

## Mapping the Knowledge Landscape of Green Purchase Intention: A Bibliometric and Co-Citation Network Analysis

**Dr. Himanshu Kataria**

Assistant Professor, Department of Management and Commerce, Jagannath University, Delhi NCR,  
Haryana, India, hkataria2408@gmail.com

ORCID ID: <http://orcid.org/0000-0002-3237-4870>

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### ABSTRACT

The study aims to examine the green buying behavior of the consumers and the influence of factors of the green marketing strategies on the purchase intentions of the buyers. Bibliometric analysis was implied in this study during the period of 1994 to 2024. Performance mapping analysis and scientific performance analysis was performed on 526 research articles obtained from WOS and 256 research articles obtained from Scopus using VOSviewer software.

The performance analysis was carried out to know the past trend of the studies, country specific citation and source (journal) based analysis. Furthermore, scientific analysis was performed by diagnosing the analysis of the top co-citation references and top co-citation authors. Performance trend and scientific analysis aids in understanding of the basic trends of the green purchase intention, green marketing tactics and the factors that affect the green marketing. This study mainly focused on the green consumer buying behavior in Asian Countries, which further assists in the prediction of the future green consumption through the trend analysis of the past studies. The major gaps in this study were identified and the researcher has drawn inferences and future implications.

**Keywords:** Bibliometric, VOSviewer, Performance trend, scientific analysis, Green consumer, Green purchase intention

### 1. Overview

Asia is socializing at a very rapid pace. The region was predominantly rural in the 1950s, having 17% of its 1.4 billion inhabitants residing in urban areas or villages. Moreover, United Nations projections (2004) indicated that 55% of Asians or 2.7 billion individuals will live in civilized areas by mid-2022. Therefore, from 2015, nearly all the Asia's population development will take place in developed areas. Therefore it affects the environment which in turn leads to environmental degradation and climate change<sup>i</sup>. The world experienced greenhouse gas emissions and high temperature record as a result impact on the climate change. Environmental problems are the contribution not only of the manufacturing processes but also of the consumption patterns (Liu et al., 2010)<sup>ii</sup>. In the last decades changes in the pattern of human consumption are noticeable due to increase in population due to which environmental degradation is the major outcome (Soomro et al., 2020)<sup>iii</sup>. Lancet commission (2018)<sup>iv</sup>

explained the adverse effects on the health in the reports on the global pollution and its effect on the health of the individuals and also explained that it can be preventable. Ajzen (1991)<sup>v</sup> in the theory of planned behavior explained that the subjective norms, attitudes and perceived behavioral control affect the behavior of the people. Consumer behavior is the researching of individuals or groups who try to pursue purchasing, assessing and discarding of the products and services after use to satisfy their needs. However Boztepe (2012)<sup>vi</sup> described companies as socio-economic entities and they cannot refuse the environmental protection particularly the marketing managers that encounter with the consumers directly. In spite of old approaches that focused only on the profit making today marketing managers have to take serious issues regarding the social problems. In fact, recent research has stipulated that a large number of organizations are entering the green goods market for any of the following reasons: (i) because of interest in ecological preservation; (ii) willingness to promote green product. In making green purchasing decisions, green consumers value their part in protecting the environment. Furthermore, since the last three decades buyer behavior has been the major area of interest for the marketers (Peighambari et al., 2016). Studies of consumer behavior tries to find out the buyer's decision making process (Rojhe, 2020<sup>vii</sup>). More significantly, it also incorporates examining the consumer's mental, emotional and behavioral reactions that pave the way for these processes (Santos et al., 2022)<sup>viii</sup>. A number of factors affect the consumer behavior<sup>ix</sup>. Changes in consumer behavior can happen for a number of reasons that includes: personal, economic, psychological, contextual, and social factors. Consumer psychology and behavioral economics are the major areas that have highlighted the factors that affect the consumer behavior (Siddique et al., 2020)<sup>x</sup>. Therefore, the consumers are mindful of their purchase of goods and services (Kumar, 2024)<sup>xi</sup>. Hence, the research interest in green marketing takes its roots in today's marketing concept. Hence the traditional marketing strategies are changing to green marketing strategies that was started from 1980s and today expanding at a fast pace and are followed by professionals as well (Alhamad et al., 2019)<sup>xii</sup>. For this reason, since the last three decades the green marketing concept has arisen on worldwide level. Therefore it enfold an extensive gamut of events namely product moderation and development and process change. This is growing at a faster pace since the last three decades because of the increase in concern of the customers towards sustainability (Devi Juwaheer et al., 2012<sup>xiii</sup>). Additionally, research interest in the green marketing is rising since the last three decades. Moreover, over a period of time, studies have been done on the green consumer behavior (Tong et al., 2023)<sup>xiv</sup>. The society's concern for the ecology has unfolded a new kind of buyer who reflects aforementioned concerns in their buying decisions (Li et al., 2023<sup>xv</sup>; VUONG, 2024)<sup>xvi</sup>. Worldwide studies also revealed that buyers' ecological concerns have trigger to moderately change their buying patterns and reassess the goods they buy (Jansson et al., 2010<sup>xvii</sup>; Wang et al., 2019<sup>xviii</sup>; Abdo et al. 2023)<sup>xix</sup>. Also the idea of novelty in research to develop eco innovative products that require the production, assimilation and development of products that causes reduction in the environmental degradation is being adopted by the organizations (Sharma et al., 2022)<sup>xx</sup>. Therefore, studies have advocated that when consumers are concerned about ecological issues they decide to purchase green goods and purchase according to criteria beyond

regular consumption to a large extent (Chanda et al., 2023<sup>xxi</sup>; Saravni Cari and Reddy, 2019<sup>xxii</sup>). The current systematic review of literature contribute towards the existing literature via explaining in depth the concept of green marketing and the factors that are associated with green marketing as research gap was found in this area. Basically this research sought to explain the following research questions: RQ1: What are the factors that are associated with green marketing? RQ2: What are the reasons that compel the consumers to buy green products? RQ3: What are the green product attributes that are appealing for the consumers to buy?

### 1.1 Green Products' Consumption

Green products' consumption is the emergent opportunity for the marketers to averse the damaging effects of the contamination on the individual's health (Chaudhary, 2018)<sup>xxiii</sup>. Green products are produced specifically to protect the ecology while producing minimizing the use of harmful radicals, global warming, deforestation, acid rain, air pollution, depletion of fossil fuels and waste (Akehurst et al., 2012<sup>xxiv</sup>; Lamichhane, 2022<sup>xxv</sup>; Chang, 2015<sup>xxvi</sup>). It provides prospective benefits for the environment and human health (Chanda et al., 2023)<sup>xxvii</sup>. This is why environmentally aware consumers have shown an increased interest to use them. According to Gupta and Singh (2018)<sup>xxviii</sup> Green consumers are the consumers who actively buy green products and have concern about the environmental issues and provide solutions for them. After implying CFA they found that six factors namely: attitude towards the behavior, ecological consciousness and eagerness to buy green products, green self-identity and subjective norms are the influencing factors of green consumption behavior. They concluded that buying behavior is the direct result of the consumers' buying intention. Purchasing behavior of customers is a task that incorporates the tasks that a person undertakes regarding a specific product while taking a decision to buy (Kushwaha and Sharma, 2016)<sup>xxix</sup>. For instance of green goods the foremost responsibility of the buyers is to have good that is made using eco-friendly resources and processes (Taghikhah et al., 2019)<sup>xxx</sup>, and its utilization should not harm the ecology at any rate (Wu and Chen, 2014)<sup>xxxi</sup>. Akehurst et al. (2012)<sup>xxxii</sup> examined that increased ecological awareness among the consumers raised the purpose to purchase green products. According to them, the lifestyle variables were more effective in affecting the eco-friendly consumer behavior. However, Lee (2008)<sup>xxxiii</sup> investigated that social influence followed by ecological concern; self-consciousness and perceived ecological responsibility were the major predictors of the adolescents' green buying intention in Hong Kong. Furthermore, it also includes the discarding of the used goods after consumption. There is a component of dignity attached with purchasing green in the midst of consumer community. Therefore a potential market exists if marketers understand the needs and create customer satisfaction through recognizing green products. Moreover, sustainable consumption refers to consumers' preference not to buy and consume goods that are dangerous to the surroundings, but rather consumers are obliged to consume green products (Sinha & Annamdevula, 2023)<sup>xxxiv</sup> that are beneficial to the environment (Elkington & Hailes, 1988<sup>xxxv</sup>; Steg & Vlek, 2009<sup>xxxvi</sup>; Ramtiyal et al., 2023<sup>xxxvii</sup>). According to Handayani and Prayogo (2017)<sup>xxxviii</sup> a deeper understanding into the

sustainable consumption will present more clear and good understanding for the businesses regarding the issues of environmental degradation. According to them with the increasing awareness of the consumers from a number of media sources (television, magazine, newspaper etc.) leads to more interpretation of the eco-friendly labels written on the product and therefore more purchase of the green products and hence contribute more in the sustainability of the environment. By understanding in depth the major issues related to sustainable consumption, future for organizations will be disentangled, explicit and better for both their businesses as well as for sustainable development. Sustainable consumption patterns can remarkably reduce social along with ecological impacts (Steg & Vlek, 2009<sup>xxxix</sup>; Lopes et al., 2024<sup>xl</sup>; IPCC, 2015<sup>xli</sup>).

