, movies, and the perception of parents' and peers' brands; teens who are very conscious of brands view these influences as having a stronger impact on their own and other people's purchasing decisions. (Nelson & McLeod, 2005).

The conceptual model in Figure 2 was developed by Anna et al. and was tested by Arsalani et al. (2021) empirically. As it is observed from the *t*-test (t = 14.58), it was found that there was a significant relationship between the variables based on the null hypothesis being rejected and the conclusion that was deduced at a 95% confidence interval, which shows that social media marketing enhances and had a positive effect on brand awareness. For the empirical analysis, PLS-SEM was employed, and the hypothesis postulated in this study was upheld, with a path coefficient of 0.550 and a *t*-value of 14.58.

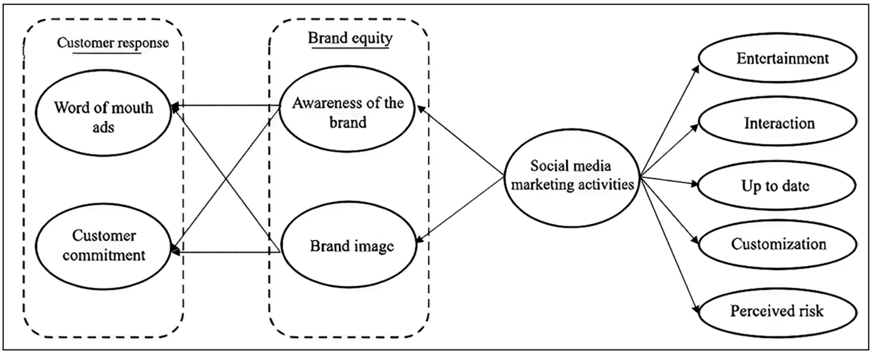

Figure 2. Conceptual Model of Research.

Source: Arsalani et al. (2021).

Findings and Conclusion

This study reveals that mindfulness inclusion in content marketing significantly enhances brand awareness. The analysis indicates that when mindfulness is included in content marketing strategies, customers perceive, and interact with the brand much better. So, mindful content marketing leads to greater and more profound engagements between the brand and its audience thus fostering a larger level of consumer engagement. According to the study, there is a chance for a more successful mindfulness appeal if brand communication does in terms of presence-away-from and nonjudgmental processing of information. It is further corroborated by Kabat-Zinn (2003) on mindfulness and Bahl et al. (2016). Besides, the research stresses that content marketing assists in developing a conscientious awareness of any brand. This research is consistent with Xiao et al. (2019). It outlines the significance of content marketing as one avenue for creating profound interpersonal connections between brands and consumers. This study extends their findings to demonstrate that mindfulness enhances the effectiveness of content marketing in propagating brand awareness.

During the review, several limitations were encountered which can be taken care of in further studies. The study primarily focuses on theoretical studies rather than empirical findings. The results drawn in the existing literature are mostly limited to a specific area, which restricts their applicability in the global context. The study also lacks experimental outcomes which limits the validation of the conclusions drawn from the literature review.

The study provides significant contributions in the field of mindfulness in brand marketing and consumer perception. The study introduces an intervention of mindfulness theories in promotional strategies for brand awareness and their perception among the consumers. The study also highlights the social implications of marketing and ethical issues embraced in marketing strategies. The review also provides the importance of the integration of mindfulness into marketing techniques and content branding to foster more ethical and responsible marketing content.

Overall, this study supports the trend found in literature on mindfulness in marketing as where content marketing is taken from a point of view that reflects a mindful approach there would be a consistent increase rate concerning brand awareness. Hence, we can say that brands that apply mindfulness principles in their content marketing approaches are likely to receive higher levels of consumer engagement and brand loyalty. Marketers who may want to use mindfulness as a powerful tool in their content marketing efforts and would like its practical application that wholly transforms brand-consumer relations can interest themselves in this research.

Scope for Further Research

The concept of content marketing with a blend of mindfulness can bring significant development in the scenario of brand-consumer interactions. To fully utilize the concept in the promotion of brands, it is quite essentially to understand and explore the potential of mindful content marketing and its effectiveness across various industries. Industries from different sectors have unique techniques of marketing and consumer behavior. For instance, while electronic brands can utilize mindfulness to foster consumer engagement with their electronic appliances, health care sector could utilize mindfulness in marketing for consumers' health and well-being.

Another direction for future research is investigating consumers' perception toward mindful content marketing and its influence on their brand loyalty and purchasing behavior. To understand the perception of consumers toward mindful content marketing, it is essential to delve into the psychological and emotional aspects that are activated by mindful content and examine whether mindful content marketing shows positive results in brand associations and inclines more toward choosing mindful brands over others. This can be achieved by conducting qualitative and quantitative surveys, to gather a comprehensive view of consumers' perception toward mindful content marketing.

Another scope for future research is examining specific mindfulness techniques or approaches that can be effectively integrated into content marketing strategies. To determine the efficiency and adaptability in various contexts of marketing, it is crucial to identify the techniques that can resonate more with consumers and the ways of integrating these techniques into marketing content.

To help companies understand the benefits of mindful content marketing and the perception of consumers toward brands over a long period of time, longitudinal studies on impact of mindful content marketing on brand awareness and consumer engagement is highly imperative.

In this globalized world, it is vital to study the cultural influences on effectiveness of mindful content marketing. Cultural values and norms are factors having high impact on the behavior and perception of a consumer toward a brand. Hence, research in this area can exhibit the perception of mindful marketing across various cultures and communities.

Exploring the role of mindfulness in digital and social media marketing strategies is another aspect of research in mindful content marketing. Online sites and social media are the most contemporary and fast-paced digital platforms where the catchy contents of brand promotions can often make the consumers lose their principles of mindfulness. Research in this area can help in investigating how to incorporate mindfulness in digital content marketing, to create more satisfaction among consumers.

The principle of mindfulness offers a powerful tool to brands that strive to create positive and long-lasting associations with consumers.

Besides, using structural equation modeling (SEM) and getting more empirical data will be a sound theoretical and practical framework for the analysis of the complex relations between mindful content marketing, consumer perceptions, and behavioral outcomes. SEM can help to find and measure both the direct and indirect effects of mindful marketing strategies on brand loyalty and consumer engagement, thus, it provides a deeper understanding of the effectiveness of these approaches.

The main idea of mindfulness is a useful method for brands to form good and lasting relations with consumers. Future studies in these fields will offer useful tips for businesses that want to include mindfulness in their marketing plans correctly.

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Article

The Importance of Sustainability Strategies in Businesses: A Research Trend Analysis

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Abstract

Supporting systems and measures continue to proliferate worldwide as more nations declare their commitment to net zero in response to adverse climate changes. To achieve net zero by 2070, it is crucial that Indian businesses focus on business sustainability by incorporating detailed information related to sustainable development goals in their disclosures. This study discusses critical focus areas based on three dimensions, namely economic, social, and environmental using bibliometric and sensitivity analysis for integrating the issue of sustainability into the business operations in India. Businesses that embrace sustainability can reduce risks, add value for stakeholders and forward the objectives of sustainable development. R-studio and VOS viewer were used to conduct bibliometric analysis for the last 30 years publication in this domain on 506 documents published. The study critically puts forward ways to increase the general public's understanding of environmental issues using sensitivity analysis. The study identifies lack of government funds, green taxonomies, peer group discussions, and training programs that could lead to new possibilities for developing a sustainable environment in India. Furthermore, the study aims to assist managers upholding sustainability values in comprehending the relevant green practices. The study's findings indicate the need for additional future investigations that empirically examine the components of sustainable organizational success.

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Introduction

The effect of climate change is visible everywhere, right from weather patterns to our health and world economy. Every year there are more than a billion deaths due to air pollution. The UNFCCC's Nationally Determined Contribution Synthesis Report, 2022, warned that even if all existing climate pledges were delivered, the world would be heading for 2.4°C of warming by the end of this century, far ahead of the safe limit of 1.5°C. India has the densest population and is considered the most populous country in 2023 (United Nations, 2023). With increasing population, resource exploitation, and pollution, India has become a major stakeholder in the succession of sustainable development goals (SDG) as well.

Sustainability seeks to ensure intergenerational equity and is frequently characterized as development that "meets the demand of the present without compromising the potential of future generations to satisfy their own needs" (United Nations, 1987). It is increasingly crucial for firms to embrace sustainable practices in order to improve the continuity and future prospects of their business (Cheema et al., 2020). Seventeen SDGs were also proclaimed in this context at the United Nations Sustainable Development Summit in 2015 for setting the global objectives to address the grave economic, social, and environmental concerns. Since then, governments in many wealthy and developing nations have passed regulations requiring enterprises to find more sustainable solutions for their operations as a result of the rapid depletion of natural resources and rising pollution (El-Kassar & Singh, 2019).

The target for reducing the carbon emission intensity announced by India in COP 28 is an important agenda to achieve by 2030 (Das & Ghosh, 2023). For that, industries need to reduce their carbon footprint, reduce fossil fuel burning, and so on by more usage of renewable energy sources (Sheng et al., 2024; Trivedi et al., 2024). Further, climate risks continuously threaten many business sectors economically. The traditional businesses must start making significant strategic changes if they want to integrate sustainability into their everyday operations. Modern academics have proposed green in this situation (Fatoki, 2019; Ghosh et al., 2023; Harris & Crane, 2002; Kim et al., 2014; Paillé et al., 2014; Pham et al., 2019; Roscoe et al., 2019; Smith & Muller, 2016; Wang, 2014).

The incorporation of green ideals within the organization's mission statements, strategy plans, and internal communities can assist eco-friendly corporate management methods (Kucukoglu & Pinar, 2015; Pradhan et al., 2020; Yong et al., 2020, Yusliza et al., 2020). Another study conducted by Kamble et al. (2019) asserts that corporations can only satisfy multiple needs of stakeholders if they give equal priority to the 3Ps—profit, people, and planet. Elkington (1998) introduced the idea of the triple bottom line, which contends that an organization's ability to sustain itself depends on how well it performs in terms of its economic, environmental, and social performance. As an emerging field of study, sustainable organizational performance, this idea has arisen (Hao et al., 2021; Khan et al., 2021; Iqbal et al., 2020; Shahzad et al., 2020).

Inception of the Idea

As explained in the previous section, focusing on business sustainability is crucial to achieve net zero targets. The importance of sustainable business practices in international companies, based on observations from Indian and international publications, was focused. The study emphasizes the vital role that sustainability plays in promoting long-term value creation, reducing risks and building resilience in a world that is changing quickly by combining information from several sources. The incorporation of viewpoints from Indian periodicals emphasizes how applicable and pertinent sustainability issues are, given the socioeconomic situation of India.

International publications have chronicled the development of sustainable techniques in great detail, emphasizing how they have revolutionized industries and businesses of all kinds (Smith & Jones, 2023). Research indicates that the incorporation of sustainability principles into business operations results in increased competitiveness, enhanced brand equity, and superior financial outcomes (Johnson & Patel, 2024). Furthermore, by tackling urgent global issues like resource scarcity, social inequity, and climate change, sustainability programs help.

Indian journals provide special perspectives on the applicability of sustainable techniques in the Indian environment. According to literature, Indian companies are realizing more and more how crucial sustainability is to spurring innovation, drawing in capital, and satisfying stakeholder expectations (Kumar & Gupta, 2022). Furthermore, the implementation of sustainability programs is vital in tackling India's socio-economic predicaments, encompassing issues like poverty reduction, rural development, and environmental preservation.

There is a convergence of global and Indian attitudes regarding the significance of sustainability practices in enterprises, even though the particular challenges and opportunities may differ across areas (Sharma & Singh, 2021). Indian and international journals agree that companies must embrace social responsibility, ethical governance, and environmental stewardship as part of a comprehensive strategy for sustainability. Furthermore, it is believed that long-term success depends on the incorporation of sustainability into fundamental corporate strategy.

The research by World Bank revealed that sustainability attracts more stakeholders to invest and employees to retain. To sustain a business in long term, investing for sustainability matters a lot. Many companies apprehend that due to low environmental, social, and governance (ESG) score, their company may face loss by losing support from investors (Sustainalytics, 2022). However, it should be noticed that there remains a huge disparity in ESG scores provided by different organizations due to individual reporting structures followed by them (Bhattacharya & Chakrabarty, 2023). Therefore, a unified structure should be followed. The top priorities of companies are obviously reducing carbon emission. To create sustainability reports that comply with government and consumer requirements, many firms opt to use frameworks of global reporting projects. However, in order to attract investors, the organizations could falsely claim to be green and sustainable—popularly known as "green wash" (Bhattacharya, 2022; Bhattacharya & Chakrabarty, 2023). Greenwashing is done by organizations to create investor confidence and receive funds with claims that are not credible. This could not just divert resources from eligible green players who could be medium-scaled firms and also create more unsustainable environment with polluting firms getting funds by mimicking. In order to ensure credibility of the disclosures by business organizations, it is important to identify the appropriate parameters that could assess and track business practices. The Business Responsibility and Sustainability Reporting (BRSR) by SEBI in 2021 has put forward some performance-based indicators like scope of emissions, carbon emissions, waste generated, energy consumed, and so on in Principle 6 to gauge an organization's sustainable business practices. However, Bhattacharya and Chakrabarty (2023) show that it is not just carbon emissions that should be focused but per unit change in emissions with respect to a change in energy consumed that should be considered to track greenwashing. Alternate parameters like absolute difference between the change in emissions and change in energy consumed with respect to their level of market capitalization (representing organization's capacity to reduce environmental damages) assist in identifying greenwashing. In order to spread the concept of environmental protection, the government must also invest more money in promoting sustainable products and regulations.

Statista (2021) shows the general mindset toward sustainability—global consumer survey from different countries including India.

Given the fact that the consumption demand for goods would increase with a huge increase in urban population, which is estimated to reach 590 million by 2030 (McKinsey, 2010), the economic output of these cities is expected to grow over time. Increase in output would then be accompanied by increase in emissions thus disturbing the environmental sanctity. Therefore, it becomes crucial for enterprises to address the business sustainability challenges in cities. Brundtland's study from 1987 supports this conjecture that cities' sustainability may be evaluated by looking at three factors: economic, social, and environmental, which together form the basis of sustainable performance (Büyüközkan & Karabulut, 2018). Sustainable consumption is a crucial factor in inducing sustainable business practices.

Furthermore, there is a huge need to explore differences in the business sustainability research domain and trend in developed and developing nations. A report entailed that renewable energy and freed-up investment will more than make up for the losses to the global economy, which will be suffered by countries that are sluggish to decarbonize, but early adopters will benefit. It emphasizes the danger of producing significantly more oil and gas than is necessary to meet future demand (Fossil Fuels, 2021). Citizens need to move toward sustainable lifestyle.

In light of the discussions above, this study attempts to answer the following research questions:

1. What has been the research trend in the domain of sustainable practices over the years?

2. What business sustainability strategy should India focus on based on gaps identified in bibliometric and sensitivity analyses?
3. Who are the most influential authors and from which countries? Which is the most cited article?

Relevant Literature on Sustainable Practices

According to a study's findings (Attaianese, 2012; Roscoe et al., 2019), a green organizational culture encourages employees to participate in pro-environmental actions. After some time, however, the employees develop a behavior that gives them the authority to act with sustainability goals in mind. An employee who practices pro-environmental behavior will typically try to eliminate unnecessary production procedures (Simpson & Samson, 2010). According to a study by Dubey et al. (2017), organizational culture has a big impact on how pro-environmental and concerned people are about sustainability issues. In the period of sustainable development, an organization's performance with regard to society, the economy, and the environment is referred to as sustainable organizational performance (Argandoña & von Weltzien Hoivik, 2009).

Review of the literature based on sustainable practices is shown in Table 1. The importance of eco-innovation methods in promoting the sustainable performance (economic, social, and environmental performance) of any company is the focus of a 2010 study by Carrillo-Hermosilla et al. According to this study, in order to achieve sustainable performance, certain business processes can make use of dimensions like design amplitude, user amplitude, product amplitude, governance amplitude, and stakeholders' commitment to the process of sustainable innovation, which will ultimately lead to a sustainable society. Young and Tilley's (2006) study emphasizes the importance of business leaders in reshaping the corporate sustainability landscape. These managers inspire their staff to view sustainability as a chance rather than a duty by encouraging them to view it as an opportunity.

In recent years, bibliometric studies in the domain of sustainability have been increased to showcase the research focus and its need in developing countries. According to Nobanee et al. (2021), USA was the first country to initiate research in more depth on work practices of sustainability. They did bibliometric analysis on sustainability and risk management. A bibliometric study was performed on "Sustainability and Corporate Social Responsibility" by Meseguer-Sánchez et al. (2021) and observed top research countries in this domain as the United Kingdom, Germany, and the Netherlands. China is seen to be the most prolific country with 1,893 publications on sustainability bibliometric study by Tang et al. (2018). A bibliometric study was conducted on "corporate sustainability" in 2005–2021 duration and was found that USA is the top highest publishing country in this research domain (Jan et al., 2023). Ensslin et al. (2022) conducted bibliometrics on Sustainable Management of Libraries in Higher Education Institutes and found it is an important aspect among stakeholders. Agrawal et al. (2022) reported bibliometrics analysis on sustainability of supply chain practices. A bibliometric study was performed on sustainable business performance by Bota-Avram (2023) and concluded that sustainability is the most trending topic in research in future time. Sustainability in

Table 1. Literature Based on Sustainable Practices in Business.