## 1.2 Green consumers' Purchase Intention

The buyers' eco-friendly concern is the reason of the origination of newly discovered type of customer who reflects this issue in their buying decisions (Peiris et al., 2024)<sup>xlii</sup>. Therefore, a number of researches have explored that consumers have care for the ecological issues, they take decision to buy goods and purchase according to criteria beyond normal consumption. Consumer perceptions can also play role in molding the purchasing behavior along with decision-making process. Thus, each and every buyer has their own way of understanding regarding green products. Therefore, the green consumers who buy green products evaluate the ecological and economic advantages that further instigate their buying intention to buy green products (Esakki, 2017)<sup>xliii</sup>. Yusuf and Fatima (2015)<sup>xliv</sup> did study on the young population and found that eco-friendly goods are good as well as healthy for them. Essentially, passionate green buyers start by paralleling their buying intention with buying behavior (Akehurst et al., 2012)<sup>xlv</sup>, that is, presuming other things constant as the affordability, quality, green consumers' purchasing intentions have been shown to predict green behavior (Chan, 2001)<sup>xlvi</sup>. For example, if the income variable were divided into low and high income brackets based on respondent data, the results could indicate significant differences between distinct groups with a propensity to purchase green products. According to Ahmad and Thyagaraj (2015)<sup>xlvii</sup> Green consumption, sometimes called sustainable consumption, is a new consumption model that facilitates environmental conservation while keeping away or decreasing ecological damage through medium consumption management and they found that consumers have started to use the environmental friendly goods<sup>xlviii</sup>. Khan et al., 2023<sup>xlix</sup> investigated the young consumers' green purchase intention. According to them online shopping platform provides buyers the convenience and accessibility to the wide range of products. Therefore technological and relational factors affect positively the green buying intentions of the young consumers. The focus of consumerism movement is on to save the consumers from unethical marketing practices that have played a significant role in the outspread of eco-friendly marketing initiatives (Chan, 2013a)<sup>l</sup>. Tan et al. (2019)<sup>li</sup> investigated the factors of green buying decision among the consumers (young) in Malaysia. They found eco-label, environmental consciousness, advertising and price as significant determining factors of green purchasing behavior. However according to them attitude was not found to be determinant of the consumer buying behavior.

### 1.3 Green marketing

Researchers have found that consumers are becoming more acquainted with the environment and their purchases, and therefore changing their purchasing behavior (Papdopolus, 2010)<sup>lii</sup>. Therefore, a new market emerged (Cornwell & Schwepker, 1995)<sup>liii</sup>. In the late 1980s research on green marketing took its roots in the market and is an important topic for the marketers and academicians since the last three decades (Juwaheer (2005)<sup>liv</sup> because of the many environmental issues: global warming, pollution, degradation of natural resources and depletion of species (Machová et al., 2022)<sup>lv</sup>. With a view to achieve the competitive advantage in today's competitive world marketers focus on the production of environmental friendly green products (Jouzdani & Esfahani, 2020)<sup>lvi</sup>. According to FuiYeng and Yazdanifard (2015)<sup>lvii</sup> Green marketing is the latest topic in the research as it facilitated the environment friendly nature among the consumers. Eco-friendly awareness among the consumers is necessary as it helps in the minimization of the ecological degradation. Green marketing concept is gaining a lot of attention since the last three decades (Lee, 2008<sup>lviii</sup>; Wang et al., 2020<sup>lix</sup>; Ali, 2021)<sup>lx</sup>. It is the marketing of goods manufactured to protect the surroundings. As a result enfold a broad range of openings namely: packaging change, process change, product modification and advertising review. Green marketing is a distinct sustainability strategy that businesses are looking to include into their goods since businesses are aware that green marketing will transform their brand that will appear attractive to customers; moreover, it can help the company in reducing their costs. According to Polonsky et al. (1998)<sup>lxi</sup> green marketing, using terms for example environmental marketing. The intention of green marketing strategies is to obligate the buyers to utilize green goods for a protected natural ecology (Singh et al., 2022<sup>lxii</sup>; Juwaheer et al., 2012<sup>lxiii</sup>). The tactics obligate the buyer to pick out the products which are eco-friendly and safer to consume as opposed to related goods accessible in the market place (Olson, 2013)<sup>lxiv</sup>. The aspect of green marketing is scaling up as compared to slow formation in the last few years and researches have revealed that consumers are conscious about advertising campaigns that are developed as per the green efforts of the organizations (Rosenbaum and Wong, 2015)<sup>lxv</sup>. Although green marketing is growing in practice to a larger extent but little research has been done academically (Lu, et al., 2013)<sup>lxvi</sup>. Companies tried to differentiate their products from others via offering green products to the customers in order to retain them and contribute towards the sustainable environment (Amoako et al., 2020)<sup>lxvii</sup>. The outcome of Rio+20 make mandatory for all the manufacturing companies, to manufacture sustainable brands that are universally acceptable (Amoako et al., 2020)<sup>lxviii</sup>. Hence, it is on the grounds of organizations that want to find new ways to encourage sustainable salubrious consumption in order to be competitive that concurrently safeguard the ecology while encouraging green marketing policies. Green marketing encourages ecological along with societal wellbeing (Trivedi and Sharma, 2018)<sup>lxix</sup>. In particularity, consumers as well as society should target for sustainable ecological protection in order to secure healthy consumption (Solvalier, 2010)<sup>lxx</sup>. In the same way, organizations promote green marketing practices, focus of which on the consumption and production of green goods. Therefore, Gheorghiu et al. (2013)<sup>lxxi</sup> call for eco-friendly marketing tactics that target the green buyer who search for consumption of those goods that protect



the environment. Moreover, lately, a number of researchers are searching to investigate the association among green marketing and green buying intention. Furthermore, in both the developed and developing regions, marketers are strongly promoting the green products consumption; thus, overpowering the heart of green pessimist to become fervent green buyers and green brand supporters (Kong and Zhang, 2013; Matthes, Wonneberger and Schmuck, 2014; Matthes and Wonneberger, 2014).

#### **1.4 Factors affecting green marketing**

According to Sharma et al. (2013)<sup>lxxii</sup> the elements that influence the green consumer behavior are: environmental protection consciousness and concern, price and quality, accessibility, perceived consumer effectiveness (PCE), ecological attitude, and promotional activities. Rahbar & Abdul Wahid (2011)<sup>lxxiii</sup> explained the importance of green promoting tools: eco-brand, environmental advertisement and eco-label (Jaiswal et al., 2022)<sup>lxxiv</sup> that help in easy understanding of green goods attributes, consequently and therefore, guide the buyers to buy eco-friendly products.

#### **Environmental consciousness and concern**

As Rapid increase in economy leads to environmental degradation, consumption habits are changing in response. In spite of that ethical obligation, environmental concern, green individuality and prevailing beliefs are positively significantly related to the green buying intention. Furthermore, perceived cost of green buying negatively associated with price sensitivity (Sun et al., 2022)<sup>lxxv</sup>. Individuals' likes and dislikes, worries and compassion affect the environmental concern. Sony and Ferguson (2017)<sup>lxxvi</sup> examined Thai consumers' responsiveness regarding natural disasters. They found a less positive association between Thai consumers' environmental value and green lifestyle behavior followed by them. This indicated a specific value-action gap within this association. De Jesus et al. (2021)<sup>lxxvii</sup> revealed that respondents are more inclined with the living in harmony with the environment. Along with this respondents were in opinion to buy the products which can be refilled and they were in favor of buying green product that harm less the environment. Therefore respondents were in the opinion that consumers must buy eco-friendly products. However, Lee (2009)<sup>lxxviii</sup> depicted that the female adolescents of Hong Kong have higher score in ecological attitude and concern, perceived seriousness of ecological problems, perceived ecological responsibility, colleague influence and green buying behavior in comparison to male youngster.