S. No.	Study	Objective	Sample	Findings
	Khan et al. (2021)	The study emphasizes the significance of OCBE as an intermediary in the interaction between SP and GHRM	A sample size of 216 ISO4001 manufacturers was chosen for the data gathering. Random sampling was the method of sampling that was used	The findings demonstrated the compatibility of GHRM with SP. Additionally, it explains how EMS and OCBE were partially mediated by SP and GHRM. The results also note the critical part played by EMS in boosting SP
	Jilani et al. (2020)	The purpose of the study is to investigate how employee knowledge sharing affects the long-term success of Bangladeshi banks. The study on the aforementioned association also looked at the "moderated mediation model" of knowledge concealment and employees' ambidexterity	Data were gathered from various types of banks in the capital city of Dhaka. More than 400 bank branches were surveyed using a questionnaire, and 295 of the responses were valid	The result variable was demonstrated to be significantly explained by each predictor variable, with the exception of the impact of information sharing. An investigation of the mediation process found that employee ambidexterity moderated the relationship between knowledge sharing and long-term performance. Unexpectedly, the moderation study revealed that knowledge concealment has no impact on the impact of knowledge sharing on employees' ambidexterity. This study adds to the corpus of knowledge by highlighting the significance of information hiding and exploring how knowledge sharing might motivate and sway workers to produce long-term benefits
	Hao et al. (2021)	This study explores the effects of lean bundles and factory automation on sustainable performance using the complementarity principle	Students who are pursuing MBAs and EMBAs provided the data. We contacted 417 managers of industrial and service companies operating in China; 178 replies in total were obtained	The combined effects of the three lean bundles plus servitization on long-term performance outperform the effects of the individual component lean bundles by a significant margin. In order to understand and avoid the "service dilemma," this study combines theoretical analysis with practical testing to demonstrate how servitization affects economic performance. We contend that the three servitization approach elements work in concert to help businesses adopt green supply chain management and create eco-friendly product-service offers. The results show that there is no direct relationship between JIT and environmental performance

Iqbal et al. (2020)	The study examined the mediating role of psychological empowerment in the relationship between long-term performance and leadership as well as the mediating role of psychological safety in that relationship	Cluster sampling methodology was used to collect data in Malaysia, Indonesia, and Brunei Darussalam. For the aim of collecting data, 405 SMEs were selected	According to the empirical research, long-term leadership has a considerable impact on psychological safety, which has a major impact on long-term performance. This study supports psychological empowerment's mediating influence on psychological safety and long-term performance as well as its mediation-moderation effect on performance and long-term leadership
Shahzad et al. (2020)	This study, which adopts the resource-based perspective theory, looks at the relationship between green innovation and organizational agility and how crucial it is for sustainable organizational performance	A cross-sectional methodology was used to gather data from manufacturing firms like cement, textile, and leather using online and offline survey questionnaires. Out of 900 questions, a total of 539 answers were given	According to the results of this study, KMP positively affects GI, and GI positively affects CSP. The results of our study indicate that all KMP factors have a strong relationship with GI. The results demonstrate that increasing environmental awareness is still necessary. The study discovered that there is a limited mediation of GI. KMP and CSP are associated. The moderated link between OA and GI was also examined in the current study, and it was found to have a direct and positive impact
Jabbour et al. (2020)	This article examined a novel research design and investigates if stakeholder pressure has any impact on the obstacles to and drivers of motivation for the circular economy practices	Information was gathered from a Brazilian industrial firm. There were 86 surveys in the entire sample	The research examines how stakeholder pressure affects the barriers to and drivers of adoption of CE practises. Also, the long-term success of businesses is influenced by CE principles. The combination of stakeholders, challenges, drivers, CE principles, and long-term performance shows that pursuing circular economy business frameworks requires a deep understanding of difficult concepts
Kularatne et al. (2019)	To investigate the sustainability performance of hotels at Sri Lanka	Panel data of 24 hotels (medium- and large-sized) over the 5 annual periods was used	The findings suggest that being environmentally conscious improves hotels' efficiency, particularly in terms of increasing waste management and energy efficiency

(Table 1 continued)

(Table 1 continued)

S. No.	Study	Objective	Sample	Findings
	Kamble et al. (2019)	The research looks at how stakeholder pressure influences the reasons and factors that prevent the adoption of CE practises. Additionally, CE principles have an impact on the long-term profitability of organizations. The intersection of stakeholders, drivers, obstacles, and circular economy principles with long-term success demonstrates that adopting circular economy business frameworks necessitates a thorough comprehension of complex ideas	A cross-sectional data survey of manufacturing firms in Mumbai, Pune, Bangalore, and Chennai was conducted. The total number of received data for the study was 205	According to the findings, I4 T has a direct and positive influence on LMP and SOP. LMP was also identified in the study as a significant mediating variable. The study also provides a list of approved measurement items for I4 T, LMP, and SOP from the perspective of Indian manufacturing companies
	Mousa and Othman (2019)	The goal of this study is to examine how widely green human resource management practises are used in Palestinian health-care institutions and how they affect long-term performance in this vital service industry	Top administrators in the administrative department and HR managers were the focus of the data collection in the health care sector; 69 out of 77 samples were usable	According to their findings, employees employed GHRM tactics with a mediocre level of success. Similar to past studies' findings, the GHRM bundle was discovered to have a favorable relationship with EP, Ec. P, and SP. There are beneficial and important links between the GHRM bundle and the EP. The second most popular strategy among participants, with a moderate level of adoption, was the GHRM method of "training and green involvement." The data indicate that "green performance management and pay" is not frequently applied to promote staff pro-environmental culture
	Dubey et al. (2017)	This study provides a conceptual framework that connects reconfigurable manufacturing systems with top management attitudes, involvement, and environmental performance using agency theory and organizational culture	By delivering survey forms to 864 potential groups, data were gathered. It was a two-stage process; 167 useful answers were given	The results show that senior managers actively participate as stakeholders in the activities related to RMS adoption so that environmental performance may be readily accomplished, but that conflict may arise because of their perceptions of the key benefits of RMS. Because many additional parties (agents) that desire to adopt RMS could have diametrically opposed opinions and objectives

Maletič et al. (2016)	The research subject of whether a company's country of origin affects its sustainability exploitation and exploration procedures is addressed in the article	266 valid surveys from various organizations in Germany, Poland, Serbia, Slovenia, and Spain were used to gather data	According to this research, organizations with headquarters in various nations hold very different views regarding the following topics: (1) levels of organizational performance dimensions attained; (2) adoption of sustainability exploration strategies; and (3) the effects of a given nation on organizational performance. The results partially reflect a change in emphasis in how sustainability concerns are managed from a compliance-based to a market- and competition-based strategy
Maletič et al. (2015)	This research fills the gap by investigating the underlying mechanism of sustainability-oriented innovation techniques as well as their implications on certain performance metrics	The data were collected from 266 organizations of Germany, Poland, Serbia, Slovenia, and Spain	The study presents actual data that demonstrates how establishing and implementing sustainability-oriented innovation methods may benefit organizations
Glover et al. (2014)	To investigate how retailers may help the dairy supply chains establish ethical sustainable practises at the United Kingdom	70 semi-structured phone interviews with different supply chain stakeholders	The majority of supply chain participants recognized supermarkets as the dominating operator, and the results showed that supermarkets put pressure on various smaller supply chain participants. Despite the fact that some organizations intended to pursue a sustainable goal by incorporating new laws and ethical standards into their own organization, the predominate reasoning seemed to be one of cost-cutting and profit-maximizing

organizations was bibliometrically analyzed by Ogutu et al. (2023). A bibliometric study was performed on “Sustainable business model innovation” by Pan et al. (2023).

Another study conducted by Rennings et al. (2006) covered various sustainable business practices that can improve an organization’s overall sustainability performance. In this essay, process innovation, product innovation, and organizational innovation were the three key themes highlighted. By streamlining the manufacturing process and generating the best output with the fewest inputs, process innovations contribute to an improvement in the economic performance of the organization. The second is product innovation, which corresponds with the manufacturing of items that are sustainability-oriented, including recycled goods and goods made of organic materials. This aids businesses in improving their financial performance because using effective production methods makes it simple for them to generate higher earnings. The third category is organizational innovations, which is the creation of novel management techniques that support the concept of sustainability. Different organizations have embodied holistic environment-friendly systems which serve as a dynamic for the improvement of the overall business performance.

Beske et al. (2014) discussed about sustainable supply chain importance in food industries. The elements of sustainable performance are accurately measured by a study based on lean manufacturing techniques (Sajan et al., 2017). The use of 14T, or industry 4.0, technology by businesses has been found to have a greater favorable impact on long-term organizational performance. In this study, it was emphasized that 14T plays a significant role in enhancing an organization’s performance in terms of its economic, social, and environmental performance. Economically speaking, 14T technologies allow for more flexible manufacturing and product customization, which further boosts client satisfaction and revenue. Employees also get the chance to pick up novel manufacturing processes, which boosts their motivation and morale in terms of social performance. Additionally, 14T technologies contribute to lowering greenhouse gas emissions, excessive fossil fuel usage, and lead to proper utilization of the resources.

This study also examines how ESG aspects are changing in the context of Indian supply chains and business. Through an analysis of ideas from multiple Indian journals such as Gupta and Sharma (2022), Patel and Desai (2023), Reddy and Singh (2024), and Sharma and Kumar (2021), it looks at how ESG integration is now understood, what it means for organizations, and what opportunities and difficulties lie ahead. The study also looks at possible approaches to deal with these issues and improve the efficiency of ESG practices in the Indian business community. The incorporation of ESG considerations has become increasingly popular worldwide as companies realize the value of sustainable operations (Gupta & Sharma, 2022). In India, where social and environmental issues coexist with economic expansion, ESG plays a critical role in supply chain and corporate management (Sharma & Kumar, 2021), in order to clarify the present situation of ESG practices, pinpoint areas in need of development, and suggest future paths for improving. In conclusion, domestic demands and worldwide trends are driving a rapid evolution of the function and breadth of ESG in Indian supply chains and industry. Stakeholders can work together to solve obstacles and capture opportunities for developing a more equitable and sustainable economy in India through ongoing study, discussion, and action. In ESG implementation, this study explores the body of literature from Indian publications.

While the literature has mostly focused on the factors that lead to sustainable business, the literature on credible reporting of sustainable practices undertaken is not explored much in developing economies, especially in India (Afsar & Umrani, 2020; Ansari et al., 2021). A bibliometric study on greenwashing by Santos et al. (2023) shows that the study of greenwashing in developing countries is scant. It includes one paper that is India based with respect to awareness toward greenwashing, consumer preferences, and green and sustainable consumption (Jog & Singhal, 2020). The literature on greenwashing in developed countries has mostly focused on corporate social responsibility in banking industry and financial performance, drivers of greenwashing, and their impacts and reporting overview. Sensharma et al. (2022) show how ESG and CSR disclosure scores in India could identify greenwashing practices of firms. On the other hand, Bhattacharya and Chakrabarty (2023) show that relying on ESG scores could also be misleading given the fact that there exists disparity in the reporting format of organizations, which could not compare across companies. They could also be attributed to the gap in understanding the difference between "clean" and "green," which has not been clear yet. This article prescribes certain firm level parameters that should be focused to track greenwashing. Bhattacharya (2022) stresses the role of financial institutions to track such greenwashing. These articles focused on Indian business and proposes avenues of further research. Other issues of sustainable supply chains have been focused in the bibliometric section of this article to identify the gaps in research on sustainability in India.

Methodology

To measure a researcher's impact on the field of research, bibliometrics statistically evaluates publications. We searched for papers using the renowned research database Scopus. Different searches were conducted using various keyword combinations such as "sustainable practice," "organization," and "business." The appropriate article list was stored as a.csv file. Instead of selecting "all fields (total 17,000 articles)," the "article title" filtering criterion was used. Using the terms with "sustainable practice," 506 documents (including book chapters: 48, articles: 309, conference papers: 84, reviews: 35, books: 12, note: 6, editorial: 5, conference review: 4, short survey: 2, letter: 1) were found.

The steps to simulate the database are as follows (Figure 1):

Stage 1: Scopus Database search, Keywords "sustainable-practice" in all field (17,000 article total found).
Stage 2: Filtration with article field only.
Stage 3: Language filtration (English).
Stage 4: Found 506 articles—384 sources and downloaded as .csv file.
Stage 5: Bibliometric review.

The search was conducted on October 22, 2022. For the bibliometric analysis, R-studio Biblioshiny for Bibliometrix was used majorly in this study, whereas for some collaboration NETWORK analysis, the VOSviewer tool (1.6.18 for Microsoft Windows system) was also used. Further, Google News on

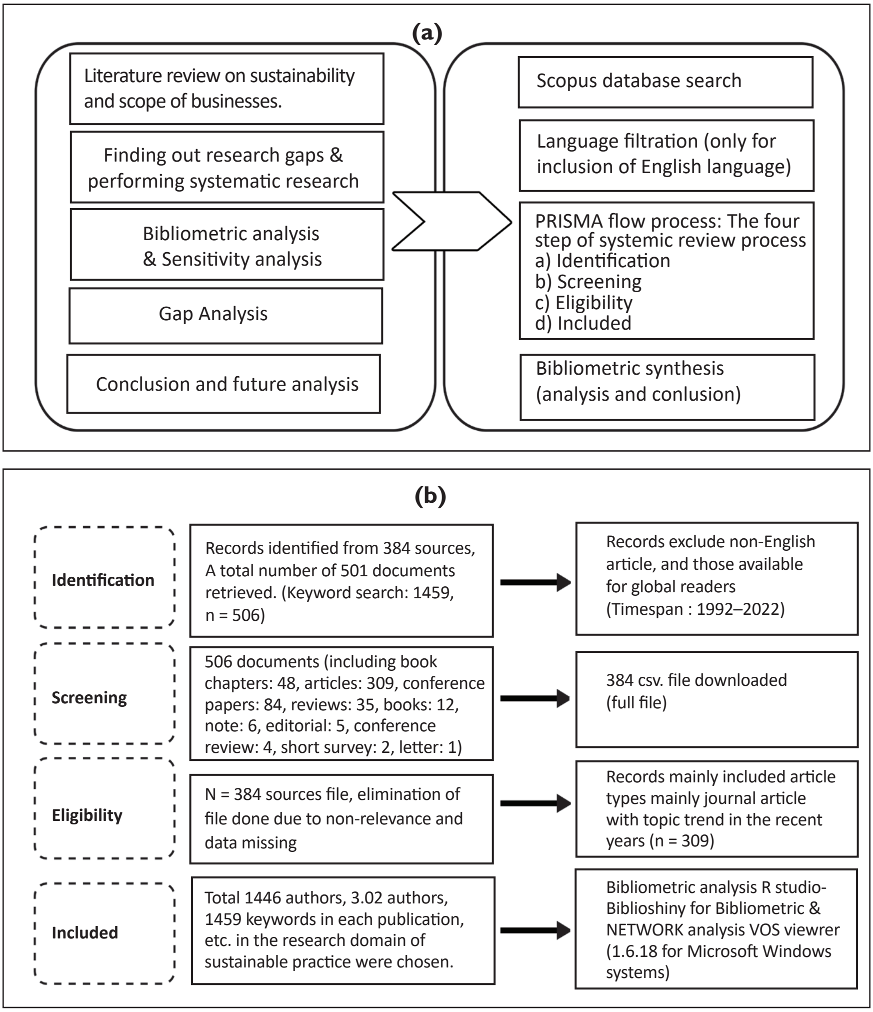

Figure 1. (a) Identification of Steps to be Followed Using PRISMA Framework. (b) The Framework of This Study.

"Sustainable-practice" last 2 weeks was converted into .csv file and explored via R-studio to understand the important words, frequency, and emotion.

Analysis and Discussion

Bibliometric Trend

The supplementary image shows the main information like 384 sources for 506 documents, time span 1992–2022 (30 years), annual growth rate 15.1%, total 1,446 authors, 3.02 authors, 1,459 keywords in each publication, and so on in the research domain of sustainable practice. The average citation rate was observed to be 9.091 per document.

It was investigated how literature has changed over the past 30 years. The annual scientific output in this field of study is depicted in Figure 2 for the period of 1992–2022. From 1992 to 2002, a fairly slow publication pace (1–2 publications per year during this time) was seen. There has been a light rise in publications from 2003 to 2007 period (3–6 documents/year). From 2008 (10 documents), the significant rise has been observed till 2022. There were 65 and 76 publications in the most recent years of 2020 and 2021, respectively. Researchers are more interested in this type of research now than ever before because of the worldwide issue of climate hazards.

Figure 3 displays that the renowned journals in this field within the scholarly community are *Journal of Cleaner Production* (29 documents) and *Sustainability* (18 documents).

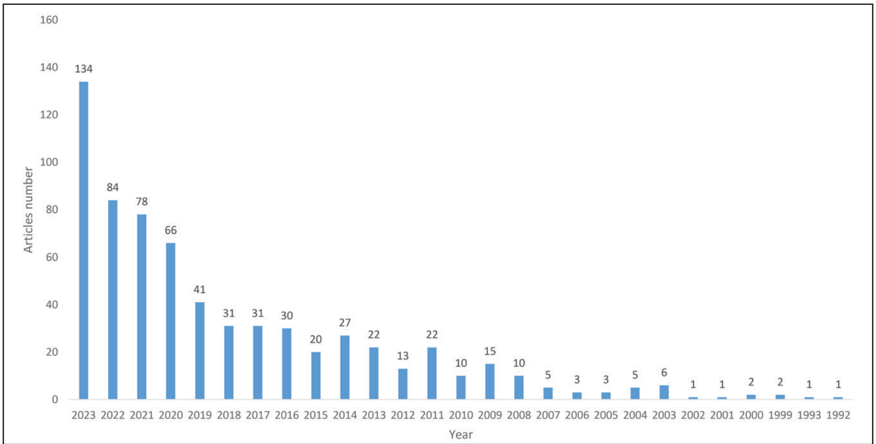

Figure 2. Annual Scientific Production in Last 30 Years in the Sustainability Domain.

Source: Scopus Database.

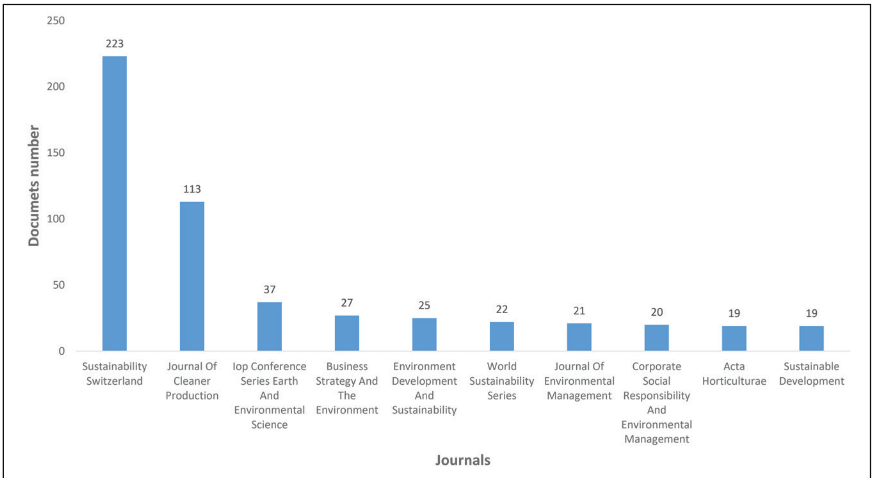

Figure 3. Top Journals in the Sustainability Domain.

Source: Scopus Database.

In the sustainable-practice domain from 1992 to 2022, the most notable documents are listed in Table 2. “An Institutional Theory perspective on sustainable practices across the dairy supply chain” authored by Glover J.L from Loughborough University, UK, received the highest number of Scopus citations (240) in this domain with total citations per year 26.67. Other influential authors are B. Lattimore, M. C. Bryan, and E. Shove from developed nations Canada, USA, and the United Kingdom, respectively (Bryan et al., 2013). It reveals that developed nations are more progressive in thought, research, and strategic planning regarding sustainable practices from the past.

Figure 4a–c shows the influential countries in the research domain related to documents, citations, and collaboration network among the research countries. The United Kingdom received highest 769 Scopus citations in this domain followed by Australia (447), USA (434), and Canada (208). Among 80 countries 72 met the filtering threshold of minimum citation and document of 1. The major collaboration network among countries was observed among USA, Canada, Australia, New Zealand, Netherland, and Poland.

Figure 5a and b shows the collaborative network among the major authors. The collaboration network shows research among scientists like D. W. M. Chan with T. O. Olawumi, B. Anthony, M. A. Majid Jr. (Figure 5a) has network with B. Anthony, A. Romli, M. A. Majid (Figure 5a).

However, a separate attempt was made to explore the influential Indian authors in this domain. The authors like V. Aravamudhan, D. Kumar, I. Kumar, K. Mehta, S. Sharma, and R. Nagariya were found in the research domain with two articles (highest). Among them, the highest cited (citations 990 in Scopus) researcher is Prof. Divesh Kumar from MNIT Jaipur. In his recent article, he has suggested how to increase academic research motivations toward sustainable consumer behavior (Sheoran & Kumar, 2022).

Figure 6a and b shows the word cloud, TreeMap of most frequent words in this research domain. Table 3 shows the mostly used words, their occurrences, and frequency. Sustained development, sustainable practices, sustainability, environmental impact, human, environmental protection, recycling, and decision-making are mostly sensitized words in this research domain with different frequency range (138–18). So, environment practitioners, decision maker, and climate leaders had inculcated strategies like recycling, sustainable practices to protect the environment and humans, and mitigate the environmental impact to achieve SDGs. As per Ehrlich or IPAT equation, we know that with increasing population, the impact on the environment also increased. Figure 7 (software-generated) shows the trending topics in the domain of sustainable practices in business which needs further attention in research, policy imposing, and so on. This figure shows the trending research topic in the domain from 2005 to 2021. It entails that before UN SDGs, that is, during the period of MDGs, gender equality and child development were majorly focused in the business sustainability domain. The male–female–adult research trends gained momentum during 2011–2013 following the goal of social and gender equality proposed in MDGs. From 2015, the focus shifted toward overall sustainable development, environmental protection, and human. During 2019, the major focus was on sustainability. This shows while initially socio-economic factors were given more importance, in the

Table 2. The Top 10 Most Cited Publications.