#### **Characteristics of the consumer**

Duong (2022)<sup>lxxix</sup> examined the role of personality traits (agreeableness, conscientiousness, openness to experience and neuroticism) on the green buying behavior. The study found that extraversion along with other traits was also correlated with green buying behavior. Joshi and Srivastava (2019)<sup>lxxx</sup> found positive effects of the moderating effect of consumer engagement on the brand experience and green purchase intention of the consumers towards green apparel products. Chen et al. (2013)<sup>lxxxi</sup> in the opinion that the psychological activities of green buying behavior include emotional, cognitive and volitional process. Phan et al. (2023)<sup>lxxxii</sup> investigated the cognitive components and e-social interactions effect on the green consumers' buying intention. They found positive impact of cognitive

factors on the green product purchase intention, however social interactions did not affect this intention. However green product consumption is becoming an increasingly foremost research interest none of the previous studies have conveyed how consumers' sensitivity to interpersonal effects might affect their green purchasing intentions. Raukoff & Wu (2013)<sup>lxxxiii</sup> research results showed that consumer novelty has a significant influence on green buying behavior.

### **Demographic profile of consumer**

Marketers generally describe consumers based on socio-demographic, behavioral, and psychographic variables. Socio demographic segmentation out of them is the most commonly used (Kotler & Armstrong, 2004<sup>lxxxiv</sup>). The purchasing attitude and consumption of a good attributed to behavioral segmentation. The variables included in this segmentation are: occasion, status, consumption rate, readiness to buy stage, loyalty, benefit and attitude (Kotler and Keller, 2012<sup>lxxxv</sup>). Lifestyle segmentation requires understanding the consumers' activities, viewpoint, values, perspective and way of living (Goyat, 2011)<sup>lxxxvi</sup>. Dimitriadis (2011) highlighted that lifestyle segmentation is an effective way to describe some specific groups of customers. Additionally, Straughan and Roberts (1999)<sup>lxxxvii</sup> observed that these variables are further relevant in comparison to using socio-demographic data. The significant cause is that individuals' beliefs and viewpoint are non-identical and contradictory (Goyat, 2011; Grunert et al., 2001<sup>lxxxviii</sup>). The results depicted that psychographic variables have positive affect on the environmentally conscious consumer behavior (ECCB). Furthermore, the lifestyles of middle-class buyers has a positive influence on ECCB and are more probable to buy green goods as compared to the other class group (upper-middle). The Green Consumer Profile result produces insight into consumers' buying habits in the GMS and an indication of how much they consider saving energy from home. After reviewing the existing studies it was found that socio-demographic variables have a remarkable influence on buyers' positive eco-friendly behavior, and many researchers have mentioned that these variables are the prominent factors that have influence on the positive eco-friendly behaviors. Bai and Wan (2012)<sup>lxxxix</sup> investigated that the demographic variables namely: age, gender, income status and education level were associated with green buying behavior. For instance, age and green buying behavior are positively associated; Green buying behavior is more apparent among young, high income level group, higher level of education and women, specifically those who are married and have children. However, the statistical association is not very high and at times research outcomes are even contrary. Previous surveys have found that the green consumers tend to be "highly educated, older, higher-income women with a liberal orientation," while the least taste for green buying behavior tend to be "young, apolitical men and less educated.

### **Impact of social media**

Ch et al. (2021)<sup>xo</sup> examined the impact of social media marketing on the green product consumer buying behavior. They found that eco-labels, consumers' attitude and green advertising have significant effect on the consumers' decision of green product purchase. Previous research found that more than 50 million businesses have opened a Facebook account and more than 88% use Twitter as part of their marketing communications platforms (Dwivedi et al., 2020)<sup>xci</sup>. The growing acceptance

and high usage rates of smartphones for accessing social media, on the other hand, have enabled long-lasting brand-consumer relationships, positive word-of-mouth, brand loyalty and influenced customer take-up consumer decision (Kong et al., 2020)<sup>xcii</sup>, and ultimately changed consumer behavior (Nawi & Faizol, 2018<sup>xciii</sup>; Qureshi & Malik, 2016<sup>xciv</sup>).

### **Celebrity endorser (CE)**

Apart from social media, celebrity endorser (CE) is another important marketing strategy used by marketers. The statistic shows that CE has enabled 11 times higher returns on investments, especially through social media advertising (Lim et al., 2017)<sup>xcv</sup>, and there are now 25% and 61% of Chinese and South companies -Korean, 65% of Indian companies, and 15% of European companies support celebrities (Misra et al., 2019<sup>xcvi</sup>; Waqas et al. 2020<sup>xcvii</sup>). Meanwhile, CE in the virtual world has strengthened its influence by fostering closer connections with its fans through direct engagement. Its association with social media has significantly enhanced the attractiveness of celebrities and their potential to influence consumer behavior (Aw & Labrecque, 2020)<sup>xcviii</sup>. Therefore, celebrity endorsement creates credibility, competence, reputation, and adoration that could drive consumer brand recognition and recall, which ultimately increased the effectiveness of advertisements and developed a favorable attitude of the customer (Misra et al., 2019).

### **1.5 Challenges of green consumers**

Targeting green consumers can be challenging for companies. Green consumers not only desire green products, but also desire that companies engage in green practices, such as recycling and energy efficiency (Montague and Mukherjee, 2010)<sup>xcix</sup>. Ali (2021a)<sup>c</sup> found that the influencing of customer decisions through green marketing strategies determines the success of the marketing initiative (Papadas et al., 2019)<sup>ci</sup>. Focusing on the level of environmental knowledge of customers, it comes to surface that customers in developing countries have lesser knowledge in comparison to the customers in developed countries (Hasan and Ali, 2015)<sup>cii</sup>. This causes concern for the marketing departments in organizations since different customer niches demand different marketing solutions to influence their buying decisions (Hasan and Ali, 2015)<sup>ciii</sup>. Now the goal is to protect the consumer through the customer in the guise of green marketing and green consumerism. A green consumption pattern is the use of products that have not been manufactured using nonrenewable energy sources or non-recyclable materials and cause harm to the natural environment. Research conducted in developing countries showed that environmental knowledge plays a big role in shaping customers' buying behaviors. This concept has been discussed more in the context of social responsibility and less in marketing studies. Environmental problems also increasingly involve social problems, greatly affecting the stability of the country and society. In this context, the model of economic development to the detriment of the environment is eclipsed, and the model of sustainable development emphasizing the "triple bottom line" of economic, environmental and social performance has become the reference for decision-making. After gradually realizing these problems, green consumption also began to attract the attention of the majority of researchers.

## **2. Literature Review**



Green consumption behavior is consumption behavior in which consumers attempt to protect the ecological environment and minimize the negative impact of consumption on the environment during purchase, use and post-use. Green consumption is taking momentum in developed countries as well as in the underdeveloped countries (Rashid & lone, 2023)<sup>civ</sup>.

The theoretical foundations of GPI (Green Purchase Intention) are based on behavioral science frameworks, including the theory of reasoned action (TRA) and the theory of planned behavior (TPB). Over time, these frameworks have been enriched by the integration of additional concepts, such as environmental concern, ecological trust, perceived value, and social norms, which reflect the complexity of consumer decisions in green markets (Ajzen, 1991; Chen, 2010).

The theory of reasoned action (TRA), introduced by Fishbein and Ajzen (1975), posits that an individual's behavioral intention is determined by their attitude toward that behavior and the subjective norms surrounding it. In the context of green consumption, this implies that a consumer's positive evaluation of ecological products, combined with perceived social approval, increases their likelihood of intending to purchase those products.

Although the TRA and TPB models provide solid foundations, researchers have often extended these models to better capture the nuances of environmental consumer behavior. For example, the Value-Belief-Norm (VBN) theory (Stern, 2000) emphasizes moral obligations and ecological values, while the Theory of Consumer Values (TCV) (Sheth, Newman, & Gross, 1991) integrates functional, social, and emotional factors of purchase intention. Similarly, concepts such as ecological trust (Chen, 2010), environmental concern (Schlegelmilch, Bohlen, & Diamantopoulos, 1996), and perceived consumer efficacy (Ellen, Wiener, & Cobb-Walgren, 1991) have been integrated into extended models to provide a more comprehensive understanding of GPI.

Building on the TRA, Ajzen (1991) extended the model by introducing perceived behavioral control (PBC), resulting in the widely adopted TPB. PBC measures the extent to which individuals feel empowered to engage in a behavior, taking into account potential barriers such as cost, product availability, or convenience. The TPB has become the dominant theoretical focus in PBC research, with numerous studies confirming its explanatory power in predicting green purchasing intentions (Paul, Modi, & Patel, 2016).

Green consumption refers to consumption behaviors that reduce environmental pressure, including purchasing cars that use less energy, choosing public transportation, saving water, and supporting the recycling of product packaging, etc. (Akturan, 2018<sup>cv</sup>; Li, 2020<sup>cvi</sup>; Kazdin, 2009<sup>cvi</sup>). Since the concept of green consumption was proposed, it has continued to expand, and research on green consumption is expected to clarify the characteristics of green consumption. In addition, green consumption itself is more complex and comprehensive, and green consumption behavior requires more systematic behavior. Clear green consumption characteristics can distinguish different green consumption

behaviors, so as to better guide people towards green consumption. In 1987, Elkington and Hailes, British researchers, proposed the concept of "green consumption" in their book *Green Consumer's Guide*, and defined green consumption as avoiding the consumption of the following products: 1) products that put endangers the health of consumers and others; 2) products that consume a lot of resources during their production, use and disposal; 3) goods that are unnecessarily consumed due to excessive packaging, exceeding the basic substance or short shelf life; 4) use of products derived from rare animals or natural resources; 5) products containing animal cruelty or unnecessary deprivation; 6) products that harm other countries, especially developing countries (Li, 2020)<sup>cviii</sup>. According to the Chinese Consumers Association, green consumption has three main meanings: first, it encourages consumers to consume green products. Second, it pays attention to the elimination of waste in the consumption process to avoid environmental pollution; third, it guides consumers to change their consumption concepts, defend nature and pursue health. While pursuing a comfortable life, we should save resources and energy and achieve sustainable consumption. Barbarossa and De Pelsmacker (2016)<sup>cix</sup> investigated the difference between green and non-green consumers. They found significant difference between the purchasing patterns of green and non-green consumers towards eco-friendly products. Altruistic motives were significant for green in comparison to non-green consumers. Whereas negative ego-centric motives affected the purchase intention of non-green consumers comparative to green consumers. Bratu (2017)<sup>cx</sup> extended the literature by investigating whether the green consumerism is really an environmentally conscious behavior or not. The study revealed that conflicting economic, social, and cultural settings shape particular perceptions, driving forces of the consumption behavior. Chang (2011)<sup>cx</sup><sup>i</sup> argued that consumers may vary in their attitudes towards green purchasing behavior because of their ambivalent behavior in spite of their concern about the environment. Study revealed skepticism as a significant predictor of the ambivalent attitude towards the green consumption behavior. Do Paco et al. (2012)<sup>cxii</sup> studied the behavior of consumers towards environmental friendly purchase who are concerned about the environment protection and also the skepticism of consumers towards the green advertising made by the companies. They collected opinion of 320 students and found no significant difference between the skepticism of male and female students. And also they found no significant relation among skepticism and environmental behavior of the consumers towards green advertising. Shrum et al. (1995)<sup>cxiii</sup> investigated the variables that are directly related to the consumer purchase behavior for example; price consciousness and general care during the shopping, loyalty towards brand, new products' interest and along with these they also studied the attitude towards advertising and media preferences. They found that women who buy green products were more skeptical towards advertising in comparison to who do not buy. Whereas men's skepticism was unrelated with their green product buying behavior. Todd (2004)<sup>cxiv</sup> analyzed the significant relationship between green consumer aesthetic and environmental consciousness. They found that green marketing involves a sense of aesthetics that requires a connection between environmental health and beauty. Haws et al. (2014)<sup>cxv</sup> developed a scale GREEN of green consumption values. However not every consumer is ready to buy green products. Their measures of

GREEN predicted the environmental consumption behaviors more sufficiently in comparison to environmental measures drawn from the past studies. Grunert (1993)<sup>cxvi</sup> estimated that 30 to 40 percent of environmental degradation was due to the consumption activities of private households. As the environment continues to deteriorate, it has become a major public concern in developed countries. In addition, he also encouraged developing countries to join the green movement for environmental protection. The potential economic and social effects of environmental deprivation are particularly important for developing economies. Lopes et al., (2024)<sup>cxvii</sup> advocated that perceived quality and benefits plays significant role in green consumption behavior. Today, conscious consumers are wondering how their purchasing habits can minimize the negative impact on the environment. Pan (2003a)<sup>cxviii</sup> believes that green consumption advocates first moderate consumption, then green products, then spiritual consumption and finally a simple and easy life. Green consumption is conducive to changing the economic growth model and is the only way to achieve sustainable development. Green consumption behavior is a kind of prosocial behavior (Griskevicius et al. 2010)<sup>cxix</sup>. Myrseth and Fishbach (2009)<sup>cxx</sup> believe that prosocial behavior is similar to self-control. To be more specific, when exercising self-control, individuals must resist short-term temptations in order to achieve long-term benefits. For example, people resist the temptation to eat delicious foods to lose weight. Selfish behavior, as opposed to prosocial behavior, typically brings short-term benefits to the individual, which also constitutes a temptation that the individual must resist to engage in prosocial behavior. Furthermore, Martinsson et al. (2012)<sup>cxxi</sup> found that individual desire for self-control is positively correlated with prosocial behavior. Green consumption is a kind of environmental behavior. Researchers focus on the impact of environmental behavior factors, which is of reference importance for green consumption research. Green consumption is a consumption behavior in which customers will weigh cost, quality and environmental protection. Secondly, customers will use green products and brands to build and express themselves to a certain extent. The difference between green consumption and other environmental behaviors may lead to differences in the influence of certain factors on green consumption and other environmental behaviors. At present, the “5R” principle of green consumption is universally recognized around the world (Save resources, reduce pollution; live green, revalue; choose and buy objects used repeatedly, reuse; classify, recycle; protect nature, save) (Wang, 2006)<sup>cxxii</sup>. Since the emergence of green consumption, which arouses the popularity of a large number of consumers, is a kind of brand new consumption mode and living belief. As a consequence of this, the purpose of this systematic literature is to contribute towards the green consumption behavior of the consumers’ literature that affects the purchasing habits of the consumer through the green purchasing behavior of the consumers. This study contributes towards the environmental issues as well as green consumer behavior and green marketing. Furthermore, this study aware the companies and consumers regarding the environmental issues. Therefore this study is helpful for the marketer, academicians as well as marketing professionals to get aware about the sustainable environmental development. Moreover, this study also contributed towards the researcher to get an in depth knowledge about the green consumption, green marketing, green marketing affecting actors and green

marketing practices. As a result, a model was established to systematize the (i) green consumer behavior; (ii) factors affecting the green consumer behavior and (iii) marketing strategies for green marketing. Another purpose of this study is to organize and systematically review the articles related to consumer behavior, green purchasing behavior, green marketing practices and factors associated with the green consumer purchasing behavior to support the theoretical foundation of the green consumption behavior. This study takes into account environmental impact, resource efficiency and consumer rights. Green consumption is based on consumer health protection and resource conservation and is consistent with people's health and environmental protection, with its core being sustainable consumption.