S. No.	Title	Journal	Author	Total Citations	TC per Year	Normalized TC	First Author's Affiliation	Country	Year
1	An institutional theory perspective on sustainable practices across the dairy supply chain	*International Journal of Production Economics*	Glover J.L.	240	26.67	11.30	Loughborough University	United Kingdom	2014
2	Environmental factors in wood-fuel production: opportunities, risks, and criteria and indicators for sustainable practices	*Biomass and Bioenergy*	Lattimore B. Lattimore et al. (2009)	156	11.14	8.60	University of Toronto	Canada	2009
3	Sustainable Practices in Medicinal Chemistry: Current State and Future Directions	*Journal of Medicinal Chemistry*	Bryan MC	155	15.50	7.90	Genentech, Inc., 1 DNA Way	USA	2013
4	Sustainable Practices Social Theory and Climate Change—Book	Routledge	Shove E. Shove and Spurling (2013)	114	11.40	5.81	Lancaster University	UK	2013
5	Sustainable Practices for Landfill Design and Operation—Book	Springer	Townsend TG. Townsend et al. (2015)	86	10.75	7.49	University of Florida	USA	2015
6	Do Environmental Sustainable Practices of Organic Wine Suppliers Affect Consumers' Behavioral Intentions? The Moderating Role of Trust	*Cornell Hospitality Quarterly*	Bonn MA	84	12.00	6.36	Florida State University	USA	2015

(Table 2 continued)

(Table 2 continued)

S. No.	Title	Journal	Author	Total Citations	TC per Year	Normalized TC	First Author's Affiliation	Country	Year
7	Do environmentally sustainable practices make hotels more efficient? A study of major hotels in Sri Lanka	*Tourism Management*	Kularatne T.	81	20.25	7.61	Queensland University of Technology	Australia	2019
8	The role of supply chain leadership in the learning of sustainable practice: toward an integrated framework	*Journal of Cleaner Production*	Gosling J. Gosling et al. (2016)	77	11.00	5.83	University of Exeter Business School	UK	2016
9	Sustainable practices in the management of mining waste: A focus on the mineral resource	*Minerals Engineering*	Lèbre É. Lèbre et al. (2017)	72	12.00	5.18	University of Queensland, Australia	Australia	2017
10	Do ethical and sustainable practices matter? Effects of corporate citizenship on business performance in the hospitality industry	*International Journal of Contemporary Hospitality Management*	Chung-Jen Wang	61	6.78	2.87	MingDao University, Peetow, Taiwan	Taiwan	2014

Source: Bibliometric Analysis and Google Scholar.

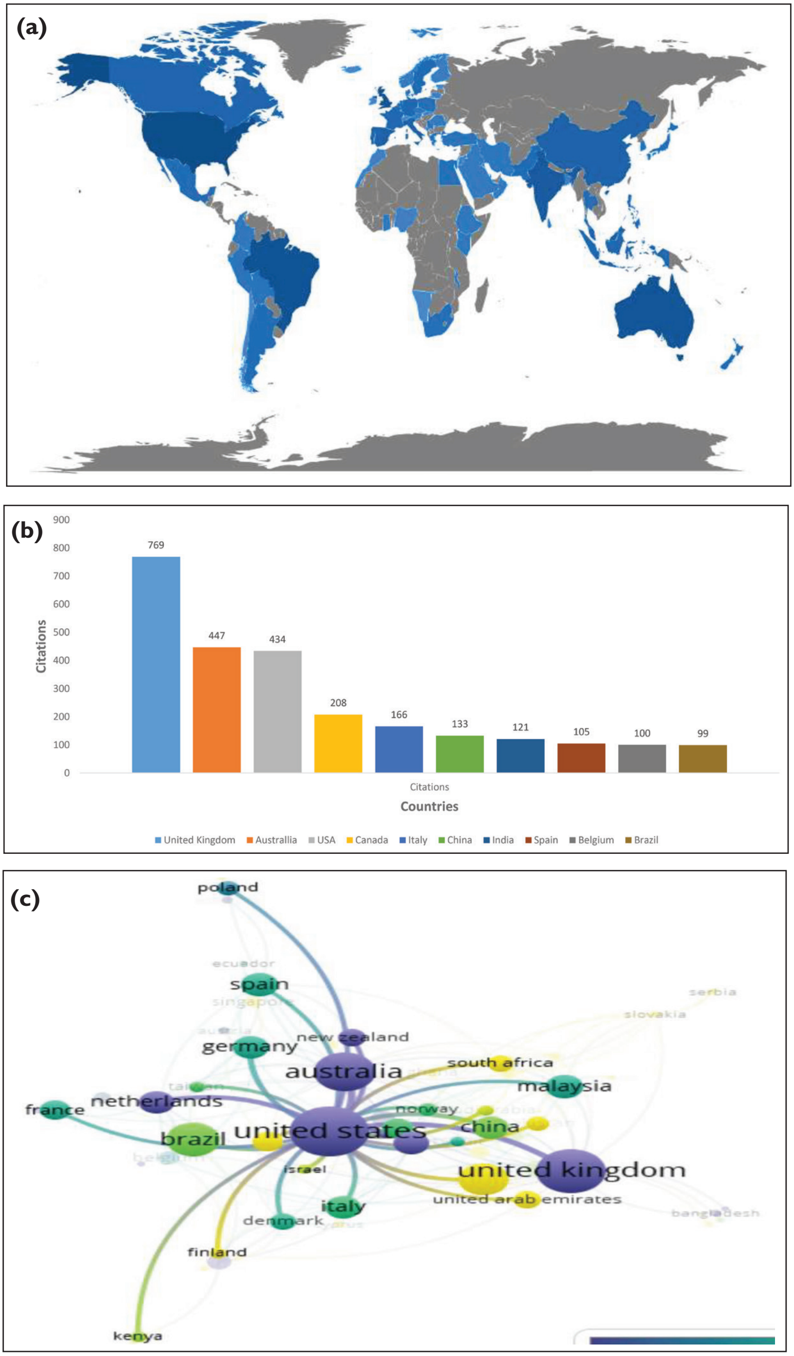

Figure 4. (a) Country Scientific Production in the Sustainability Domain. (b) Most Cited Countries in This Research Domain of Sustainability Practices. (c) Collaboration Network Between the Major Research Countries.

Source: (a) Scopus Database; (b) R-studio Analysis; (c) VOSviewer Analysis.

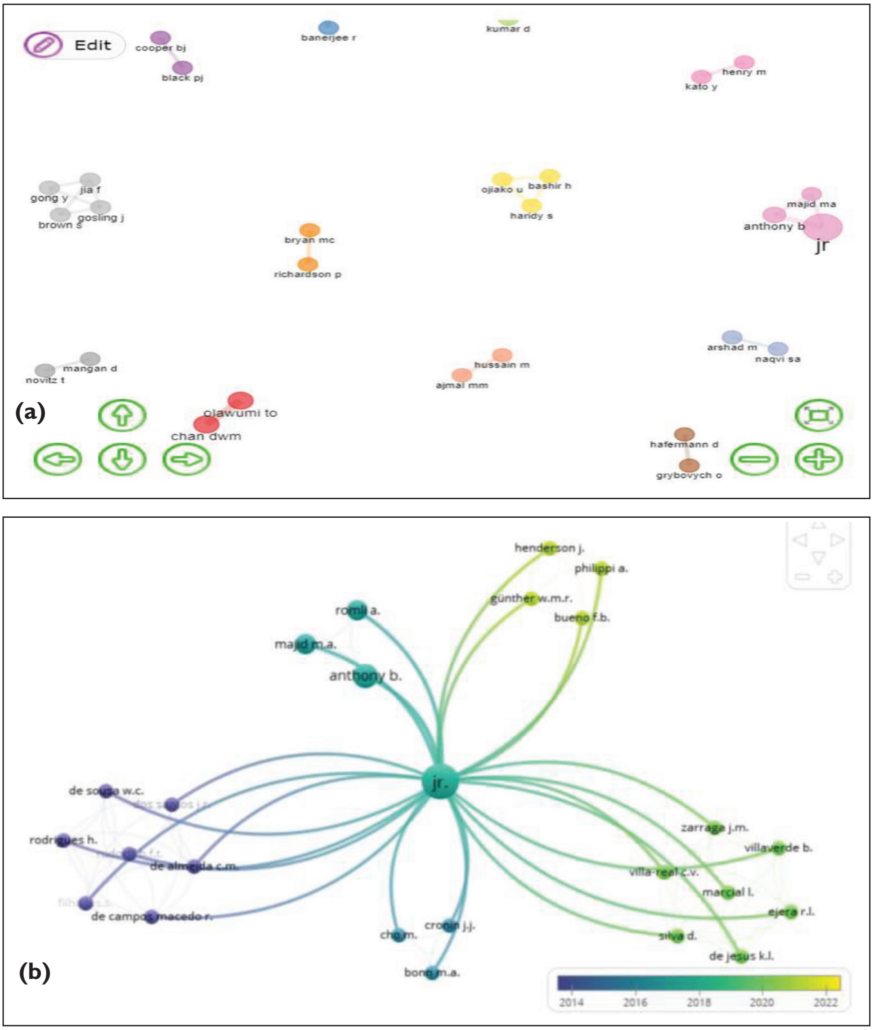

Figure 5. (a) The Collaboration Network Among Authors by Biblioshiny. (b) The Collaboration Network Among Authors by VOSviewer.

Source: (a) R-studio Analysis.

interim period emission-related studies came up which then led to the development of emission standards worldwide by nations. Now that recent years are focusing on sustainability issue, it implies that proper research avenues should be identified to develop robust firm-level policies.

Relevant News Analysis

In recent years, social media has evolved into a virtual space where people can express their concerns about the environment, health, and other matters of public

Figure 6. (a) Words Cloud. (b) TreeMap.

Source: (a) R-Studio Analysis; (b) R-Studio Analysis.

Table 3. Most Frequent Words and Occurrences.

Words	Occurrences
Sustainable development	138
Sustainable practices	112
Sustainability	66
Human	29
Article	27
Environmental impact	21
Humans	20
Environmental protection	19
Recycling	19
Decision-making	18

Source: Bibliometric Analysis.

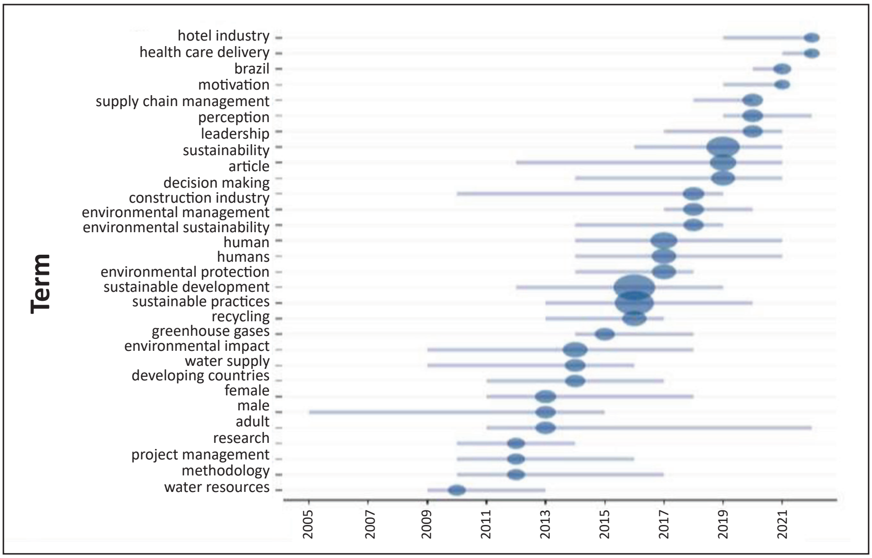

Figure 7. Trending Topics from This Research Study.

Source: R-studio Analysis.

Figure 8. Word Cloud from News Articles.

Source: R-studio Analysis.

interest. The social media platform most encourages the expression of people–media opinion, because it encourages honest dialogue between users and makes it possible in the most widely accessible way (Chae, 2015; Park et al., 2020). A Google Search was made on Google News using the keyword "sustainable

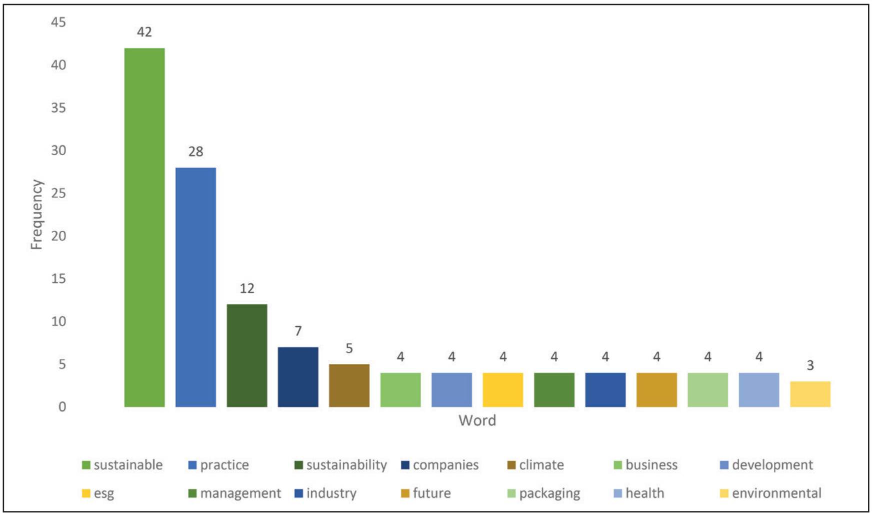

Figure 9. Word Frequency from News Articles.

Source: R-studio Analysis on News.

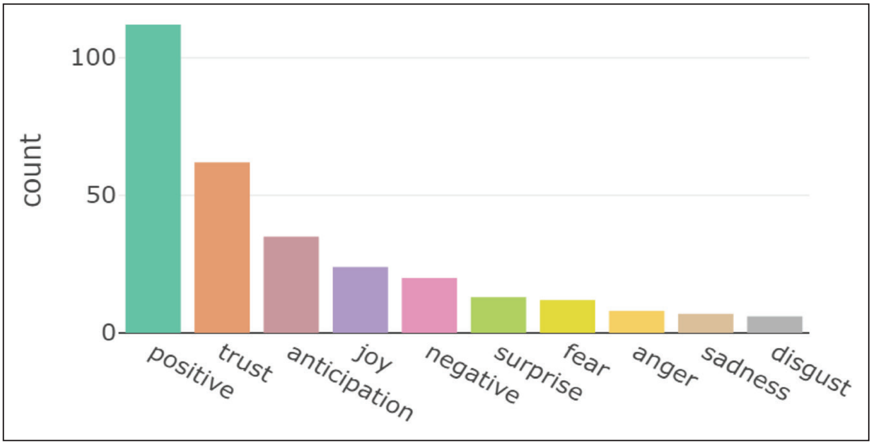

Figure 10. Emotion Type for Sustainable Practices.

practice." The search was made on May 30, 2022, using R studio. The search results were saved into .csv file and qualitatively analyzed through R studio. Analysis of the news articles showed the important of words cloud, their frequency, and their emotion on sustainable practice in business (Figures 8–10). Figures 8 and 9 show that climate, sustainable development, ESG, business organizations, and management were most used words in those news. Figure 8 shows that most people's emotion toward sustainable practice is positive and trustful. It entails that sustainable practice builds positive effect and trust among the system.

Policy Implications from Bibliometric and Sensitivity Analysis

This subsection focuses on the factors influencing sustainable practices boiling down from the analysis done above-bibliometric and sensitivity analysis. The SDG 12 (i.e., responsible consumption and production) aims for 5R resource utilization principle like reduce, reuse, repurpose, recycle, and refuse. The open loop of linear material management like take–make–waste should be redirected to close loop of circular material management using 5R's principle of resource utilization. The analysis from the bibliometric analysis and the sensitivity analysis above show that the developed nations also follow the circular material management of resources to achieve circular economy. This further leads to cost reduction and profit maximization with increase in productivity, that is, usage of a certain quantity of resources with minimum waste. Further climate investment for sustainable practices is extremely important nowadays at all business organizations. To achieve net zero carbon emission by 2070 (as promised in COP 26 at Glasgow), it is important to increase use of renewable energy rather than coal burning, prepare carbon sinks by green belts of trees, and so on. The policymakers need to focus in this direction more in developing countries mainly in most populated countries like India and China as these countries are major stakeholders for sustainability successfulness. The bibliometric analysis in Figure 7 shows that the sectors like hotel industry, health care delivery, supply chain management, leadership, construction industry, and project management in developing countries need to be focused for environmental sustainable practices, reuse, and recycling needs to be implemented for the resources (plastic, organic waste, and water resources) suitably rather than dumped in landfill or aquatic ecosystem; burning waste and increasing greenhouse gas emission or polluting water stream should be restricted. Further, the decision maker needs to motivate people in this direction by improving perception and giving visible incentives. Also, there were topics like human, adult, male, and female which reveal that human beings are major stakeholders in these sustainable practices. The sensitivity analysis shows that the organization's transparency toward sustainable practices leads to more trust and creates further awareness in general societies leading to sustainable consumption and improves human health standards. Sustainable consumption is an important factor influencing sustainable business practices. Thus, there is a nexus between human health and environmental pollution sustainability.

Conclusion and Recommendation

An analysis of the numerous research mentioned in the above sections serves as the foundation for this study's discourse. This study has made an effort to give a thorough analysis of the factors influencing sustainable practices by business organizations using bibliometric analysis and sensitivity analysis. Bibliometric analysis was performed using R studio and VOSviewer. Sensitivity analysis made use of the news contents understand the general awareness of sustainability and what influences sustainable practices. These analyses have been used in literature to raise researcher's, policymakers', and society's awareness of environmental issues.

Table 4. The Research Findings in This Study.

Research Questions	Findings
What has been the research trend in the domain of sustainable practices over the years?	In last 30 years, sharply increased from 2008 onward
What business sustainability strategy should India focus on based on gaps identified in bibliometric and sensitivity analyses?	Government's role • The government should create taxonomies that could help track business practices and prevent greenwashing. The BRSR Principle 6 disclosures should be made mandatory with a unified reporting structure for all organizations • The government might think of a single department in its office that assesses and rates these organizations in a particular economy to avoid illegal and unethical practices like bribe exchanges and false claims • As part of creating awareness, the government and policymakers need to emphasize the organization's capacity building. The policymakers may focus on using green technologies to produce and take up sustainable recycling and disposal practices. This would require mobilizing additional financial investments which is again an issue of concern for the government Business organization's role • Business organizations need to create a separate department on their property that assists them in resolving their environmental problems. The 3Rs of waste management—reduce, reuse, and recycling—need to be routinely explained to employees • To prepare staff for tackling important environmental challenges, organization leaders should schedule regular skill-training sessions or peer-to-peer group discussions and debates • Incentives and recognition should be given to employees who take initiative so that their actions can inspire other workers to follow suit Further scope of research Academic institutions to play a significant role in this approach by encouraging environmental education as a significant component of their curricula. The government, businesses, NGOs, and research institutes can all work together in a cooperative effort to promote pro-environmental practices. Future scope of research entails firm level study on greenwashing and strategies to circumvent such practices, accounting for Scope 3 emissions in disclosures along with details of Scope 1 and 2 emissions, use of AI in supply chain, and sustainable trade practices
Who are the most influential authors and from which countries? Which is the most cited article?	Glover et al. (2014) from the United Kingdom "An Institutional Theory perspective on sustainable practices across the dairy supply chain" with 240 citations on Scopus till date

Source: Bibliometric Analysis and Scopus.

The research shows that climate consciousness has been steadily increasing over time. The most cited research paper is on sustainable practices in the dairy supply chain by a researcher from the United Kingdom. The research findings are also tabulated in Table 4. Appropriate recommendations have been suggested for all the stakeholders for enhancing the environmental concerns of the people at the societal level from trending topics in the analysis. The analysis assists in identifying the gaps in research to assess business sustainability in India. It not only guides on developed countries' analysis trend that gives immense consideration to sustainable business but also identifies what needs to be focused by Indian businesses to attain business sustainability and hence its net zero target.