### **3. Research methodology**

Bibliometric analysis is gaining popularity in research area since the last few decades and its popularity mainly because of the development of new software namely: Leximancer and VOSviewer and availability of databases such as Dimensions, Web of Science and SSCOPUS (Donthu et al., 2021)<sup>cxix</sup>. In this research VOSviewer is used to perform bibliometric analysis to uncover the research trend in the area of green product purchasing behavior of consumers, journal performance through citations, country specific citation analysis, and co-author citation analysis. A process<sup>cxix</sup> was established to determine the search terms, selection of data bases, selection of software for analysis and analysis of results. The steps are elaborated as under:

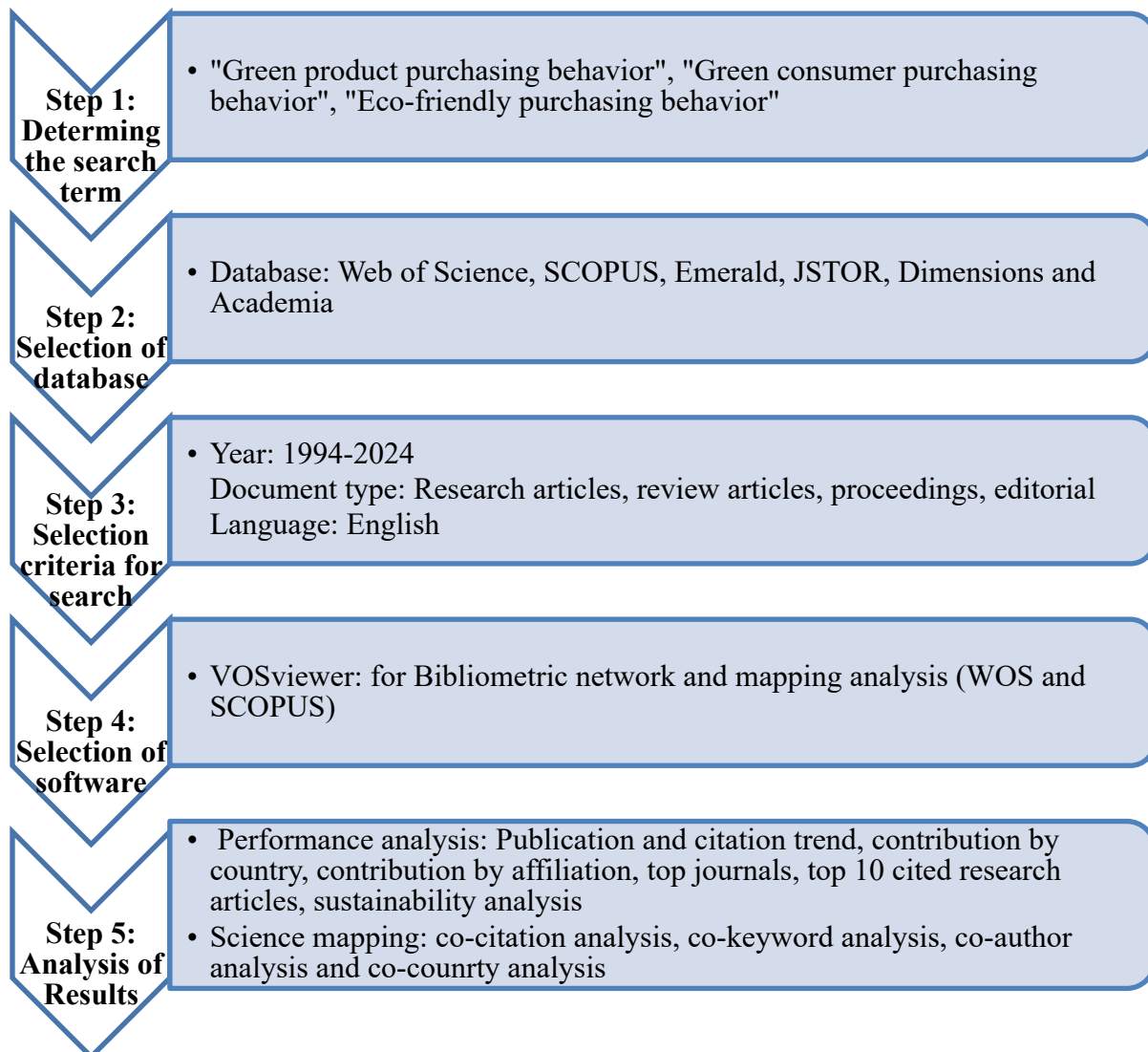


Figure 1: Steps for Bibliometric analysis (Self designed)

### 3.1 Defining the search term

The search term that were searched were: “Green buying behavior” or “Green purchasing behavior” or “Green consumer buying behavior” or “Eco-friendly buying behavior” or “Environment friendly consumer buying behavior” or “Factors affecting green consumer purchasing behavior” or “Green consumer purchase intention” or Green marketing practices” or “Green marketing strategies adopted by marketer”.

### 3.2 Database and time period in the collection of data

The data is collected from the Web of Science, Dimensions, Emerald, JSTOR, Scopus and Academia. A total of 1270 research papers from WOS, 828 research articles from Scopus, 128 research articles from Emerald, 17 from JSTOR and 279 from Dimensions and 358 research papers were collected from Academia.



**Table 1: Data collected from the data base**

| WOS       |          | SCOPUS    |          | EMERALD   |          | JSTOR     |          | DIMENSIONS |          | ACADEMIA  |          |
|-----------|----------|-----------|----------|-----------|----------|-----------|----------|------------|----------|-----------|----------|
| Collected | Relevant | Collected | Relevant | Collected | Relevant | Collected | Relevant | Collected  | Relevant | Collected | Relevant |
| 1270      | 526      | 828       | 506      | 128       | 32       | 78        | 17       | 358        | 58       | 279       | 38       |

Source: Author’s own work

Data was searched and collected from the data sources between the year 1994 to 2024. Research articles, literature review, conference proceedings, work in progress research, thesis and report were included in this study. A total of 2941 research articles and literature review listed in the search results of the Scopus, WOS, Dimensions, JSTOR, Academia and Emerald. Results were exported for bibliometric mapping from the data sources. Dimensions database have 260 million online citations, 146 million publications, 163 million patents, 31 million datasets, 7 million grants and 2 million policy documents. Dimensions provide approximately 70 percent of publications with full text indexing. Dimensions provide the largest collection of interconnected global research data and layer it with visual applications. Moreover JSTOR database provides access to more than 12 million journal articles, books, images and primary sources in nearly 75 disciplines. Emerald is one of the leading digital first leaders, working with thousands of Universities and business school worldwide in order to share knowledge to make a real difference. The company began in 1967 to become an independent academic publisher and in 2020 was a proud winner of the Independent publisher of the Year. Emerald has over 255,000 Journals, books and case studies across the various fields (Business and Management, Economics, Engineering, Technology and Social Sciences. As a research tool Web of Science provides a wide platform to the researchers on various subject matters. Web of Science has more than 2.5B cited references, 34.6 K peer-reviewed journals, 151 K books; 121M patent documents, 5.8 M dissertations and theses in 254 subject categories. The file extracted from WOS was used for the bibliometric analysis in VOS Viewer. A total of 1270 articles were exported from WOS. After refinement only research articles and review articles were considered, the number of them was 526. Text WOS file name was given to this file which was further used for the analysis in VOSviewer.

**4. Findings of the study**

**4.1 Performance mapping analysis**

A detailed analysis for year, country, citation, publication, author and Bibliographic coupling is performed using the files of database from WOS data base file (526) and SCOPUS data base file (256). Table 2 depicted the articles, review articles, proceeding paper and editorial material collected from WOS database. Furthermore, figure 3 and table 3 depicted the coauthors keywords obtained from the SCOPUS data base file used in VOS viewer. The keywords that are mostly used are sustainable consumption, green marketing, purchase intention, green products, environmental knowledge and green purchase intention.

**Table 2: Type of Documents**

| Field:<br>Document Types | Record Count | % of 526 |
|--------------------------|--------------|----------|
| Article                  | 498          | 94.677%  |
| Review Article           | 27           | 5.133%   |
| Proceeding Paper         | 3            | 0.570%   |
| Editorial Material       | 1            | 0.190%   |

Source: Researcher’s own work

Figure 3: Coauthors Keywords

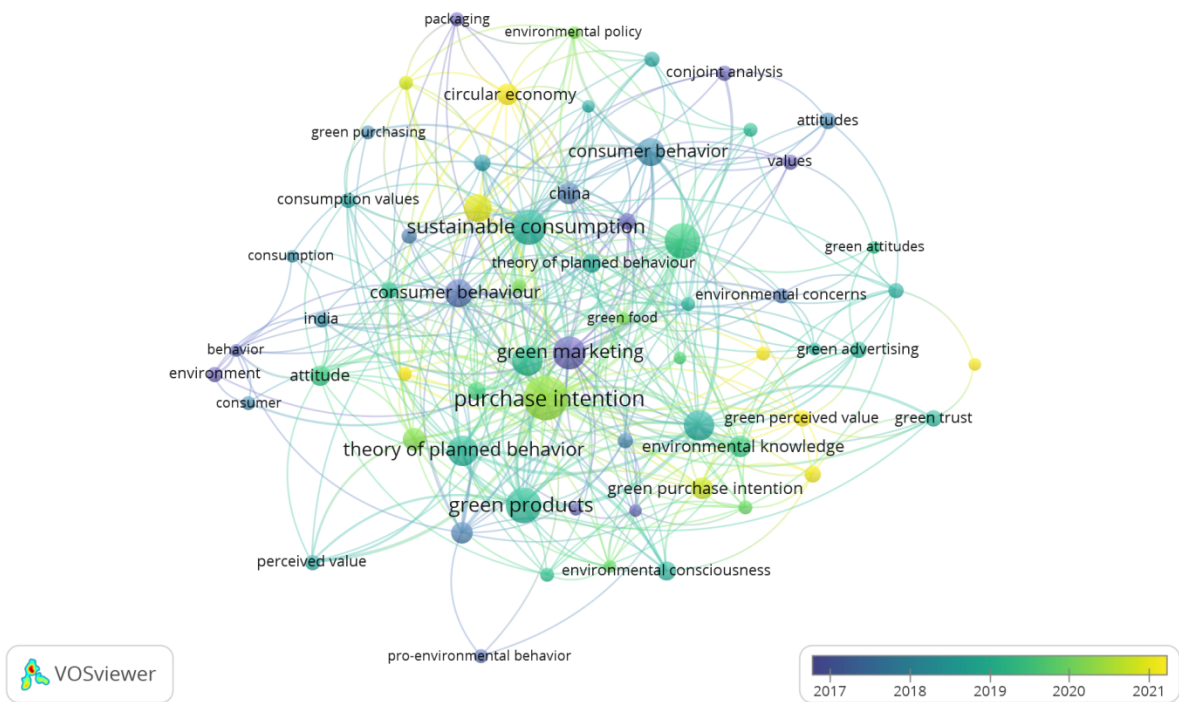


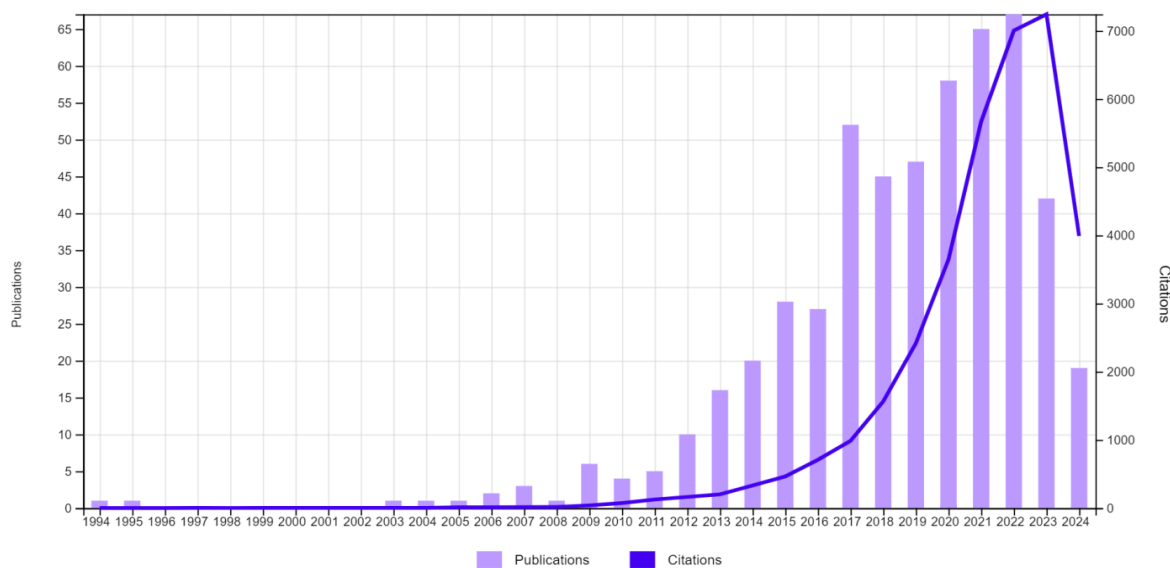
Table 3: Keywords

| Keyword                    | Occurrences | Total link strength |
|----------------------------|-------------|---------------------|
| purchase intention         | 57          | 83                  |
| sustainable consumption    | 39          | 60                  |
| green products             | 39          | 49                  |
| environmental concern      | 27          | 45                  |
| theory of planned behavior | 27          | 45                  |
| sustainability             | 37          | 44                  |
| green marketing            | 32          | 41                  |
| organic food               | 27          | 38                  |
| consumer behaviour         | 23          | 35                  |
| environmental knowledge    | 14          | 26                  |
| consumer behavior          | 23          | 24                  |
| green consumption          | 23          | 23                  |
| willingness to pay         | 16          | 23                  |
| attitude                   | 12          | 22                  |
| china                      | 14          | 22                  |
| consumer attitudes         | 9           | 18                  |
| green product              | 14          | 18                  |
| circular economy           | 15          | 17                  |
| environmental awareness    | 8           | 16                  |
| trust                      | 10          | 16                  |

### Number of publication analysis

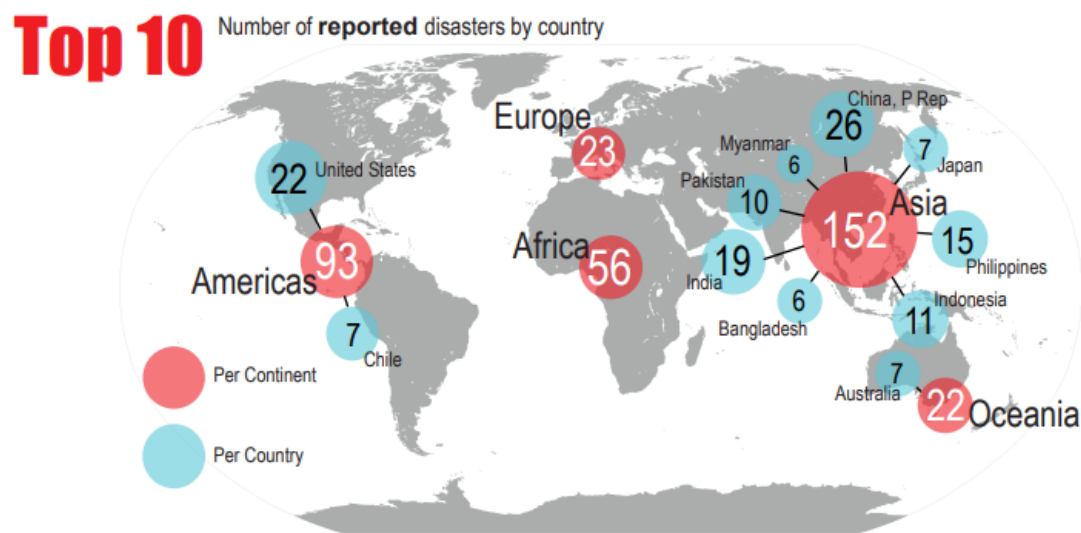
An analysis was done to depict the year wise publications trend related to WOS data base file on green product purchasing behavior presented in Figure 4. In the last three decades an important area of environmentally concerned consumers has arisen in the society. Therefore consumption patterns of consumers have changed in the last three decades (Zeynalova & Namazova, 2022)<sup>cxxv</sup>. For this reason research has become widened in the area of green consumers, green purchasing behavior and green marketing (Gracia-Salirrosas and Rondon-Eusebio, 2022)<sup>cxxvi</sup>. Figure 4 depicted that research in the area of green product consumption behavior is gaining importance since the number of publications have increased every year. However in the first phase from 1994 to 2009 there is slow growth in the published work but there is a rise from 2010 to 2022 in the research work. Furthermore there is a decline in the research work in the year 2023 and 2024. This shows that green product purchasing behavior on consumers was negligible during the time period between 1994 to 2008.