This study offers important recommendations for the implementation of environment-friendly/business sustainable policies for organizations in India. The government and policymakers need to critically brainstorm the required policy to impose on business organizations to achieve sustainability. To prevent greenwashing, the government should create taxonomies that could help track business practices. The BRSR Principle 6 disclosures should be made mandatory with a unified reporting structure for all organizations. Legitimate parameters should be identified for reporting and the convenient monitoring of these reports. The government might think of a single department in its office that assesses and rates these organizations in a particular economy to avoid illegal and unethical practices like bribe exchanges and false claims. As part of creating awareness, the government and policymakers need to emphasize the organization's capacity building. The policymakers may focus on using green technologies to produce and take up sustainable recycling and disposal practices. This would require mobilizing additional financial investments which is again an issue of concern for the government.

Nonetheless, it is not a one-sided work to be done by the government; the business enterprises are required to give more effort to ensure a sustainable environment with their business practices. This study recommends that businesses create a separate department on their property that assists them in resolving their environmental problems. The 3Rs of waste management—reduce, reuse, and recycling—need to be routinely explained to employees. Organizations can also work actively with NGOs engaged in the fields of sustainability and environmental protection to fulfill their corporate social obligations. Given that they prioritize environmental protection in addition to profit, this may increase the legitimacy of such organizations in the market. One employee's pro-environmental values can simply be shared with their peer group. By considering the pro-environmental ideals through deeds rather than verbal debates, one employee can readily transmit them to their peer group. To prepare staff for tackling important environmental challenges, organization leaders should schedule regular skill-training sessions. Additionally, incentives and recognition should be given to employees who take initiative so that their actions can inspire other workers to follow suit.

With net zero targets in place, stakeholders are conscious about rationally investing in sustainable, green projects. They have an interest in evaluating the organization's sustainability stance. For this reason, organizations must frequently communicate with them about their environmental reports and ESG score.

In order to instill a sense of environmental worries in the public's psyche, authorities should also levy environmental levies in their various states. Institutions at the national level should also make contributions in the form of high-caliber research projects that educate people about the negative effects of ecological degeneracy. On the basis of the analyses, this study consider academic institutions to play a significant role in this approach by encouraging environmental education as a significant component of their curricula. The government, businesses, NGOs, and research institutes can all work together in a cooperative effort to promote pro-environmental practices. Future scope of research entails firm level study on green washing and strategies to circumvent such practices. This study shows that substantial research scope exists in studying sustainable supply chains in India. Different aspects of sustainability could be focused in sectors like waste management, electric vehicle manufacturing, agriculture, sourcing critical metals. Studies on governmental sourcing of funds could add research avenues to create sustainable environment in India.

From the sustainability consciousness analysis among employees, the study yields valuable conclusions. Businesses that embrace sustainability can reduce risks, add value for stakeholders, and forward the objectives of sustainable development. The managers who are responsible for developing a culture that supports sustainability values would find the green practices useful.

To reduce maximum carbon emission from supply chain (Scope 3 source rather than Scope 1 and 2), the MSMEs are required to be made aware about the importance and accountability of carbon emission, which is a crucial parameter in ESG disclosure yet not a focused research topic in the literature. The reverse supply chain is also important to implement through artificial intelligence, which enables to reduce spoilage of many inventory items. In conclusion, research from international and Indian publications shows that the significance of sustainable business practices is cross-border. Therefore, sustainable trade practices also need to be taken care of, which paves way for another avenue of research. The study's conclusions highlight how urgent it is to integrate sustainability into corporate decision-making procedures in order to promote a more just, resilient, and sustainable future for everybody.

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Article

Motivations to Adopt Solar Energy Systems: A Literature Review Using TCCM Framework

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Abstract

Increased awareness about environmental conservation and global well-being has given way to many initiatives in renewable energy. Hydro, wind, tidal, geothermal, biomass, and solar are the main forms of renewable energy. Solar energy has the largest share of renewable energy and is rapidly increasing because it is feasible and competitive. Many studies have been undertaken to understand the adoption and diffusion of solar energy. This article is a systematic literature review using the TCCM (Theory, Context, Characteristics, Methods) model. It reviewed 95 studies (from 2000 to mid-2023) indexed in top journals on small solar energy installations, primarily in the residential sector. This study discussed well-established product adoption theories, which helped identify various drivers and facilitators affecting solar energy adoption, such as sociocultural, technological, economic, market, and policy. The authors tried to map the facilitators with countries based on income groups, and it was found that the characteristics of solar adoption are similar among countries in an income group.

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Sustainable development, renewable energy, solar photovoltaic systems, diffusion models, solar energy adoption, TCCM review

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Introduction

The adoption of renewable energy is on the rise. The United Nations Sustainable Development Goals (UNSDG) emphasize exploring renewable energy sources to ensure clean and affordable energy for all by 2030 (UNSDG, 2015). Past research shows a consistent increase in the share of renewable energy sources, especially wind and solar energy, in the energy mix (Kajikawa et al., 2008). Based on outcomes of COP26 deliberations, Adekoya et al. (2023) found that reduction in coal consumption and economic development find a trade-off, and hence, policy designs for low-carbon technologies should be an optimized energy mix of both renewable and nonrenewable energy sources. Successful implementation of these policies requires rampant adoption and diffusion of renewable energy sources (RES) at macro as well as micro levels.

Large-scale renewable energy installations are already growing exponentially in the form of solar farms, wind farms, and floating solar, to name a few (Alipour et al., 2021). However, there is considerable potential for small-scale installations in the residential sector. Rooftop solar energy is the most prominent of the existing RES (Alipour et al., 2021). This study tries to understand residential consumers' attitudes and preferences toward rooftop solar energy systems, primarily solar photovoltaic (PV) and solar water heating systems. Although many studies are available on the adoption and diffusion of solar products (Ahmed et al., 2022; Faiers & Neame, 2006; Irfan et al., 2021; Karakaya et al., 2014; Palm, 2020; Pathania et al., 2017; Wolske et al., 2017; Zulu et al., 2022), little has been covered regarding context-specific motivating factors.

This study fills this gap and provides a comprehensive list of context-specific motivating factors for adopting solar energy. The motivations to adopt renewable energy are different and context-specific. For instance, pro-environmental attitude in high-income economies motivates people to use solar energy at a higher cost (Walters et al., 2018; Wolske et al., 2017). In contrast, the cost is a primary concern in low-income economies where subsidies are an effective intervention to promote solar products (Cheam et al., 2021; Qureshi et al., 2017). The availability of institutional support, microfinance facilities, and community participation helps in the adoption of solar products. Creating awareness about the benefits of solar power over conventional power also helps in higher diffusion (Kalish, 1985). The availability of electricity helps reduce the dependence on unreliable grids, improving the quality of life in rural areas (Pasten & Santamarina, 2012).

This article is a systematic literature review that dives deep into finding motivators or drivers that could help diffuse this technology in various countries and regions and is based on the TCCM (Theoretical concepts, Contexts, Characteristics, and Methodologies) framework propounded by Paul & Rosado-Serrano (2019). As per Paul and Criado (2020), literature reviews help expand the conceptual, thematic, and methodological domains of the subject being studied. This study is a framework-based review that considers the widely accepted theoretical models and methodologies in different geographical contexts and helps in understanding the various products as well as individual characteristics that are instrumental in the adoption and diffusion of solar energy products. Review of available literature is relevant as well as important since it gives insights on multiple impact factors such as social, geographical, politico-legal, and environmental ones, affecting solar energy adoption. These factors when studied in detail in one context may help in identification of problems in another one and also aid in predictive modeling.

As discussed above, the study contributes to the domain of renewable energy adoption in that it tries to identify the most used approaches and organize them for analyzing and understanding diffusion patterns. This will help policymakers in framing inclusive policies more efficiently and accurately. The study also explored the scalability and transferability of models adopted from one country/region to other countries/regions. The study aims to answer the following research questions (RQ):

RQ1: How has the adoption of solar products in the residential context become important over time?

RQ2: Which articles, researchers, and countries are working for the adoption of solar products?

RQ3: Which theories, characteristics, context, and methodologies are essential for the adoption and diffusion of solar products?

The study reviewed various research articles and articles to fulfill the desired objectives and identify the research gaps in this domain. Accordingly, our article is divided into nine sections. The second section discussed the methodology; the third section presented the theoretical frameworks (T of TCCM framework); the fourth section classified studies in the Context (first C of TCCM framework); the fifth section identified the Characteristics (second C of TCCM framework) of the literature; the sixth section dealt with the Methods (M of TCCM framework) used in previous studies. General discussions about the study are dealt with in the seventh section, and implications are discussed in the eighth section. Finally, the ninth section concludes the study with the limitations of the study and possible future research.

Methodology

To conduct a systematic review, good impact factor journals and established databases, like Scopus, Web of Science, Science Direct, JSTOR, Taylor and Francis, Google Scholar, EBSCO, ProQuest, and Elsevier, were searched. Also, citations, bibliography, abstracts, and related keywords like adoption, diffusion, solar energy, renewable energy, solar water heater, PV systems, solar products, motivating factors, barriers, consumer behavior toward clean energy, innovation, technology acceptance, sustainability, antecedents, and frameworks were looked for in various combinations. The search phrase "motivating factors for solar energy systems" was considered from 2000 to mid-2023. The articles from low-impact factor journals were excluded from the review. A flowchart depicting the search process steps and search criteria to collect data is shown in Figure 1. The data collection process used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework. The selected studies identified dependent and independent variables that could prove beneficial to marketers who can utilize them in the context and given situations. Future researchers can also use these variables to understand consumer behavior concerning the adoption of solar rooftop systems.

Iskin et al (2013) observed that an increased number of articles on the above topic could be found only after the year 2000 because of increased crude oil prices. Hence, the search was narrowed down to the years 2000 to mid-2023 and a total of 95 articles were selected. Some articles described the development of various theoretical frameworks before 2000. The distribution of articles (including reports from various sources) up to mid-2023 is shown in Figure 2.

The articles from peer-reviewed journals were analyzed to understand the enabling agents for scaling up solar power usage. Based on the number of articles published, the top journals were Energy Policy, Renewable and Sustainable Energy Reviews, Renewable Energy and Energy Research & Social Science (Table 1).

The research articles included empirical articles, reports, and existing reviews, and a snowball methodology was adopted in some cases of cited literature. Also, some articles were studied to understand the framework (TCCM) on which our study is based (Paul & Rosado, 2019; Singh & Dhir, 2019).

The World Bank's WDI (World Development Index) was used to classify countries according to their gross national income (GNI). Countries are classified as low-income, lower-middle income, upper-middle income, and high-income groups. This context is even more important because, in most studies dealing with the adoption of solar products, income and the cost of the equipment are prominently highlighted as significant variables.

Searching various databases yielded quite a few review articles based on different frameworks. However, no study on solar energy adoption was found regarding the TCCM model. Table 2 summarizes prominent studies in this area, followed by a comprehensive analysis of this article, as given in Figure 3.

What Is the TCCM Framework?

TCCM is an acronym for Theory, Context, Characteristics, and Methodology. The TCCM framework is a comprehensive model that provides a structured approach to synthesizing, analyzing, and understanding literature. It is frequently used in systematic literature reviews.

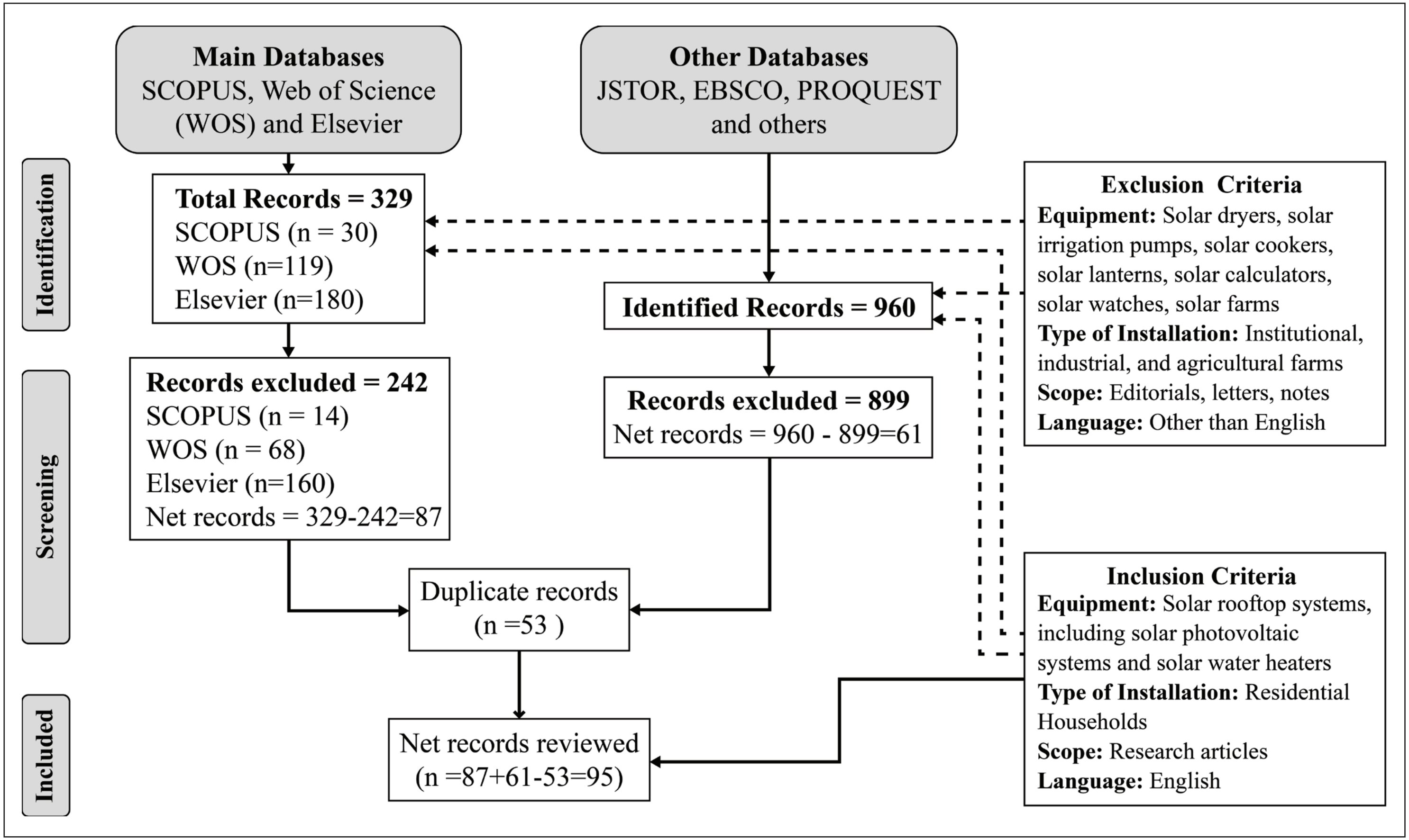

Figure 1. Flowchart of the Study (Using PRISMA).

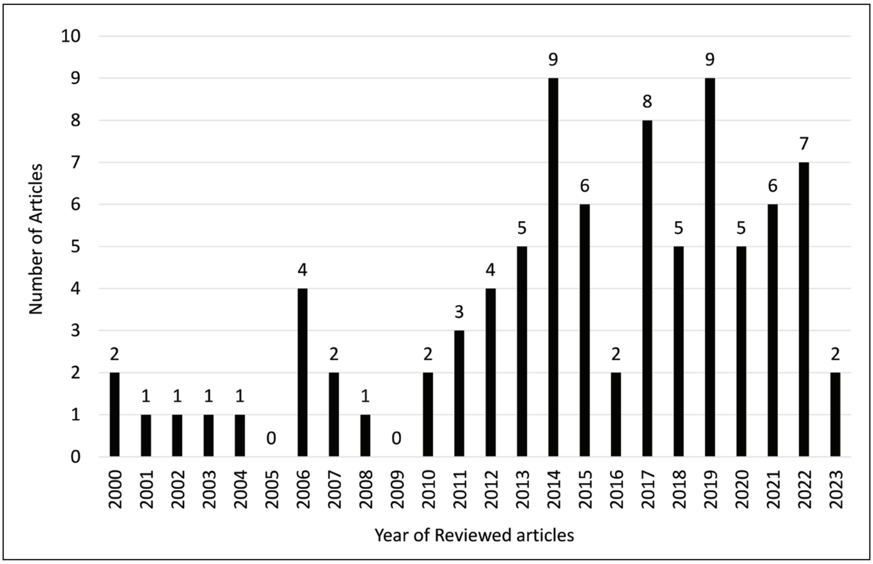

Figure 2. Reviewed Publications (2000-mid-2023).

Table 1. Top Publishing Journals.

Name of Journal	# of Articles	%	Cumulative %
Energy Policy	9	9.47%	9.47%
Renewable and Sustainable Energy Reviews	7	7.37%	16.84%
Renewable Energy	7	7.37%	24.21%
Energy Research & Social Science	4	4.21%	28.42%
Technological Forecasting and Social Change	3	3.16%	31.58%
Management Science	3	3.16%	34.73%
Smart and Sustainable Built Environment	3	3.16%	37.89%
Sustainability	3	3.16%	41.05%
Journal of Cleaner Production	3	3.16%	44.21%
MIS Quarterly	3	3.16%	47.36%
Research Policy	2	2.11%	49.47%
International Marketing Review	2	2.11%	51.58%
IIMS Journal of Management Science	2	2.11%	53.68%
Other journals (one article from 30 journals each)	30	31.58%	85.26%
Others (books, conference articles)	14	14.74%	100.00
Total	**95**	**100.00**	

Reviews based on the TCCM framework can be done in four steps:

1) Identification of relevant and dominant **Theories**
2) Identifying and evaluating **Contextual** factors
3) Analyzing the **Characteristics** of the existing studies
4) Reviewing the **Methodologies** used in the relevant studies.

Table 2. Important Studies for Residential Solar Adoption.

Studies	Research Questions	Findings
Ahmed et al. (2022)	What determinants influence the consumer's adoption of solar (PV) systems in developing countries?	Perceived usefulness, perceived ease-of-use, compatibility, observability, and perceived trust. Somalia and Pakistan were compared, and both countries have similar solar photo voltaic (SPV) adoption patterns.
Alizadeh et al. (2019)	Understand the decision-making framework in Iran as far as RE policy is concerned.	A consolidated approach uses benefits, opportunity costs, security, risks, technology, economy, energy vulnerability, global effects, and human well-being. Solar energy tops the benefits and opportunity parameters and needs more focus while designing RE policies.
Arroyo-López & Carrete (2019)	To design and empirically evaluate a model to stimulate the intentions of solar energy users.	Demographics, environmental consciousness, and perceived risk associated with solar PV were designated goal triggers for green energy adoption. High socioeconomic status moderated the intention to adopt solar PV.
Balcombe et al. (2014)	To understand the motivating factors in the uptake of microgeneration technologies.	Motivators include earning money from installation, feed-in tariff, energy independence, self-sufficiency, and protection against future high energy costs. Creating awareness is essential in increasing the uptake of alternative energy resources.
Bang et al. (2000)	To examine the relationships between consumer concern for the environment, consumer knowledge, and beliefs about renewable energy, and consumer willingness to pay more for renewable energy.	Beliefs, concerns, and knowledge were significantly positively related to consumer willingness to pay more for RE. However, many people are still not aware of RE technologies but are ready to support their environmental concerns. So, building up positive belief systems and making people informed should be the main aim of RE marketers.
Bao et al. (2020)	Find out the attributes of solar PV systems and installers that are important to a homeowner. To understand homeowner's preferences for SPV based on demographics. Understand gaps in stated preferences and actual experiences	Cost savings, system warranty and reliability, design level attributes, installer's reliability, and customer-installer collaboration are essential considerations.
Best et al. (2019)	To study economic, social, and environmental factors influencing actual uptake and the intention to install solar PV.	Wealth dimensions, property space and rights, and environmental preferences influence solar uptake. Energy-poor people are more inclined to adopt. Government subsidies and low-cost financing schemes may also increase adoption.