**Figure 4: Publication Year**



It can be observed that 402 studies have been published during this period. This may be due to the human awareness regarding the events flood, wildfire, extreme temperature and mass movement in 2015<sup>cxxvii</sup> as depicted through Figure 5. According to Global Sustainable Development Report (2015)<sup>cxxviii</sup> that provides a report on natural disasters, sustainable consumption and production, industrialization and use of big data in Africa responsible for monitoring the implementation of the new sustainable development program. It provides information on how changes in the human well-being can lead to decrease in environmental degradation.

**Figure 5: Areas where natural disaster took place in 2015<sup>cxxix</sup>**

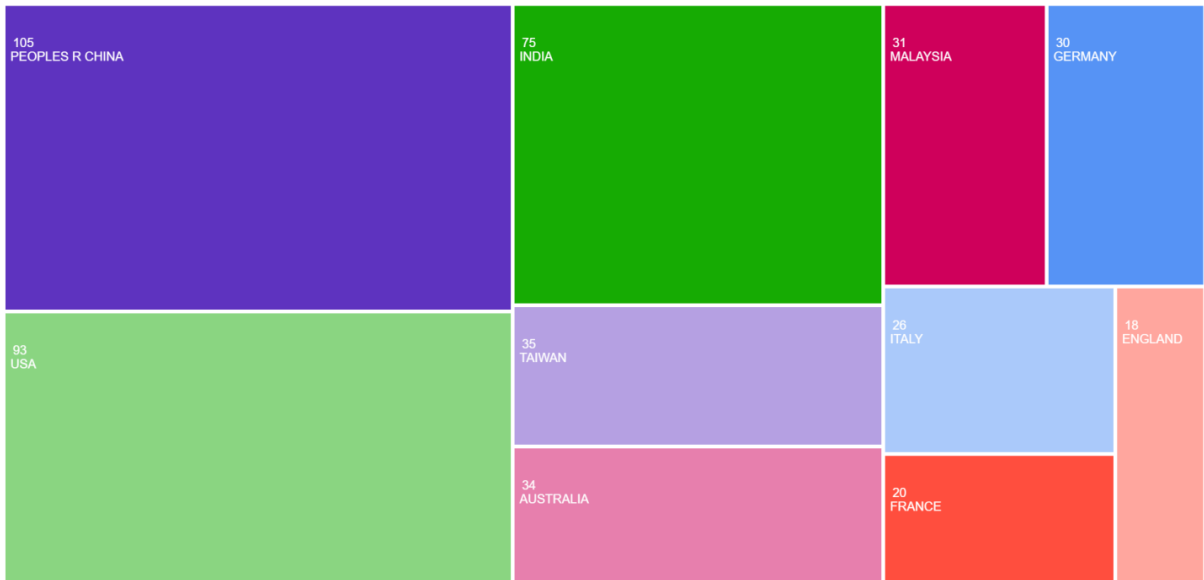


(1): Natural disasters: Epidemic and insect infestations not included

**Analysis based on Country-specific citation**

Figure 6 and 7 along with table 4 depicted the country-specific citation analysis that reveals that research articles and review published in China is 19.962% of the total publications. USA published 17.681% of the 526 and India 14.259 % of the total publications. Bibliographic coupling for 93 countries having 2 minimum citation from each country and minimum document from a country is 5 is depicted in the figure 7 and table 5. This may be because of the reason that in the last few decades China faced almost every type of natural hazard (sandstorm, flood, drought, landslides, earthquakes, debris flows etc.) according to GFDRR Annual report<sup>xxxx</sup>. In China all the provinces are facing natural disasters in one way or another. Approximately 195,820 people died because of the natural disaster in China. As a result public awareness programs in China are hiking.

**Figure 6: Top 10 Countries/Regions depicted maximum count of Green Product Purchasing Behavior (WOS)**



Source: Author’s own work

**Table 4: Top Countries/Regions depicted maximum count of Green Product Purchasing Behavior (WOS)**

| Field:<br>Countries/Regions | Record Count | % of 526 |
|-----------------------------|--------------|----------|
| PEOPLES R CHINA             | 105          | 19.962%  |
| USA                         | 93           | 17.681%  |
| INDIA                       | 75           | 14.259%  |
| TAIWAN                      | 35           | 6.654%   |
| AUSTRALIA                   | 34           | 6.464%   |
| MALAYSIA                    | 31           | 5.894%   |
| GERMANY                     | 30           | 5.703%   |
| ITALY                       | 26           | 4.943%   |
| FRANCE                      | 20           | 3.802%   |
| ENGLAND                     | 18           | 3.422%   |
| BRAZIL                      | 17           | 3.232%   |
| SOUTH KOREA                 | 17           | 3.232%   |

**Figure 7: Bibliographic coupling for countries (SCOPUS)**

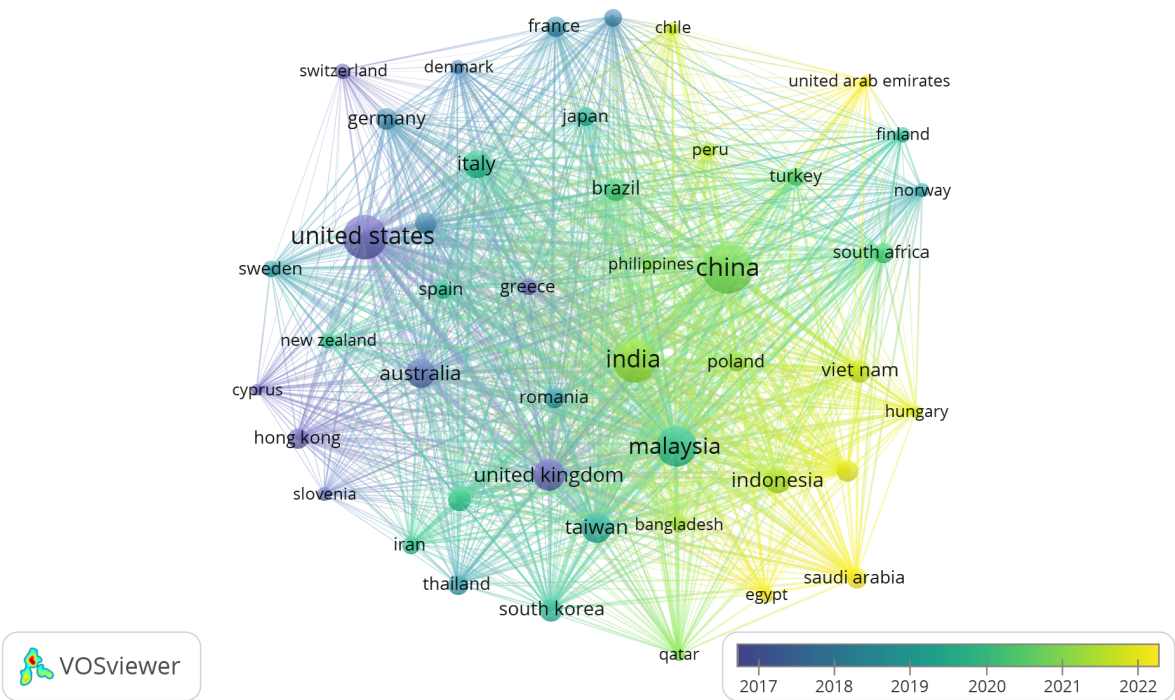


Table 5: Bibliographic coupling for countries (SCOPUS)

| Country        | Documents | Citations | Total link strength |
|----------------|-----------|-----------|---------------------|
| india          | 93        | 3783      | 79023               |
| malaysia       | 78        | 1909      | 61534               |
| china          | 131       | 3823      | 60460               |
| united states  | 94        | 4081      | 39110               |
| taiwan         | 40        | 1614      | 29328               |
| italy          | 33        | 1880      | 27025               |
| united kingdom | 43        | 6164      | 24881               |
| australia      | 38        | 1573      | 23335               |
| pakistan       | 18        | 333       | 17685               |
| portugal       | 21        | 828       | 17113               |
| viet nam       | 20        | 326       | 16076               |
| south africa   | 17        | 602       | 14632               |
| saudi arabia   | 16        | 120       | 14002               |
| indonesia      | 31        | 246       | 12968               |
| south korea    | 22        | 1460      | 12532               |
| poland         | 14        | 291       | 12444               |
| germany        | 18        | 1460      | 11548               |
| bangladesh     | 9         | 179       | 11388               |
| brazil         | 21        | 292       | 11376               |
| canada         | 19        | 992       | 10657               |

Source: Researcher’s own work

Analysis based on Journals

The citation source of the green product purchasing behavior depicted the analysis based on source.