Blenkinsopp et al. (2013)	Assess energy usage (types of primary fuels used, problems faced in their usage). Perception of RETs and socioeconomic factors affecting uptake of RE in rural communities.	Alternative fuel sources are accepted, and people switch if they are cost-effective, environmentally friendly, reliable, and safe.
Etongo & Naidu (2022)	To understand the factors influencing solar PV uptake.	Access to credit, monthly household income, energy security, and environmental benefits are the motivating factors; cheap grid electricity, existing loans, high upfront costs, and extended payback periods are the barriers to the adoption of solar PV.
Guta (2018)	To study the motivational factors for adopting solar panels.	Income, education, household characteristics, and gender are important factors, and policies should be designed by government and private players alike.
Korcaj (2015)	To explore motives and purchase intentions of homeowners relevant to solar PV systems.	Purchase intention is predicted by subjective norms (i.e., peer behavior and expectations) and attitude toward PV (based on aspirations of social status, autonomy, and financial gains). Costs, efforts, and risks associated with PV systems were not favorable to attitude.
Rai et al. (2016)	Overcoming barriers and uncertainties in the adoption of residential solar PV.	Information gathering process; peer effects; role of installers; and factors driving the choice of outright purchase versus third party ownership (e.g., leasing) modes of adoption; installers and peers play an important role along with expected financial returns and concerns about operations and maintenance.
Vasseur & Kemp (2015)	Understand the motivating factors for adopting solar PV. Understand the barriers to the adoption of solar PV.	Savings on electricity bills, cost efficiency, and self-sufficiency are primary motivators; non-ownership, type of building being an apartment, high costs, solar panels being less efficient, and low-yield energy sources are significant barriers in the adoption of solar PV.

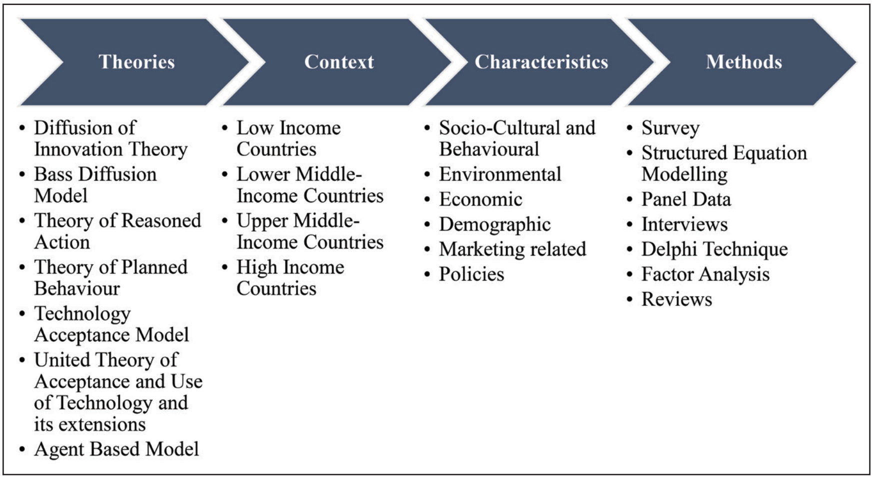

Figure 3. Analysis of our Study.

Though many review techniques are available, this framework's comprehensiveness and easy-to-understand approach made us use it for our study. Further, very few authors have tried to explore this methodology of reviewing residential solar energy adoption. A clear segregation of theories, context, and methods helps synthesize and evaluate existing literature more easily (Paul & Criado, 2020).

Theory (T)

Various theories have been developed over the years on people's attitudes toward adopting newer ideas, technology, or innovations and how these innovations diffuse through different stages of adoption. This section will explore some commonly applied theories on the diffusion of solar products. The scope of our review is limited to solar PV, solar water heaters, and solar home systems. Solar energy systems are still evolving and remain in the realm of innovation and a niche market (Sharif & Mithila, 2013).

Various studies covering adoption and diffusion of solar energy products have referred to the Diffusion of Innovation Theory (DOI/IDT), given by Rogers (1962). According to the theory of diffusion, a product or an idea gets adopted over time socially due to its innovative attributes such as relative advantage, observability, trialability, compatibility with existing practices, and complexity or simplicity for ease of use. The theory further explains that innovation gets adopted and diffused in stages, which include knowledge or awareness spread among individuals through various communication channels, persuasion levels, the decision to adopt or not adopt after weighing the given attributes, actual adoption or implementation, and finally continuing with the given product or innovation. This innovation diffusion theory has been in use for years in different domains. However, a lack of cohesion, dynamism, and flexibility along with one-directional information flow has led to modified versions of this theory and the emergence of many other concepts like Collaborative Innovation Networks (CoIN), Technology Acceptance Models, and other variants.

Bass diffusion model gives a mathematical equation to understand the adoption process of a product in a population. Bass (1969) gave a diffusion theory based on the concept that an innovative product or idea gets adopted and diffused through two communication channels: mass media and word-of-mouth. The model categorized adopters as external influences who follow mass media and called them innovators. The other category, internal influences, follows word-of-mouth and is called Imitators (Mahajan et al., 1990). However, the original model did not consider factors like seasonality, which led to many variants later. These variants were classified as Fundamental and Flexible Diffusion models by Mahajan and Peterson (1985) and Time and Space diffusion models (Rao & Kishore, 2010).

The theory of reasoned action (TRA) by Fishbein and Ajzen (1977) is particularly important in understanding consumer purchase behavior. The authors divided the belief antecedents into behavioral (attitude toward the behavior) and normative (perceived social pressure associated with the behavior) sets. The authors found that behavioral intentions are one of the best predictors of consumer behavior and can be utilized in designing product and market development strategies. Ajzen (1991) gave the theory of planned behavior, which explains that consumers who intend to adopt a product are more likely to purchase and use it in the future. Another significant contribution is made by Davis's Technology Acceptance Model (TAM) and its extensions in UTAUT and UTAUT2. Table 3 gives an overview of various theoretical frameworks used in the study.

Besides referring to the theoretical frameworks for understanding the conceptual and historical evolution of the adoption and diffusion process of technological innovations, it was very important to understand how various studies contributed to identifying study variables and attaining research objectives. An easier and more understandable method was to analyze the existing review articles. Although there is a slow growth of review studies on solar adoption (Rai et al., 2016), various studies have observed that solar PV adoption is increasing among residential consumers. Table 4 shows some important review studies pertinent to our topic of residential adoption of solar energy systems.

Context (C)

Various studies show that environmental concerns primarily trigger the acceptance of solar power in the case of economically developed countries. Economics is secondary to them (Schelly & Letzelter, 2020). On the other hand, low awareness levels, lack of funds, and low market accessibility result in low diffusion levels of solar products in developing countries (Venkateswaran et al., 2018). One of the main characteristics of low-income countries about energy consumption patterns is the rural-urban divide, wherein rural households mostly use energy to light up their homes and cook (Haselip et al., 2011; Kabir et al., 2017; Komatsu et al.,

Table 3. Salient Theoretical Frameworks Used in the Study.

Theoretical Models	# of Citations	Identified Factors	Findings	Selected Studies Based on the Model
Diffusion of Innovation (DOI) (Rogers, 1962); Rogers et al. (2014)	154523	Relative advantage, compatibility, complexity, observability, trialability	Innovation gets adopted and diffused in stages—Knowledge, communication systems, persuasion, and adoption decision followed by continuation decision.	Claudy et al. (2010); Pathania et al. (2017); Kapoor et al. (2020); Bao et al. (2019); Simpson and Clifton (2017)
Bass Model of Diffusion (Bass, 1969)	11484	External influence, internal influence	Ordinary least square method was used to study interactions between potential (imitators) and existing adopters (innovators)	Horsky and Simon (1983); Mahajan et al. (1990)
Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB) (Fishbein & Ajzen, 1977)	82538	Attitudes and subjective norms; perceived behavioral control	Attitudes, beliefs, and social norms lead to behavioral intentions, one of the best predictors of consumer behavior.	Bang et al. (2000); Korcaj et al. (2015)
Technology Acceptance Model (Davis, 1989) and extended TAM (Venkatesh & Davis, 2000)	82958 30165	Perceived usefulness and perceived ease-of-use	Purchase intention and user acceptance are predicted by perceived usefulness and ease of use.	Ahmed et al. (2022); Billanes & Enevoldsen (2021); Bouaguel & Alsulimani (2022); Yang et al. (2021)
UTAUT (Venkatesh et al., 2003) and UTAUT2 (Venkatesh et al., 2012)	48572 14906	Performance expectancy, effort expectancy, social influence, facilitating Conditions, hedonistic motivation, habit.	Identified factors affect the user intentions to adopt technology and this further decides the actual behavior; age, gender, experience, and voluntariness of use act as moderating variables.	Aggarwal et al. (2019); Aravindan et al. (2022); Saleh et al. (2014)
ABM (Gilbert, 2007)		Attributes and behaviors of decision-makers or a set of agents, their interrelationships and interactions, and the environment in which these agents operate.	Individual-based models; multi-agents model. Geography-based models	Rai & Allada (2002); Palmer et al. (2015); Zhao et al. (2011); Palmer et al. (2015); Rai & Robinson (2015); Zhang et al. (2022)

Table 4. Review Studies Referred to in our Article.

Study	Title of the Study	Particulars
Alipour et al. (2021)	Residential solar PV adoption behavior: End-to-end review of theories, methods, and approaches.	One hundred ninety-nine studies suggest that 36 intervention variables are associated with 13 behavioral theories in residential uptake of solar PV technology.
Billanes & Enevoldsen (2021)	A critical analysis of ten influential factors to energy technology Acceptance and adoption.	Fifty-four (54) relevant studies of TAM applications to various technologies across many countries between 2011 and 2020
Fauzi et al. (2023)	Residential rooftop solar panel adoption behavior: Bibliometric analysis of the past and future trends.	Co-citation and co-word analysis were done on 564 publications from the Web of Science.
Iskin et al. (2013)	Exploring the adoption of alternative energy technologies: A literature review.	One hundred seventy-three articles were reviewed from 1975 onward.
Schulte et al. (2022)	A meta-analysis of residential PV adoption: the important role of perceived benefits, intentions and antecedents in solar energy acceptance.	A meta-analytical structural equation modeling (MASEM) approach was applied to 110 studies.

2011; Tigabu, 2017; Venkateswaran et al., 2018) and the urban population uses the electricity primarily for heating, space cooling, and running other appliances.

Hence, models used in developed countries should not be followed mindlessly in developing countries because their issues regarding social, economic, and cultural setups are pretty different (Painuly, 2001). Gurtu and Goswami (2020) observed that energy consumption patterns vary in the different stages of economic development.

Further, developing countries are in a transitional phase of transforming from an energy-poor state to an energy-sufficient one, which calls for dynamic and flexible models that can be adapted as per the country's socio-economic indicators. Policies like feed-in tariffs, subsidy plans, and increasing electricity costs can also help in energy transitions. As per a report on the policy on renewable energy, RE growth drivers are classified into five dimensions, namely, resources (availability vs. potential vs. accessible), policy (regulatory frameworks, targets, and enabling mechanisms), economic (competitive advantage of RE vs. traditional resources of energy, cost factors, funding, and investments), and technical (grid capability) (Po, 2014).

Given the above, some studies were tabulated in Tables 5 to 8. These mentioned driving factors in enabling solar adoption in countries classified as lower-income (Table 5), lower-middle-income (Table 6), upper-middle-income (Table 7), and high-income group countries (Table 8) according to their per capita GNI starting July 1, 2021, as per World Bank (Hamadeh et al., blogpost, World Bank, 2022).

Table 5. Factors for Solar Adoption in Low-income Countries (less than $1036).

Author (Year of Publication)	Context (Geographical Location)	Outcome of the Study
Kim et al. (2014)	Korea	Benefits, trust, and system quality determine public attitude toward solar products, and satisfaction and public attitude give way to public intention to use solar technologies.
Guta (2018)	Ethiopia	Household income and the education level of the family head and spouse positively affect the adoption rates; poverty reduction policies play a significant role in promoting household uptake of solar energy.

Table 6. Factors for Solar Adoption in Lower-middle-income Countries ($1036–$4046).

Author (Year of Publication)	Context (Geographical Location)	Outcome of the Study
Blenkinsopp et al. (2013)	India	Community acceptance for solar energy as an alternate fuel for lighting and cooking primarily. Cost, ease of use, and reliability are significant factors in favor of solar adoption.
Macabebe et al. (2016)	Philippines	Community participation, capacity building at the local level, training to community members, and larger distances of dwellings from the grid lead to higher adoption rates.
Khandker et al. (2014)	Bangladesh	Microcredit financing schemes, the health hazards of kerosene and paraffin lamps, improved quality of life, and women's empowerment are primary motivators for adopting solar home systems.
Jayaweera (2018)	Sri Lanka	Large homes, highly educated middle-aged residents, and retirees are more likely to be early adopters; policies incentivizing initial costs and education may increase adoption rates.
Qureshi et al. (2017)	Pakistan	The main drivers of the adoption of solar PV are the availability of solar energy systems in local markets, their environmental friendliness, and high energy prices followed by grid power shortages.
Ellegård et al. (2004)	Zambia	The advantages of a small solar home system outweigh its service cost or subscription fee (entertainment, longer study hours even at night, no risk of theft); hence, the rural people willingly pay for solar energy systems though they are not the owners (lack of affordability to own the system) but pay a little fee to the providing companies.

Table 7. Factors for Solar Adoption in Upper-Middle-Income Countries ($4046–$12535).

Author (Year of Publication)	Context (Geographical Location)	Outcome of the Study
Alizadeh et al. (2019)	Iran	Technology, economy, energy vulnerability, security, global effects, and human well-being were considered major dimensions of adopting RES.
Arroyo & Carrete (2019)	Mexico	High socio-economic levels are the prominent goal triggers for individuals' purchase intentions of green technology, and those with medium levels are motivated by the economic benefits of green energy. Decreasing the costs and encouraging community projects are recommended.

Table 8. Factors for Solar Adoption in High-Income Countries ($12535 or More).

Author (Year of Publication)	Context (Geographical Location)	Outcome of the Study
Klaus et al. (2006)	Japan, Germany, the US, Switzerland	Higher government interventions, such as direct subsidies, low-interest loans, feed-in tariffs, and buy-back rates, led to the diffusion and penetration of solar PV.
Zhang et al. (2022)	Singapore	Policy measures like subsidy strategies and collective network development help in increasing solar uptake among residential customers

Characteristics (C)

Characteristics (second C of the TCCM framework) specify the variables, features, and dimensions studied while analyzing a topic of interest. In our article, these refer to various variables or antecedents at a consumer or household level leading to the adoption and diffusion of sustainable products, especially solar panels. These refer to what has already been explored and hence pave the way to what can be further explored. Table 9 lists dependent and independent variables and mediating and moderating variables observed through various studies included in this review.

Methods (M)

Methods (M in TCCM framework) refer to research approaches like data collection methods and data analytical techniques used to research a topic of interest. Table 10 discusses methods used in some of the studies included in our article.

Table 9. Characteristics (Variables) Identified Through the Studies.

Studies	Antecedents/Characteristics	Dependent Variable	Mediating/Moderating Variable(s)/Covariates
Aggarwal et al. (2019)	Environmental concerns, social beliefs, hedonic motivation, performance expectancy, price value, self-efficacy, and effort expectancy.	Actual behavior	Purchase intent (mediating), awareness (Moderating)
Ahmed et al. (2022)	Perceived usefulness, perceived ease-of-use, compatibility, observability, and perceived trust.	Purchase intention	Attitude
Ali & Yadav (2019)	Perceived usefulness, perceived ease-of-use, subjective norms, perceived behavioral control, awareness level, and cost.	Consumer intention to use solar rooftops	Not available
Alizadeh et al. (2019)	Technology, economy, energy vulnerability, security, global effects, and human well-being.	RE adoption	Not available
Arroyo-López & Carrete (2019)	Demographics, environmental consciousness, and perceived risk associated with solar PV.	Purchase intentions	Socioeconomic status (moderating)
Balcombe et al. (2014)	Environmental benefit, feed-in-tariff, earning money from installation, hedging against future high energy costs, energy independence, and self-sufficiency	Adoption	Demographics (Covariates)
Bekti et al. (2022)	Performance expectancy, effort expectancy, social influence, hedonistic motivation, price value, facilitating conditions	Behavioral intention	Attitude to use, perceived behavioral control
Best et al. (2019)	Household characteristics, environmental preferences, energy poverty, subsidies	Solar PV uptake and intention to install	Household electricity expenditure (explanatory)
Blenkinsopp et al. (2013)	Cost, ease of use, and reliability of solar products.	Community acceptance	Not Available
Bouaguel & Alsulimani (2022)	Perceived usefulness and perceived ease of use	User behavior	Attitude
Cheam et al. (2021)	Knowledge, environmentalism, cost, and personal innovativeness	Intention to adopt	Perceived ease of use, perceived usefulness
Claudy et al. (2010)	Sociodemographic variables (age, gender, household size, social class, region)	Awareness	Not Available

(Table 9 continued)

Etongo & Naidu (2022)	Demographics, access to credit, cost-saving, energy security, and environmentally friendly perceptions	Adoption	Not Available
Guta (2018)	Household income and education levels of family head and spouse; poverty reduction policies	Adoption	Not Available
Jayaweera (2018)	Large homes, highly educated middle-aged residents and retirees, policies incentivizing the initial costs	Adoption	Not Available
Khandker et al. (2014)	Microcredit financing schemes; health hazards of kerosene and paraffin lamps; improved quality of life; women empowerment	Adoption	Not Available
Kim et al. (2014)	Benefits, trust, system quality, satisfaction	Public attitude	Not Available
Korcaj et al. (2015)	Environment benefits, price, policy, infrastructure, incentives, knowledge of the subject matter, and the social context	Purchase intention	Not available
Macabebe et al. (2016)	Community participation, capacity building at the local level, training to community members, larger distances of dwellings from the grid	Adoption	Not available
Vasseur & Kemp (2015)	The perceived relative advantage of the technology, the complexity of the innovation, social influence, and knowledge of grants and costs	Adoption	Social influence and knowledge of grants and costs (explanatory)
Yang et al. (2021)	Perceived usefulness, perceived ease of use, environmental awareness, perceived affordability	Intention to use	Attitude
Zulu et al. (2022)	Attitude, trust, benefits, and subjective norms, perceived behavioral control	Purchase intention	Attitude

Table 10. Research Methods Used in Different Studies.

Studies	Methods
Aggarwal et al. (2019)	Structured equation modeling
Ahmed et al. (2022)	Structured equation modeling
Alizadeh et al. (2019)	The hybrid MCDM (Multi-Criteria Decision Making) and Decision Analysis model, BOCR (Benefits, Opportunities, Cost and Risk) model, and ANP (Analytic Network Process) model were combined.
Arroyo-López & Carrete (2019)	Goal framing theory
Balcombe et al. (2014)	Qualitative (interview based on best-worst scaling method)
Bang et al. (2000)	Mail survey
Bao et al. (2020)	Discrete choice theory
Best et al. (2019)	Survey and secondary data from statistical surveys by the Australian government
Blenkinsopp et al. (2013)	Survey method
Bouaguel & Alsulimani (2022)	Online survey
Cheam et al. (2021)	Survey using TAM
Claudy et al. (2010)	Logistic regression
Ellegård et al. (2004)	Case study
Etongo & Naidu (2022)	Stratified sampling survey, logistic regression, and descriptive statistics
Guta (2018)	Logit regression
Jayaweera (2018)	Zero-inflated negative binomial regression model (ZINBM)
Khandker et al. (2014)	Propensity score matching (PSM) technique; probit-logit model; p-score weighted regression technique
Kim et al. (2014)	Structured equation modeling
Klaus et al. (2006)	Theoretical frameworks, case studies, reviews, policy analysis, innovation economics; integrated model for lead markets
Korcaj et al. (2015)	Online survey
Macabebe et al. (2016)	Case study
Qureshi et al. (2017)	Interview
Rai et al. (2016)	Matched survey and solar program data
Vasseur & Kemp (2015)	Online survey; logistic regression analysis
Zhang et al. (2022)	Real options analysis supported agent-based diffusion model (ROA-ABDM)
Zulu et al. (2021)	Structured equation modeling

Most of the studies are empirical and use quantitative methods. The survey method is the central data collection tool; some studies are interview-based, and some use mixed methods. Further, data is prominently analyzed using regression and structured equation modeling techniques since the period of review is spread over the last two decades. Some of the studies are also review articles with a bibliometric and meta-analytical approach.

Discussion

This review was done to understand the enablers for adopting solar energy systems in different parts of the world. These enablers or motivations were segregated using various theoretical frameworks in a country-specific context. As per Smith and Raven (2012) and Smith et al. (2014), solar energy systems require nurturing and empowerment to become competitive in the fight against the dominant technologies to achieve grid parity and, if not replaced, at least grab a significant share of energy. This study helped identify a comprehensive list of factors that facilitate deeper penetration of solar products in various segments. For instance, environmental concern can be considered a motivator in high-income economies. In the case of lower-middle-income economies, the role of governments in providing innovative solutions in subsidies, Feed-In-Tariff plans, vendor accessibility, and availability of microfinance are significant motivators. The role of NGOs is also essential in the case of low-income settlements.

Our review was based on the TCCM framework, which could help us identify the theories and relevant constructs and the methodologies that can be adopted to increase solar energy adoption in areas with defined social, economic, cultural, and environmental characteristics. Table 11 provides a gist of these identified enablers broadly categorized into environmental benefits, economic factors, sociocultural factors, demographic factors, policies, and marketability for solar products.

Considering the perspectives of a given area, a suitable model can be applied based on four criteria of effectiveness, efficiency, equity, and institutional feasibility given by the International Renewable Energy Agency (IRENA, 2014; Po, 2014). Providing much-needed energy security for all requires sustainable energy systems to be economically more viable and affordable energy sources. Access to loans, subsidized products, financial returns, and savings are some of the relative advantages the adopters perceived concerning solar products. Based on these criteria the following proposition can be made:

P1: Economic Factors Affect the Adoption of Solar Products

Communication channels like word-of-mouth, social gatherings, family, friends, and peers are significant in decision-making. Müller and Rode (2013) and Bollinger and Gillingham (2012) studied peer effects on the adoption of solar PV in Germany and California, respectively. They found that social interactions and PV installations in close spatial proximities increase the propensity of newer installations. Jager et al. (2006) observed that the formation of social networks and gatherings led to increased intermingling of adopters (influential people) and potential adopters, leading to increased awareness, reduced complexity, and changes in attitudes toward adopting solar PV systems. Further, many studies show that family size and higher household incomes are other important considerations. Hence, it can be proposed that.

Table 11. Summary of Motivating Factors for Adoption of Solar Products.

Main Factors	Subfactors	Relevant Studies
Economic factors	Savings on electricity bills	Etongo & Naidu (2022), Jacksohn et al. (2019), Best et al. (2019)
	Hedging against future costs	Thiede et al. (2014), Balcombe et al. (2014)
	Financial returns	Rai et al. (2016)
	Access to credit	Etongo & Naidu (2022)
Sociocultural factors	Attitude, trust	Wolske et al. (2017), Yang et al. (2021), Zulu et al. (2021)
	Knowledge and awareness	Kalish (1985), Claudy et al. (2010), Iskin et al. (2013), Bouaguel & Alsulaimani (2022); Aravindan et al. (2022), Alam et al. (2021), Claudy et al. (2010), Simpson & Clifton (2017); Ali & Yadav (2019)
	Social acceptance	Wüstenhagen et al. (2007), Kowalska-Pyzalska (2018); Brohmann et al. (2006), Blenkinsopp et al. (2013)
	Peer effects	Bollinger & Gillingham (2012), Balta-Ozkan et al. (2021), Müller & Rode (2013), Zhao et al. (2011), Bekti et al. (2022), Rai et al. (2016)
Environmental benefits	Environmental concerns / green energy preference	Korcaj et al. (2015), Bouaguel & Alsulimani (2022), Jacksohn et al. (2019), Etongo & Naidu (2022)
	Quality of life	Bekti et al. (2022), Alizadeh et al. (2019), Halder & Parvez (2015)
Demographics	Family income	Zhao et al. (2011), Guta (2018)
	Household characteristics (family size)	Jacksohn et al. (2019), Etongo & Naidu (2022)
Policies	Subsidies and incentives	Klaus et al. (2006), Best et al. (2019), Jayaweera (2018), Simpson & Clifton (2017)
	Feed-in-tariffs	Alyousef et al. (2017), Balcombe et al. (2014)
Marketing related	Promotional Initiatives (advertising, publicity, demonstrations)	Jager et al. (2006), Zhao et al. (2011), Alam et al. (2021), Heiskanen & Matschoss (2017), Pathania et al. (2017)
	Market penetration, supply chain management	Olson (2014), Harish et al. (2013)
	Facilitating conditions, installer characteristics	Bekti et al. (2022), Rai et al. (2016), Aggarwal et al. (2019), Heiskanen & Matschoss (2017)

P2: Sociodemographic and Cultural Characteristics Affect the Adoption of Solar Products

Many studies, especially those done in rural communities and low-income countries, observed that using solar products enhances the quality of life of people by providing them with energy security. Also, the environmental benefits of solar energy are well accepted and studied. This leads to the next proposition.

P3: Environmental Benefits Affect the Adoption of Solar Products

The policies to change the components of the energy mix must be designed to be effective, measurable, quantifiable, and suitable in most contexts. People are to be convinced that the potential benefits of solar energy shall always exceed the investment made by deployment in the long term. Participation by local communities and other stakeholders in the policy-making process is also called for. Hence, it is proposed that:

P4: Policy Initiatives Affect the Adoption of Solar Products

Besides awareness and affordability, accessibility is an important factor. Technical and institutional frameworks should be strong enough to cater to remote areas and provide energy to all. Installer reliability and expertise are also observed as important factors in increasing the adoption rates of solar products. Promotional campaigns carried out individually by the installers and as advertising and publicity by the agencies result in increased awareness levels and accessibility. Thus, it can be proposed that.

P5: Facilitating Conditions and Marketability Affect the Adoption of Solar Products

Implications

It is observed that while making decisions to adopt solar products, individuals majorly go for a cost-benefit analysis (Kamakura & Balasubramanian, 1988; Korcaj et al., 2015). This implies that the advantages of solar products should be highlighted to overshadow the costs involved. All stakeholders, such as the government, financial institutions, and sellers, must work in tandem to motivate individuals to use solar energy products. The study has various implications discussed below. The study and its implications may also be used for other renewable products.

The study highlighted the research wherein the attitudes of individuals affect the intentions to adopt solar products. It is also observed that knowledge and awareness about the benefits of solar products are critical components of attitude formation. Policymakers can run various campaigns at local and national levels to increase awareness. Since installer reliability is a significant motivator, as per the study, a more conducive environment (in the form of laws and policies) can be created for manufacturers and other solar market practitioners. This review may also benefit policymakers while designing and developing infrastructure for Smart cities.

Access to credit or loan facilities boosts solar product adoption, especially in low-income groups. Banks and other financial institutions can develop innovative schemes, such as low-interest or bundled loans, to increase solar uptake and run promotional campaigns.

It is observed that people adopt solar products if they are aware of the benefits of solar products and if the market penetration is high. People tend to adopt more if the products are easily accessible to them (Pradhan & Kar, 2019). The supply chains for solar products need to be strengthened so that the products are accessible to the last mile. Marketing strategies, including advertisements and other promotional activities, can be designed by private as well as government organizations to make the public aware. This study can prove beneficial as an academic source for research scholars in renewable energy, sustainability, and economic development. Further, academicians can play a significant role in developing environmental awareness and consciousness among their students about the benefits of using RES so that they grow up as responsible citizens.

Conclusion

This review article summarizes information about motivating factors for the adoption of solar products, primarily solar rooftops and solar home systems, among residential households. Various studies were analyzed based on the TCCM framework, wherein theoretical models, contextual factors, characteristics, including dependent and independent variables, and methods were studied.

It is observed that over some time, there has been a growing interest in residential households, and increased adoption of solar energy is taking place, as shown by different studies. The motivating factors for increased interest range from cost savings to environmental conservation to increased social status. They vary according to different contexts like sociocultural characteristics, demographics, financial status, political and regulatory environment, and economic standing of the country (as reported by the World Bank). Studies also show that besides generating mass awareness about the advantages of solar products, making them accessible and affordable is equally essential. Increased marketability and commoditization can help reduce costs and thus increase reachability, especially in the case of lower and middle-income group countries.

Using an integrated and inclusive multistakeholder approach, the adoption and diffusion of solar products can be increased if the identified factors are rightly identified and placed. Customized solutions could be designed based on the specific requirements of the building owners, and contagion models could not explain the diffusion of solar products. In some cases, local requirements and conditions define the development of policies at the national level. Further, multiple approaches can be employed on a case-to-case basis; the right interventions by the right parties at the right time can help develop solar markets in synergy with local and shared facilities.

The review is limited to small-scale installations, primarily dealing with studies carried out on individual and residential levels. Further, diffusion of solar PV, solar water heaters, solar lighting systems, and solar rooftops are discussed. Also, the review can be extended to solar water/irrigation pumps, cooking systems, dryers, and other solar heating systems.

CRediT Author Statement

Rupal Chowdhary helped in conceptualization and methodology.

Archana Nag was involved in data curation and writing—original draft preparation.

Amulya Gurtu contributed to visualization and writing—reviewing and editing.

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Exploring the Factors Influencing Green Entrepreneurship Among the Northeast Entrepreneurs—An Approach of Gray-decision Making Trial And Evaluation Laboratory (DEMATEL)

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Abstract

In recent years, there has been an increasing focus on incorporating green business techniques into entrepreneurship activities, a concern shared by firms and researchers alike. Although developed nations have faced regulatory pressures to adopt environmentally friendly methods, this problem has received less attention in developing economies such as India. In light of the time sensitivity, it is crucial to identify the catalysts of green business adaptation into their entrepreneurial activity, specifically focusing on the essential variables among them.

The objective of this study is to identify and establish a cause-and-effect relationship between the elements that support green entrepreneurship, using the gray DEMATEL (Decision Making Trial and Evaluation Laboratory) technique. The distinctiveness of this research is its simultaneous emphasis on identifying factors that facilitate and establishing cause-and-effect links, which has not been investigated in previous studies. The creation of green manufacturing capabilities, obtaining funding for green innovation, getting loans from financial institutions easily, and following environmental regulations are the most important components of a comprehensive list of 10 factors that support green business.

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Moreover, the study enhances its contribution by providing managerial and practical implications, with the purpose of supporting managers of the case organization in implementing green innovation techniques. This comprehensive method seeks to connect the divide between identifying factors that enable something and cultivating a more profound comprehension of how these factors are interconnected, in order to facilitate the implementation of sustainable entrepreneurship practices.

Keywords

Green business, green entrepreneurship, sustainability

JEL Classification: M10, M13

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Introduction

The relationship between economic growth and the environment is highlighted in the concept of green economic growth, which seeks to harmonize the economy with its ecological underpinnings. An imperative task is to analyze several approaches to economic expansion that encompass diverse facets of socioeconomic advancement (Lawson, 2006). Both academic research and real-world evaluations focus on how to include eco-friendly activities in national development plans and policy actions. Both developed and developing countries are actively involved in these efforts. Things like institutional capacity, government directives, national development goals, and other resources that are available affect how policymakers make decisions. (Megwai et al., 2016).

The efficacy of green performance sustainability relies on the consistent capacity to implement and the congruence of environmental policies, as highlighted by study (Islam et al., 2012). Green entrepreneurs and their initiatives are essential for maintaining the sustainability of the green economy. Nevertheless, challenges such as volatile laws and bureaucratic hurdles in the corporate environment pose difficulties that impede the effective functioning and growth of these eco-friendly initiatives (Melay et al., 2017).

The integration of environmental sustainability into entrepreneurship is crucial for promoting the development of enterprises committed to advancing social progress. Green enterprises have a greater likelihood of long-term sustainability and tend to earn larger sales compared to businesses that do not follow environmentally conscious entrepreneurship principles (Charney & Libecap, 2003; Kirkwood & Walton, 2010; Oosterbeek et al., 2010; Rauch & Hulsink, 2015). Hence, proficiency in green entrepreneurship additionally facilitates the integration of technology in the creation of goods and services, promoting technology-based organizations and items (Rauch & Hulsink, 2015). The growing focus on the mindset of green entrepreneurship has prompted debates on the convergence of green knowledge and entrepreneurial conduct, specifically in the context of poor nations (Rauch & Hulsink, 2015).

Participating in environmentally-friendly business practices offers organizations the chance to adjust to shifts in the industry and strengthen their long-term competitive edge, placing themselves advantageously in the market. As a result, a growing number of organizations are adopting environmentally friendly strategies. Nevertheless, the execution of environmentally-friendly business practices necessitates the effective handling of numerous internal and external risk factors or obstacles, whether they are expected or unexpected (Su et al., 2014). Researchers have investigated the factors that contribute to the expansion of environmentally-friendly businesses, condensing successful case studies for enterprises to consult (Yi, 2014). Hwang et al. (2017) propose that the optimal strategy for fostering environmentally conscious enterprises is through government co-funding and incentives for training and technologies. The success of green business is determined by various factors, such as the endorsement from senior executives, the education and development of staff, cooperation among the supply chain, and the ever-changing nature of the environment (Chan et al., 2016; Dai et al., 2014, 2015; Sarkis et al., 2010).

Concurrently, studies on business failure strive to propose strategies that can avert substantial financial setbacks for companies (Wang & Wu, 2017). The study acknowledges the adage, "failure is the mother of success," and emphasizes the valuable insights that may be derived from failure. Business failure, a common problem in the field of business and management, has been repeatedly noticed (Kherrazi & Ahsina, 2016). Emotional issues that result in business failure can be effectively dealt with by employing emotion-focused coping strategies, encouraging self-reflection, and eventually enhancing business circumstances (Byrne & Shepherd, 2015). Hence, comprehending the fundamental determinants of business success is vital for achieving future business prosperity.

To summarize, the current body of literature thoroughly explores the elements that contribute to the success of green businesses, while studies on business failures generally overlook the environmental side. This study seeks to fill this void by identifying the pivotal variables that contribute to the success of green businesses. This study enhances the theoretical understanding of green business by developing a framework that aims to influence success in this field. It complements existing studies that mainly focus on identifying success factors and provides a more comprehensive basis for the practical implementation of green business principles.

Through the examination of previous research, researchers can focus on the extraction, analysis, and evaluation of crucial variables. Büyüközkan and Güleryüz (2016) defined a total of 21 criteria categorized into five dimensions: technological, economic, political, social, and environmental. Jeng (2015) examined the significance of environmental uncertainty, asset specificity, and trust as indicators in a causal model of supply chain collaboration. Moreover, a firm undergoes a life cycle, progressing through stages of development and challenges (Al-Hadi et al., 2019).

Subsequently, the quantitative study was conducted using expert assessment to reveal the importance of each affecting element. The assessment procedure utilized the DEMATEL method, a well-established strategy frequently deployed in various researches for its straightforwardness. Nevertheless, the primary limitation of DEMATEL is its dependence on expert assessment, which may lead to possible inconsistencies. In order to tackle this issue, this study addresses it by integrating gray set theory (Xia et al., 2015). Gray set theory is applicable in circumstances characterized by partial clarity of knowledge, with the remaining portion being vague and uncertain. The system has the ability to account for missing information, hence improving the accuracy of the evaluation (Su et al., 2016). Hence, to thoroughly analyze the correlation between elements with enhanced precision and applicability, the integration of gray set theory and DEMATEL is employed. This integration allows for the incorporation of uncertainty, imprecise information, and ambiguity into the assessment process.

In this context, the present study has following research questions:

- What are the key drivers influencing the adoption of green entrepreneurship in North East India?
- How does the gray-DEMATEL method help uncover cause-and-effect relationships between green business factors?

The study makes three significant contributions: First, it investigates the factors that influence green business, providing a thorough analysis of the subject. Second, it develops a framework, which enhances the construction of a theoretical framework. Finally, it combines gray set theory with DEMATEL to assess components, hence enhancing the precision and applicability of evaluation outcomes. The subsequent sections of this article are structured in the following manner: the second section provides a thorough analysis of the current literature on green business, including its key components and the use of gray DEMATEL to uncover possible factors that could contribute to the success of green enterprises. The third section offers an elaborate account of the research approach, which involves the application of gray DEMATEL (GDEMATEL) and analytical procedures. The fourth section entails the processing and analysis of the data, however, the fifth section scrutinizes the ramifications of this research. The sixth section concludes the investigation and specifies the limitations of this study.

Review of the Existing Literature

Review of the Literature on Green Business and the Elements that Influence it

Although environmental studies have experienced significant growth, the area of green entrepreneurship is still in its nascent phase. Pacheco et al. (2010) emphasize the presence of unsolved conceptual matters where Business Economics, Entrepreneurship, Finance, and Accounting meet. O’Neill and Gibbs (2016) propose that entrepreneurs frequently struggle with delineating the precise range of activities that meet the criteria for green entrepreneurship. In order to resolve this lack of clarity, researchers have endeavored to establish a precise definition or description of green entrepreneurship. Green Project (2012) defines it as a deliberate effort to tackle environmental and social concerns through entrepreneurial endeavors, notwithstanding the potential dangers, with the aim of achieving a favorable outcome for both the environment and financial stability. A green entrepreneur is further defined as an individual who takes the initiative to establish and oversee a business that is focused on being environmentally friendly in both its operations and the products it offers.

In their study, Costantini and Mazzanti (2012) suggest that green entrepreneurship can be defined by considering the technological aspects of production or the operations of a corporation. Dale (2018) characterizes it as a narrative-driven procedure in which an entrepreneur secures backing from stakeholders to pursue their aspirations. According to the literature, there is no commonly acknowledged definition of green entrepreneurship due to its early stage of development (Demirel et al., 2019).

Green business seeks to implement products, processes, services, and business models that are distinguished by their low carbon emissions, resource efficiency, or remanufacturing. Green businesses, when compared to their nearest competitors, operate and perform in a significantly more sustainable manner (Kanchan et al., 2015). In the current era of entrepreneurship, the advancement and updating of organizations require the use of environmentally friendly business strategies (Mioara & Mihai, 2014). Ilinitch and Schaltegger (1995) suggest integrating an environmental aspect into the strategic planning process of enterprises involved in environmentally conscious business. Kirchhoff (2000) supports the implementation of ecologically friendly materials, reduction of waste and pollution in the production process, and improvement of the biodegradability of the final product for enterprises engaged in green business. Lin et al. (2011a) employ a hybrid methodology to investigate the innovation capabilities of environmentally conscious businesses.

In the highly competitive contemporary business landscape, a multitude of variables can contribute to the demise of a corporation. Managerial cognition is recognized as a significant component contributing to failure, as stated by Cox and Vos (2005). Additional variables such as variable expenses, customer delays, lack of expertise in contracts, narrow profit margins caused by competition (Mahamid, 2012), and the choice of suppliers (Bohner & Minner, 2017), can also contribute to the collapse of a corporation. Environmentally-friendly firms can achieve sustainable development by implementing and improving effective green process management. This has been proved in industries such as real estate, agribusiness, and related areas. Business operations can improve their environmental sustainability by applying business process reengineering with a strategic focus on ecological perspectives (Cui, 2017; Lan, 2011; Peng & Zhang, 2014). Chen and Wu (2015) examine how organizations' perception of green business affects their adoption of green business strategies and overall business success.

Although numerous studies have examined the influence of specific factors, such as green human resources, on green business, only a few have taken into account the interrelationships between multiple components or the links between factors that contribute to the success or influence of green businesses. Hence, this study aims to identify the determinants of green business factors, facilitating a thorough investigation. The DEMATEL methodology is utilized to quantify the importance of each feature, while gray set theory is implemented to effectively address the problem of semantic uncertainty.

Literature on Application of Gray-DEMATEL

The DEMATEL method is an effective approach for examining the relationships between important elements in terms of their characteristics and strength. The direct impact matrix is used to identify the logical links between items and determine the influence and relevance of each aspect on others. Bai and Sarkis (2013) effectively demonstrated complex causal links between essential success elements using DEMATEL. Meanwhile, Xia et al. (2015) examined internal obstacles encountered by automotive parts remanufacturers and assessed causal barriers using a model framework. DEMATEL may also identify causal linkages and interacting influences among criteria, as demonstrated in studies conducted by Baykasoğlu and Gölcük (2017), Sharma et al. (2017), and Tsai et al. (2016).

Nevertheless, the DEMATEL method is constrained by the imprecise nature of human assessments and the challenge of accurately quantifying numerical values (Govindan et al., 2016a). The system fails to consider a hierarchical organization and uses an analytical method that lacks complete information. Gray set theory addresses the limitations of uncertain systems with unknown knowledge by augmenting partial information (Su et al., 2016). Vafadarnikjoo et al. (2015) utilized GDEMATEL to identify significant project risk categories, but Ren et al. (2017) performed a more accurate assessment of the impact of sludge on the long-term viability of energy systems.

While GDEMATEL has been utilized in various research studies, such as exploring key attributes of supply chain risks and uncertainties and analyzing the implementation of sustainable consumption and production (Luthra et al., 2017; Wu et al., 2017), there is a scarcity of research on the application of GDEMATEL to investigate failure factors of green business. The focus of our study is to examine the ambiguity surrounding expert viewpoints on crucial determinants of green company failure. Hence, the use of gray set theory and gray-DEMATEL is deemed pragmatic and appropriate for this inquiry. Thus, our research aims to fill this research gap by providing enhanced theoretical support and practical guidance.

Methodology

This study employs a two-part methodology, with the first part being the use of Dalkey and Helmer's (1963) Delphi method to identify enablers. The Delphi approach entails systematically defining all relevant parts of the study and then collecting expert opinions through iterative rounds of deliberation until a consensus is reached on the key factors. Through a comprehensive literature analysis, we identified an initial set of 13 factors for our study. Following that, these facilitators engaged in several rounds of deliberations with experts, resulting in a definitive consensus on 10 facilitators for subsequent examination utilizing the gray DEMATEL technique.

The Battelle Memorial Institute in Geneva developed the DEMATEL methodology, a thorough method for formulating and analyzing the interdependencies among various elements. This is accomplished by using relationship matrices and digraphs to establish causal linkages (Gabus & Fontela, 1973).

DEMATEL is a beneficial method for examining cause-and-effect connections in intricate structural models. This sets it apart from other multi-criteria decision-making techniques such as Analytical Hierarchical Process (AHP) and TOPSIS (Technique for Order of Preference by Similarity to Ideal Solution), which do not explicitly establish cause-and-effect relationships (Kim, 2006; Tseng, 2009; Wu et al., 2010).

Although DEMATEL is proficient in examining causal connections, its drawback is in addressing ambiguity and expert conflicts arising from inadequate information. In order to tackle these difficulties, the research utilizes gray system theory, which is particularly advantageous in dealing with ambiguous and partial information, particularly in instances involving discrete data. Gray system theory is a useful approach for dealing with uncertainties and limited data in situations with small sample sizes. It helps to solve the problems that arise from making incorrect decisions (Liu & Qiao, 2014). The combination of gray and DEMATEL methodologies has been successfully applied in various fields, including service quality expectation, exploration of core competencies, green supplier development, business process management, FMEA assessment, modeling enablers of supply chain risk mitigation, analysis of barriers for automotive parts remanufacture, and analysis of barriers for environmentally friendly products (Bai & Sarkis, 2013; Chang et al., 2013; Fu et al., 2012; Lin et al., 2011a; Rajesh & Ravi, 2015; Shao et al., 2016; Tseng, 2009; Xia et al., 2015).

The present investigation utilizes a blend of the gray system and DEMATEL methodologies to clarify the connections among factors that facilitate green innovation. The following outline outlines the methodological steps for the gray DEMATEL approach:

Step 1: Initial relationship matrix creation for every expert

Let "n" be the number of enablers of green innovation and "k" represent the number of respondents selected for the research. Each participant is given the task of rating, on a scale of 0 to 5, the relative influence of facilitator Bi over facilitator Bj. From "no influence" to "very high influence," the scale values indicate the various impact levels among the "n" facilitators that have been found. The linguistic assessments and the gray numbers that correspond with them are shown in Table 2. Following that, a set of "k" initial relation matrices were produced utilizing the participants' impact evaluations.

Table 1. Evaluation of Linguistic Abilities and the Corresponding Grading System.

Linguisitc Terms	Gray Numbers	Values
No influence (NI)	[0,0]	1
Very low influence (VL)	[0,0.25]	2
Low influence (LI)	[0.25,0.5]	3
High influence [HI]	[0.5,0.75]	4
Very high influence [VHI]	[0.75,1]	5

Source: Salem et al. (2020).

Table 2. Normalized Direct Crisp Relationship Matrix X for the Success of Green Entrepreneurship.

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10
V1	0	0.0449	0.0363	0.0705	0.0805	0.0634	0.0363	0.0363	0.0278	0.0634
V2	0.0643	0	0.0506	0.0719	0.0719	0.0719	0.0463	0.0549	0.0624	0.0634
V3	0.0558	0.0473	0	0.0634	0.0719	0.0534	0.0634	0.0805	0.0705	0.0549
V4	0.0558	0.0705	0.0506	0	0.0634	0.062	0.0378	0.0463	0.0363	0.0463
V5	0.0881	0.062	0.0795	0.0634	0	0.0549	0.0534	0.0378	0.0264	0.0719
V6	0.0966	0.0534	0.052	0.0791	0.0634	0	0.0534	0.0463	0.0534	0.0449
V7	0.0881	0.0791	0.0705	0.0719	0.0634	0.0634	0	0.0363	0.0705	0.0634
V8	0.0373	0.0696	0.071	0.0378	0.0378	0.0805	0.0463	0	0.0473	0.0534
V9	0.0363	0.0795	0.071	0.062	0.0534	0.0719	0.0363	0.0719	0	0.0634
V10	0.071	0.0624	0.0454	0.0719	0.0719	0.0634	0.0549	0.0634	0.0473	0

Step 2: Deriving the matching grayscale matrix for each initial connection matrix

Using the values acquired in Step 1 and Table 2. The process of creating higher and lower value ranges yields the gray matrices, as shown in Table 2 (Ju-Long, 1982; Julong, 1989; Rajesh & Ravi 2015).

$$\otimes G_{ij}^{l} = \left(\otimes_{G_{ij,}^{l}\, \bar{\otimes} G_{ij,}^{l}} \right) \tag{1}$$

Where G_{ij}^{l} refers gray relational matrix for expert l, showing the relationship between factors.

Step 3: Obtaining the average of gray relation matrices

The average gray relational matrix, represented as $\otimes G_{ij}$, is computed by combining the "k" gray relation matrices acquired.

$$\left[\otimes G_{ij}^{l} \right] : l = 1 - k \ as$$

$$\otimes G_{ij}^{l} = \left(\frac{\sum_{i} \otimes - G_{ij}^{l}}{\mathrm{k}}, \frac{\sum_{i} \bar{\otimes} - G_{ij}^{l}}{\mathrm{k}} \right) \tag{2}$$

Step 4: Compute crisp matrices using average gray matrices

By employing a three-step technique, akin to the modified-CFCS method, one can obtain clear matrices, as evidenced in prior research conducted by Rajesh and Ravi (2015), Rajesh et al. (2015), and Xia et al. (2015).

1. Lower and Upper Normalized values.

$$\otimes G_{ij} = \otimes \_\, \mathrm{G}_{\mathrm{ij}} - \mathrm{j}^{\mathrm{min}} \otimes \_\, \mathrm{G}_{\mathrm{ij}} \,/\, \Delta_{Min}^{Max} \tag{3}$$

   Where $\otimes \mathrm{G}_{\mathrm{ij}}$ represents the normalized lower limit value of the gray number $\otimes \mathrm{G}_{\mathrm{ij}}$

$$\bar{\otimes} \mathrm{G}_{\mathrm{ij}} = (\otimes \mathrm{G}_{\mathrm{ij}} - \mathrm{j}^{\mathrm{min}}\, \bar{\otimes}\, \mathrm{G}_{\mathrm{ij}} \,/\, \Delta_{Min}^{Max} \tag{4}$$

   Where $\bar{\otimes} \mathrm{G}_{\mathrm{ij}}$ denotes the normalized upper limit value of the gray number $\bar{\otimes} \mathrm{G}_{\mathrm{ij}}$

$$\Delta_{Min}^{Max} = \underset{j}{max}\, \bar{\otimes}\, \mathrm{G}_{\mathrm{ij}} - \underset{j}{-min}\, \bar{\otimes} \_\mathrm{G}_{\mathrm{ij}} \tag{5}$$

2. Calculate total normalized crisp value

$$\mathrm{X}_{\mathrm{ij}} = \left(\frac{(\otimes_{\_\mathrm{Gij}} \left(1 - \otimes_{\_\mathrm{Gij}} \right) + \left(\bar{\otimes} \mathrm{G}_{\mathrm{ij}}\ \mathrm{X}\, \bar{\otimes}\, \mathrm{G}_{\mathrm{ij}} \right)}{(1 - \otimes_{\mathrm{Gij}} + \bar{\otimes} \mathrm{G}_{\mathrm{ij}}} \right) \tag{6}$$

3. Compute final crisp values

$$X_{ij}^{*} = (\min \otimes \_ \mathrm{G}_{\mathrm{ij}} - \mathrm{G}_{\mathrm{ij}} + (\mathrm{X}_{\mathrm{ij}} \text{ x } \Delta_{Min}^{Max} \tag{8}$$

And

$$\mathrm{X} = X_{ij}^{*}$$

Step 5: Creating a standardized direct-relationship matrix

The normalized direct-relation matrix "N" is obtained by using Equations (9) and (10). The elements in this matrix are constrained between the range of 0 and 1.

$$\mathrm{L} = \frac{1}{\max\limits_{1 \le i \le n} \sum_{\mathrm{j}=1}^{\mathrm{n}} X_{ij}^{*}} \tag{9}$$

$$\mathrm{N} = \mathrm{L} * \mathrm{X} \tag{10}$$

Where the variable N represents the normalized direct-relation matrix, L represents the normalization factor, and X represents the initial crisp relationship matrix.

Step 6: Calculate the total relation matrix "S" by applying Equation (11)

$$\mathrm{S} = \mathrm{N}\,(\mathrm{I} - \mathrm{N})^{--1} \tag{11}$$

Equation (11) can be expressed as S equals N multiplied by the inverse of (I minus N), where I denotes an identity matrix.

Step 7: Acquire informative parameters

The symbol R represents the sum of rows, while the symbol C represents the sum of columns. Equations (12) and (13), when applied, yield the following representation of the calculation:

$$\mathrm{R}_{\mathrm{i}} = \sum_{j=1}^{n} S_{ij} \quad \forall_{i} \tag{12}$$

$$\mathrm{C}_{\mathrm{j}} = \sum_{i=1}^{n} S_{ij} \quad \forall_{j} \tag{13}$$

Where

R_{i} represents the sum of row elements in the total relation matrix S for row i, it gives us the total effect that factor i has on all other factors.

C_{j} represents the sum of column elements in the total relation matrix S for column j, In other words, it gives us the total effect that other factors have on factor j.

Step 8: Establish a casual diagram and diagraphs

A causal diagram is created by utilizing the values derived from Equations (12) and (13).

Data Collection and Analysis

This study constructs the characteristics of green entrepreneurship based on existing literature. Subsequently, 10 criteria are chosen to examine the influential details of green entrepreneurship, which will be detailed below.

Many organizational activities are included in environmental management practices, such as the design of products, manufacturing equipment, raw material inputs, production information, material packaging, organizational technology, and waste management procedures (Shrivastava & Hart, 1995). By putting effective planning into practice and getting top management support for environmental management and improvement, organizations can accomplish major innovations (Lee et al., 2014).

Environmental commitment encompasses an organization's environmental management policies and the level of awareness among employees on the advantages of various environmental initiatives and their significance (Simpson et al., 2007). The degree to which a corporation addresses the requests from stakeholders for environmentally friendly products is mostly determined by its level of dedication to environmental concerns (Aragon-Correa & Sharma, 2003; Henriques & Sadorsky, 1999). Green operational practices refer to operations that pertain to both products and processes, aiming to minimize their environmental impact (Gilley et al., 2000). With respect to activities associated with products, this involves the development and promotion of environmentally sustainable items that encourage reusability, recycling, and easy disposal. On the other hand, process-related practices place emphasis on the design and implementation of industrial procedures that produce minimal environmental impact, with the ultimate goal of attaining almost no waste production (De Ron, 1998). This can be achieved by implementing cleaner technology and implementing effective waste management and disposal systems (De Ron, 1998; Klassen & Whybark, 1999). Moreover, communication strategies are designed to improve a company's reputation and standing both in society and among stakeholders by promoting the firm's environmental accomplishments and methods (Aragón-Correa, 1998; Florida & Davison, 2001).

The term "green manufacturing capability" describes the set of organizational, financial, human, technological, and physical resources that are applied in a manufacturing plant to enhance its environmental performance. These resources are coordinated by organizational procedures (Grant, 1991; Nelson & Winter, 2009). An organization can become more green by using methods that aim to cut down on waste and pollution, make products that are better for the environment, and include environmental management systems like ISO in the production process (Maruthi & Rashmi, 2015; Nikbakhsh, 2009; Sarkis, 2001; Somsuk & Laosirihongthong, 2016; Zhu et al., 2008).

Financial institutions exhibit a strong commitment to environmental preservation and a willingness to finance initiatives that benefit the environment. Businesses can benefit from this trend by securing affordable loans at favorable interest rates to facilitate the development of new sustainable and eco-friendly goods (Azapagic, 2004; Govindan et al., 2016b; Jenkins & Yakovleva, 2006; Mathiyazhagan et al., 2013; Wilson & Nayee, 2002).

Integrating environmentally friendly practices into the supply chain enables firms to attain improved cost advantages and operational efficiencies. Green products have greater perceived value among customers, especially in larger organizations, which allows smaller enterprises to demand higher pricing for their products (Lee, 2008). Organizations have the potential to attain financial benefits through the adoption of innovative strategies for product development, which can result in price reductions (Berkel, 2007; Govindan et al., 2016b). The implementation of green innovation strategies enables organizations to broaden their presence in international markets, thereby facilitating the procurement of new companies (Chiou et al., 2011; Govindan et al., 2016b; Mathiyazhagan & Haq, 2013).

Green manufacturing capability refers to the combination of physical, financial, human, technological, and organizational resources within a manufacturing plant. These resources are integrated through organizational routines to improve the firm's environmental performance (Grant, 1991; Nelson & Winter, 2009). Green manufacturing capabilities are established through the implementation of strategies that place an emphasis on the prevention of environmental damage, waste reduction, and pollution control. This includes integrating environmental management systems such as ISO into the manufacturing process and designing products that adhere to environmentally favorable standards (Maruthi & Rashmi, 2015; Nikbakhsh, 2009; Sarkis, 2001; Somsuk & Laosirihongthong, 2016; Zhu et al., 2008).

Designing for green products entails the deliberate process of creating a product that minimizes its environmental footprint during its complete lifespan. This entails reducing the use of materials and energy, removing harmful by-products, and promoting the reuse and recycling of resources without incurring additional costs for the product (Eltayeb et al., 2011; Hassan et al., 2016; Mudgal et al., 2009; Sarkis, 2003; Somsuk & Laosirihongthong, 2016).

Gaining insight into the market need for environmentally friendly products enables firms to develop a strategic plan for creating innovative green solutions. Consumers are becoming more conscious of ecologically sustainable items and are displaying a higher level of selectivity in their preference for eco-friendly goods (Chen, 2008; Zhou et al., 2009). Smaller firms that rely on larger entities for their business are obligated by these larger organizations to use environmentally friendly practices in their manufacturing processes, which in turn promotes the development of sustainable technologies (Chiou et al., 2011; Hsu & Hu, 2009).

Result and Analysis

Mere identification of the factors listed in Table 3 is insufficient to achieve the goal of this study. According to the research conducted by Ouyang et al. (2016), Pajer et al. (2017), and Xia et al. (2015), which primarily focused on expert selection, we have asked three experts to assess the direct impact of each component on others. The panel comprised a university scholar, a government representative, and a manager from a sustainable food company. These highly experienced professionals, each with more than 12 years of expertise in the field, are equally important in providing insights for a comprehensive analysis of the elements. As a result, each expert is assigned an equal weight of 0.25. A sensitivity analysis on this variable will be conducted in the future.

To construct a matrix comprising 10 criteria related to linguistic characteristics, a 10×10 gray direct-relation matrix is computed. By adhering to the guidelines

Table 3. Proposed Factors Influencing Green Entrepreneurship.

Sl. No.	Factor	Code	Factor of Supporting Literature
1	Environmental management practices	V1	Bergmiller & McCright (2009); Shrivastava & Hart (1995); Theyel (2000); Zhu & Sarkis (2006, 2007); Hajmohammad et al. (2013); Weng et al. (2015); Lee et al. (2014)
2	Environmental commitment of the firm	V2	Aragon-Correa & Sharma (2003); Simpson et al. (2007); Henriques & Sadorsky (1999)
3	Green operating and communication methods	V3	Aragón-Correa (1998); De Ron (1998); Florida & Davison (2001); Klassen & Whybark (1999); Gilley et al. (2000)
4	Green purchasing	V4	Somsuk & Laosirihongthong (2016); Zhu & Sarkis (2006); Ninlawan et al. (2010); Eltayeb et al. (2011); Chan et al. (2012); Govindan et al. (2016b); Hassan et al. (2016); Lee et al. (2014)
5	Developing green manufacturing capabilities	V5	Grant (1991); Zhu et al. (2008); Nikbakhsh (2009); Somsuk and Laosirihongthong (2016); Maruthi & Rashmi (2015); Sarkis (2001); Nelson & Winter (2009)
6	Designing to produce green and sustainable products	V6	Eltayeb et al. (2011); Hassan et al. (2016); Lee et al. (2014); Mudgal et al. (2009); Sarkis (2003); Somsuk & Laosirihongthong (2016)
7	Resources for green innovation	V7	Driessen et al. (2013); Horbach et al. (2012); Huang & Wu (2010); Keskin et al. (2013); Ölundh Sandström & Tingström (2008); Rennings & Rammer (2009)
8	Market demand	V8	Chen (2008); Chiou et al. (2011); Horbach et al. (2012); Hsu & Hu (2009); Kammerer (2009); Lin et al. (2014); Zhou et al. (2009)
9	Cost reduction and new business opportunities	V9	Berkel (2007); Chiou et al. (2011); Govindan et al. (2016b); Lee (2008); Mathiyazhagan & Haq (2013); Mathiyazhagan et al. (2013)
10	Ease of getting loans from financial institutions	V10	Azapagic (2004); Govindan et al. (2016b); Hilson & Nayee (2002); Jenkins & Yakovleva (2006); Mathiyazhagan et al. (2013)

outlined in the third section, we are able to generate a normalized direct-relation matrix X (see Table 2).

In addition, we also produce the comprehensive relationship matrix M (see Table 4). Subsequently, the dataset (R+D, R−D) is calculated, and a Cartesian coordinate system is built utilizing the processes delineated in the preceding sections. Let θ denote the sum of the mean and the standard deviation for the original value. In this case, θ is equal to 0.2565 plus 0.0589, which gives a value of 0.3154.

The study uncovers the cause variables, effect factors, and connections among components that contribute to the success of green businesses by referring to Table 5. Elaborate elucidations are presented subsequently.

Table 4. Total Relation Matrix M for the Success of Green Entrepreneurship.

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10
V1	0.2519	0.2321	0.2185	0.2965	0.3063	0.2958	0.2175	0.201	0.1951	0.2437
V2	0.3468	0.2142	0.2571	0.3293	0.3298	0.3351	0.2519	0.2421	0.2505	0.269
V3	0.3621	0.2767	0.2215	0.3398	0.3482	0.3405	0.2839	0.2786	0.2713	0.2748
V4	0.3104	0.2585	0.2346	0.2333	0.2953	0.2981	0.2236	0.2142	0.2073	0.2311
V5	0.3801	0.28	0.288	0.3316	0.2713	0.3297	0.2676	0.2333	0.2253	0.2826
V6	0.3642	0.256	0.2473	0.3242	0.3121	0.2552	0.2472	0.2243	0.232	0.2423
V7	0.4054	0.3168	0.3003	0.3628	0.3556	0.3622	0.2331	0.25	0.2821	0.2948
V8	0.3119	0.2696	0.264	0.2869	0.2875	0.3318	0.2427	0.1792	0.2285	0.2482
V9	0.3243	0.2913	0.2763	0.322	0.3146	0.3383	0.2457	0.2601	0.1925	0.2693
V10	0.3463	0.2709	0.2479	0.3226	0.3221	0.3214	0.2544	0.245	0.2316	0.2021

Table 5. Cause and Effect Parameters for the Success of Green Entrepreneurship.

Criteria	R	C	R+C	R-C
V1	2.4584	3.4034	5.8618	–0.945
V2	2.8258	2.6661	5.4919	0.1597
V3	2.9974	2.5555	5.5529	0.4419
V4	2.5064	3.149	5.6554	–0.6426
V5	2.8895	3.1428	6.0323	–0.2533
V6	2.7048	3.2081	5.9129	–0.5033
V7	3.1631	2.4676	5.6307	0.6955
V8	2.6503	2.3278	4.9781	0.3225
V9	2.8344	2.3162	5.1506	0.5182
V10	2.7643	2.5579	5.3222	0.2064

Causal/Effect Factors

The study also ranks the causal facilitators according to the values of (Ri - Cj) for all i = j. In order to determine which enablers in the causative group require control and which can be addressed first, it is helpful to characterize and prioritize them. This is because the less mobile enablers in the causal group are the ones that can have the most impact on the effect group enablers (Lin et al., 2011b; Wu & Lee, 2007). The ranking of causal facilitators is as follows: The following values are in the order of importance: V7, V9, V3, V8, V10, V2, V5, V6, V4 and V1. Based on this classification, the categories include resources for green innovation (V7), Cost reduction and new business prospects (V9), and Green operating and communication methods (V3). The table displays the Market Demand (V8), the Ease of obtaining loans from financial institutions (V10), and the environmental commitment of the firm (V2). Enabling factors such as the development of green manufacturing capabilities (V5), the design of goods that are green and sustainable (V6), green purchasing (V4), and the implementation of environmental management practices (V1) all work together harmoniously.

Correlation Between Factors

A large number of criteria, either acting as cause group criteria or as effect group criteria, are often involved in complicated choice situations. Because several aspects are interdependent, enhancing just one of them will not lead to a better system as a whole. Consequently, enhancing variables in cause groups requires identifying this reliance relationship (Govindan et al., 2016b). This will improve effect group criteria and the system as a whole. In light of this, this study used a mix of gray and DEMATEL methodologies to identify the factors that influence the success of green business and the relationships between them. To exclude effects that were not statistically significant, a cutoff value of 0.262 was used. There are major ramifications for the examined company's managers from combining gray and DEMATEL techniques.

The precedence of the enablers is determined by the values of (Ri + Cj): The following order of importance: V5, V6, V1, V4, V7, V3, V2, V10, V9, and V8. This ranking indicates that the most influential factor for the success of green business is developing green manufacturing capabilities (V5). The ability to manufacture in a way that reduces waste and pollution is one example of green manufacturing capabilities, which can greatly improve an organization's environmental performance. According to Nikbakhsh (2009), Maruthi and Rashmi (2015), and Somsuk and Laosirihongthong (2016), most organizations currently use traditional manufacturing technologies. However, in order to transition to green manufacturing technologies, they will need to implement innovative techniques for cost control. This will encourage innovation within their organizations. The Market Demand (V8) is the primary causal factor. In contrast "Environmental commitment of the firm" (V2) is the least correlated with other factors (Cui et al., 2019).

Table 6. Weights Were Assigned to Different Analysts During the Sensitivity Analysis.

	Expert-1	Expert-2	Expert-3
Situation-1	0.40	0.20	0.20
Situation-2	0.20	0.40	0.20
Situation-3	0.20	0.20	0.40

Source: Cui et al. (2019).

Sensitivity Analysis

Sensitivity analysis is a method employed to evaluate the reliability and resilience of a methodology. Sensitivity analysis can be conducted using several approaches. One specific strategy involves adjusting the weight assigned to a certain expert to evaluate its impact on the overall system (Emovon et al., 2016; Rajesh & Ravi, 2015). Given that the selected experts meet the criterion of possessing a minimum of 12 years of expertise, an equal weight can be initially allocated to each expert. Afterwards, the weights can be modified for each case based on the subsequent rules. In this procedure, one expert is allocated a greater weight, while the other experts are awarded equal weights, and the outcomes are calculated accordingly. Assigning higher weights to each of the four experts individually results in the creation of four different scenarios. Table 6 provides a comprehensive presentation of the specifics of the four situations (Cui et al., 2019).

A distinct total relationship matrix is created for each scenario, from which different values for (Ri + Cj) and (Ri – Cj) are obtained. Table 6 presents the ranking of enablers based on their (Ri – Cj) values across different scenarios.

The sensitivity analysis results demonstrate that there is no partiality in the findings derived from the three separate situations. The table unequivocally illustrates that, in each of the three scenarios, the C7 and C5 consistently hold the top two positions. This trend is applicable not only to affect group entrepreneurs but also to entrepreneur that are rated last.

Discussions

The worldwide community has increasingly recognized the importance of environmental sustainability, leading both producers and consumers to actively search for methods to reduce the negative effects of industrialization and growing product demand on the environment. Nevertheless, the need for organizational changes arises due to challenges such as increasing pricing and decreasing product life cycles. Considering this, the study first identified the key drivers influencing the adoption of green entrepreneurship in North East India... The most prominent among these were the establishment of green manufacturing capabilities and the availability of resources of green entrepreneurship, as indicated by the gray-Decision Making Trial and Evaluation Laboratory (DEMATEL) method.

The DEMATEL methodology is particularly advantageous since it categorizes aspects into causal and effectual groupings, offering a systematic approach to elucidating the interconnections among green business elements. This study demonstrated that the DEMATEL method identified resources for green innovation, green manufacturing capabilities, and the accessibility of loans from financial institutions as significant causal factors influencing the success of green entrepreneurship. This study indicates that entrepreneurs ought to prioritize the acquisition of critical resources, including innovative technologies and a proficient personnel, to develop sustainable manufacturing capabilities. Access to these resources allows companies to reduce environmental impact while promoting innovation.

The gray DEMATEL method elucidates the cause-and-effect links among green business aspects by synthesizing expert evaluations and mitigating uncertainty through the application of gray set theory. This hybrid approach enhances the accuracy of factor ranking and enables entrepreneurs to pick those with the most significant causal influence on green innovation.

The research identified 10 pivotal characteristics affecting green entrepreneurship, ranked according to the DEMATEL methodology. This ranking aids entrepreneurs in comprehending the interconnections among many aspects, facilitating better strategic decision-making in the adoption of sustainable practices. Environmental management techniques, green purchasing, and internal organizational collaboration are recognized as significant influencing elements. By addressing these issues, entrepreneurs can enhance the causal determinants of green entrepreneurship.

The study has several implications for entrepreneurs and practical applications.

- This study is the first to uncover the characteristics that contribute to green entrepreneurship and establish causal links between these aspects. This causal link allows entrepreneurs to prioritize aspects for green innovation, determining which factors require greater attention and which can be assigned lower importance.
- The study findings indicate that the primary determinant of green entrepreneurship is the establishment of green manufacturing skills, in addition to the availability of resources for green innovation. Entrepreneurs in the northeast should prioritize the initial development of resources for green innovation, such as acquiring essential equipment, advanced technology, and skilled workforce. Access to these resources enables firms to cultivate sustainable manufacturing capabilities, thereby mitigating the ecological impact.
- Both of these components, which are of great importance, belong to the category of causal factors, as identified by the DEMATEL analysis. In order to effectively execute green innovation, entrepreneurs must enhance other elements that directly influence these highest-rated criteria. Attention should be given to factors such as environmental commitment, loan accessibility, environmental rules, internal organizational cooperation, and human resource skills.
- DEMATEL analysis offers a comprehensive understanding of the cause-and-effect relationship between many aspects, enabling entrepreneurs to effectively pursue a program for implementing green innovation.
- Sensitivity analysis guarantees the robustness of outcomes and aids enterprises in confirming the absence of any partiality among specialists. The consistent findings can be utilized to create forthcoming strategies for the

company, enabling entrepreneurs to concentrate on the significant variables emphasized in the study and devise policies for their enhancement, so contributing to the overarching objective of fostering green entrepreneurship within the organization.

The gray DEMATEL method has proven to be an effective tool for identifying the drivers of green entrepreneurship in North East India. It allows for a clearer understanding of the relationships between different green business factors, helping entrepreneurs prioritize the most impactful aspects for driving innovation and sustainability

Conclusion and Implications of the Research

Environmental sustainability has gained significant recognition worldwide. Producers and consumers are discovering methods to mitigate the environmental impact of industrialization and increasing product demand. However, escalating prices and diminishing product life cycles represent challenges that can only be mitigated through organizational innovations. Accordingly, this study initially identified the determinants of green entrepreneurship and subsequently employed the gray DEMATEL methodology to analyze the interrelationships among these determinants, differentiating between causal and effect factors.

The elements of green entrepreneurship are typically interrelated; the DEMATEL methodology assists entrepreneurs in categorizing these elements into causal and effectual groups, identifying which elements influence others. By concentrating on those elements with the greatest causal impact, entrepreneurs can effectively implement green entrepreneurship initiatives within their organizations.

This study identifies 10 characteristics of green entrepreneurship and employs the DEMATEL technique to rank these factors and ascertain their interdependencies, yielding several managerial and practical consequences.

This study identifies the variables of green entrepreneurship and establishes the causal relationships among them. The causal link enables entrepreneurs to determine which drivers of green innovation warrant greater attention and which can be deprioritized.

Experts emphasized that entrepreneurs should prioritize the development of resources for green entrepreneurship within their organizations, encompassing essential equipment, technology, and skilled personnel. With the requisite resources, firms can cultivate green entrepreneurial capabilities, thereby diminishing their environmental impact. To effectively execute green entrepreneurship, entrepreneurs must initially focus on the driving factors of three preeminent elements. DEMATEL analysis enables entrepreneurs to understand the causal relationships among many components, hence facilitating the precise implementation of green entrepreneurship within their organizations.

Additional sensitivity analysis assists entrepreneurs in confirming the absence of bias among experts and the stability of the results obtained. These results can subsequently inform the development of the company's future strategy, enabling entrepreneurs to concentrate on the critical factors identified in the study and to devise policies and frameworks aimed at enhancing these factors, thereby facilitating the overarching objective of implementing green entrepreneurship within the organization.

Moreover, the findings of this study possess considerable societal ramifications. Through the promotion of green entrepreneurship, enterprises can aid in mitigating environmental deterioration and advancing sustainable economic development. The advancement of green manufacturing capabilities not only minimizes waste but also generates employment prospects in environmentally aware industries. The results indicate that the incorporation of eco-friendly business practices will yield enduring social and environmental advantages, consistent with national sustainability objectives.

Limitations and Scope of Future Work

The current research has several constraints. Primarily, it concentrates solely on entrepreneurs hailing from the North East region, thereby limiting the applicability of its conclusions to entrepreneurs in different geographical areas. To evaluate the suitability and accuracy of the study in various situations, it is essential to conduct a comparison analysis across different states or regions. This analysis might involve either using the same criteria or different ones.

Furthermore, the analysis relies solely on the viewpoints of a mere three specialists in this particular instance. A larger and more diverse sample of experts could be included in future research to increase the statistical reliability of the study. This would enhance the development of a more holistic comprehension of the determinants impacting green entrepreneurship.

In addition, it would be advantageous for the study to investigate other Multi-Criteria Decision Making (MCDM) techniques, such as Interpretive Structural Modeling (ISM). An examination of the ISM and DEMATEL results in comparison could provide valuable insights on the coherence and precision of the findings.

Additionally, in future studies utilizing the gray DEMATEL approach, it may be beneficial to utilize the methodology suggested by Bai and Sarkis (2013). This process entails the conversion of gray numbers into real numbers following the computation of the prominence relationship. The purpose of this improvement is to mitigate the risk of information loss during the conversion process, hence improving the precision and dependability of the outcomes achieved using gray DEMATEL.

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Book Review

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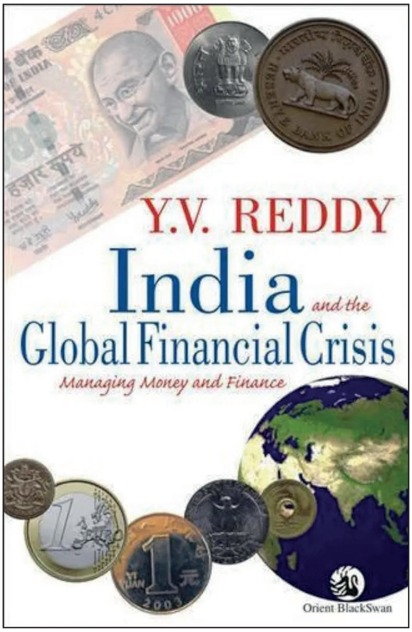

Over the last decade, several good books have been written. *India and the Global Financial Crisis: Managing Money and Finance* is a welcome addition to this list. The book is a compilation of twenty-three selected speeches delivered by the author as Governor of the Reserve Bank of India from September 2003 to September 2008, which was very eventful both for the national and global economy. Aravind Panagariya, former professor of economics at Columbia University and the former chairman of NITI Aayog, appreciates the author and says,

> At a time when the financial crisis rocked the global economy and banks around the world seen their capital bases melt away, Indian banks and other financial institutions remain in excellent health. The credit for this largely goes to the foresight of one man: Dr. Yaga Venugopal Reddy.

There are seven units in this book, with a long introduction of forty pages. The first unit of the book has four chapters. The first chapter of the first unit covers the role of public policy in global economic regulation. The author rightly described that economic integration occurs through three channels, namely moments of people, of goods, and finance or capital. The first movement of people, that is, the opportunities to move and connect freely that is the notable achievement of recent globalization (p. 42). By describing the second one, which is the movement of goods, the author emphasizes two types of barriers, namely natural barriers and artificial barriers, and the third one is capital movement for which interplay between technology and public policy becomes relevant.

The third section of the units deals with the challenges of the economy. By describing the challenges, Dr. Reddy chose to rewrite the monetary policy statement of RBI for January 2016 and April 2016, namely infrastructure, fiscal deficit, and agriculture are three critical issues for maintaining growth momentum. The poor state of infrastructure, both in terms of quality and quantity, is a matter of agitation for the business class and policymakers. By discussing the third factor, which is the fiscal deficit, Dr. Reddy rightly appreciated the fiscal consolidation policy of the government. However, he also addressed the issues of power subsidies and the quality of education and health services (p. 85). In the last part of the chapter, Dr. Reddy appreciated the macroeconomic efficiency of India in relation to the high-growth performers of Asia and noted the competitiveness of the Indian manufacturing industry, despite the higher per-unit power costs compared to other Asian economies. Dr. Reddy rightly pointed out the factors, namely political stability, anti-terrorism policy, woman empowerment, and demographic dividend are the measure factors for maintaining stability in the growth of the Indian economy.

In the last chapter of the first unit, Dr. Reddy shared the success stories and reform experiences of the Indian economy. The author narrated that unlike other countries, the Indian approach to reforms was gradual but steady rather than a big bank approach. The reforms have been viewed as a process rather than an event and were inclusive (p. 99). From 2003 to 2007, Indian economy entered a high-growth phase, with the GDP averaging 8.6% per annum. India's growth is mainly driven by domestic consumption, which contributed on average to almost two-thirds of overall demand. The second and third units of the book cover the different reform measures undertaken by the central bank to strengthen the financial sector of the country, particularly the banking sector. Some of the reform measures undertaken by the central bank are as follows:

- For improving efficiency and productivity of the system, clear and transparent guidelines were laid down. New private sector banks and foreign banks were allowed to compete with liberal entry norms (p. 122).
- A precondition clause introduced that new banks had to be fully computerized from ab initio.
- The equity base of most public sector banks was expanded by infusing private equity.
- To converge toward international practices, some of the global practices are included, namely risk-based capital standards, asset classification, provisioning requirements for non-performing assets and standard loans, exposure limits of single and group borrowers, and investment valuation norms.
- "To minimize settlement risk in the money, Govt. Securities and forex market the clearing corporation of India Ltd. Was established in 2002" (p. 123).
- Debt recovery tribunals were introduced for the adjudication of delinquent loans concerning banks.

The fourth unit of the book states the impact of different monetary policy instruments, that is, both direct and indirect instruments, in the short as well as in the long run: "In practice, the choice between direct and indirect instruments is not easy. While direct instruments are effective, they are considered inefficient in terms of their impact on the market" (p. 199). In the fifth unit of the book, Dr. Reddy discusses the communication prospects and problems of a central bank: "A central bank communication is varied and includes the general public, financial market participants, media persons, entities that it regulates, rating agencies, international and multinational bodies etc." (p. 223). The sixth unit covers the matter relating to capital account liberalization, which includes foreign exchange reserve management, government-owned investment vehicles and capital flows. The last unit covers global financial imbalances, their causes, and their impact on both national and international economies.

In summary, this book is a deeply researched piece of work in which Dr. Reddy appreciated the stand of India in the face of global financial imbalances and agreed that "despite soaring economic growth, real per capita incomes, and therefore the standard of living in the developing countries, remain well below those in the developed countries" (p. 335). The author's emphasis on inclusive growth for poverty eradication and on balanced reform in both real and financial sectors—to ensure there are no financial sector constraints on real sector activity—is worth noting. Overall, the book is remarkably successful in its objective of providing a sketch of the global financial imbalances, their impact on the Indian economy, and the reform measures undertaken during this crucial period.

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- The journal does not consider a paper that has been published elsewhere or that is under submission to another publisher. Authors must attest to this at the time of submission. It is also author's responsibility to disclose any potential conflict of interests regarding their submitted papers.
- Authors will be provided with a copyright form once the contribution is accepted for publication. The submission will be considered as final only after the filled-in and signed copyright form is received.

Basic formatting of the manuscripts

The journal publishes the following article types:

- Research Articles
- Book Reviews
- Case Studies
- Commentaries
- Perspectives

Recommended length of articles is 6000-8000 words, inclusive of tables, figures and references. All regular/research articles must be accompanied by an abstract of up to 200 words and 4-6 keywords.

Please refer to the Submission Guidelines on the journal website for details on formatting.

Spelling and numerical usages

- Consistent use of either British or American spelling is advised, but not both at the same time.
- Spell out numbers from one to nine, 10 and above to remain in figures. However, for exact measurements use only figures (e.g. 3 km, 9%). Please use 'thirteenth' instead of '13th century'; use '1960s' instead of 'nineteen sixties'.

Quotations, notes, tables and figures

- British English uses single quotation marks to indicate quotations or dialogue, double quotation marks for quotation inside quotation (nested quotation). American English flips that method and uses double quotation marks to indicate quotations or dialogue, and single quotation marks for nested quotations. Either British or American punctuation patterns should be used and it should not be a mix.
- Notes should be numbered serially and presented at the end of the article. Notes must contain more than a mere reference.
- Tables and figures must be cited in the text, and indicated by number separately (Table 1), not by placement (see Table below). Source details for figures and tables should be mentioned irrespective of whether or not they require permissions.
- All photographs and scanned images should have a resolution of minimum 300 dpi and 1500 pixels, and their format should be TIFF or JPEG. Due permissions should be taken for copyright-protected photographs/images.

References and their text citations

- References and their citations should be given in accordance with APA 7th edition.
- Please ensure that all references mentioned in the reference list are cited in the text and vice versa.

For detailed style guidelines, please visit https://journal.iimshillong.ac.in

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