The outcomes are obtained from the database (SCOPUS) with threshold value set of 25 are presented in Figure 8 and table 6. It represented journal’s name and their clusters in which the co-citations have occurred. The 407 journals are divided into clusters. The minimum number of documents of a source is 5 while the minimum citation of a source was set to 2. The first cluster is of Sustainability, whereas the second cluster is of Journal of cleaner production and the third cluster is business strategy and the environment. These clusters are mentioned in the table 6. Bibliographic coupling for citation as shown in figure 9 depicted that sustainability, and journal of cleaner production and business strategy and the environment are cited commonly. Bibliographic coupling for citation is a similarity measure for documents, source, author, country and organization when two works cite a common third work in their bibliography.

Figure 8: Citation sources analysis (SCOPUS)

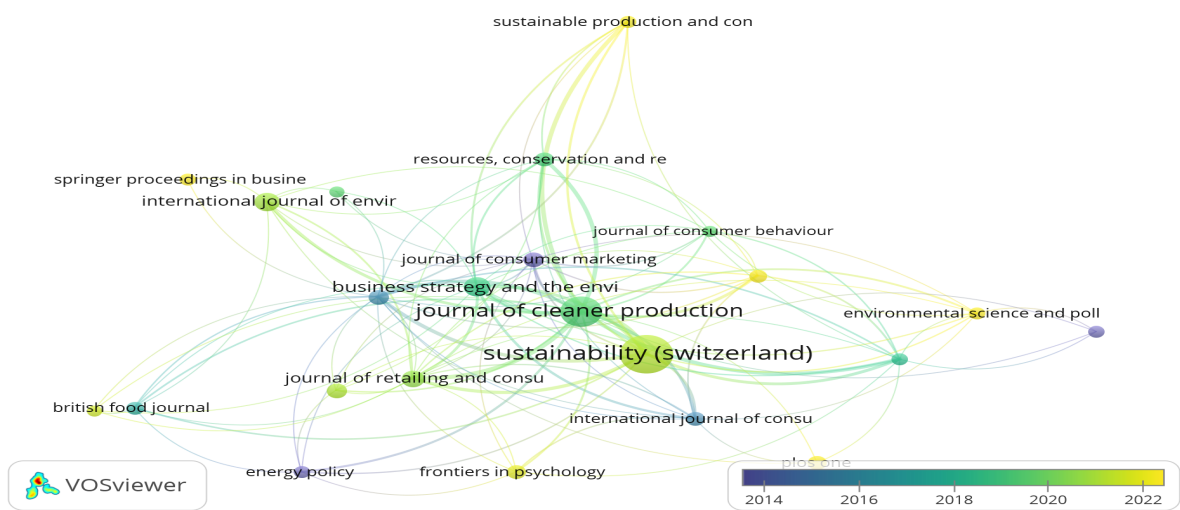
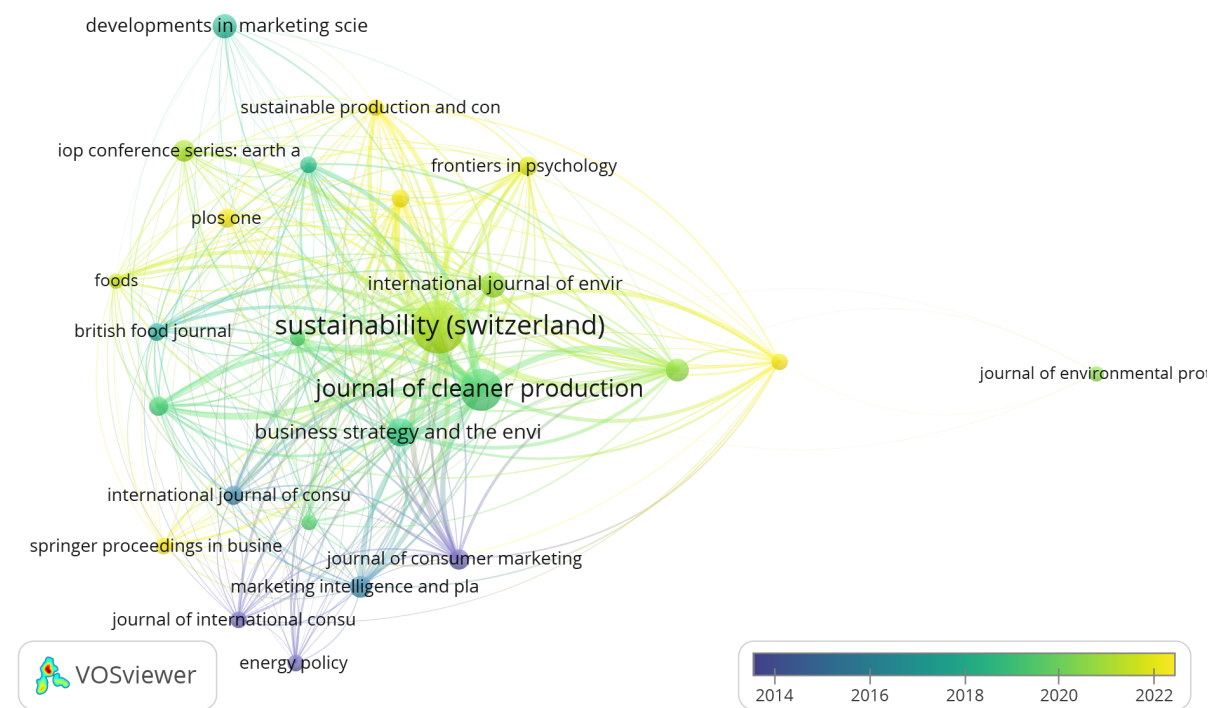


Table 6: Depicted citation sources (SCOPUS)

| Source                                     | Documents | Citations | Total link strength |
|--------------------------------------------|-----------|-----------|---------------------|
| journal of cleaner production              | 49        | 5514      | 205                 |
| sustainability (switzerland)               | 83        | 2316      | 124                 |
| business strategy and the environment      | 18        | 1216      | 67                  |
| journal of retailing and consumer servi... | 12        | 1648      | 57                  |
| marketing intelligence and planning        | 10        | 1209      | 54                  |
| sustainable development                    | 6         | 1206      | 42                  |
| resources, conservation and recycling      | 8         | 677       | 30                  |
| international journal of consumer stud...  | 8         | 507       | 29                  |
| sustainable production and consumpti...    | 6         | 186       | 28                  |
| environment, development and sustai...     | 7         | 97        | 23                  |
| journal of consumer marketing              | 9         | 1323      | 22                  |
| international journal of environmental ... | 15        | 324       | 20                  |
| environmental science and pollution r...   | 6         | 97        | 14                  |
| journal of consumer behaviour              | 5         | 336       | 14                  |
| british food journal                       | 7         | 415       | 13                  |
| energy policy                              | 6         | 556       | 12                  |
| frontiers in psychology                    | 8         | 99        | 10                  |
| iop conference series: earth and enviro... | 10        | 34        | 9                   |
| foods                                      | 5         | 80        | 5                   |
| journal of international consumer mar...   | 6         | 529       | 4                   |

Figure 9: Bibliographic coupling for citation (SCOPUS)



#### 4.2 Scientific performance analysis

After the discussion of performance analysis (years, country and citation) the next step is to conduct an advanced analysis of the data. Co-citation analysis was implemented in this study. Co-citation

indicates the relationship between items and is calculate on the basis of number of times they cited together. This happens when two elements, i.e. the author and the citing document in some other article, could be a measure of the proximity of these elements. Co-cited analysis is underway created based on Scopus indexed data. It includes cited references, cited sources and co-citation author.

#### ***Analysis of top 10 Co-citation references***

Relationship among the cited references was depicted using the Scopus database file. Fixing the minimum number of citations of a cited reference 20, a total of 43299 cited references were generated. 23 cited references were meet threshold. Figure 10 and table 7 depicted that ajzen i., the theory of planned behavior (1991), Organizational Behavior and Human Decision Processes, 50 (2), pp. 179-211 was cited 76 times which is followed by laroche m., Bergeron j., barbaro-forleo g., Targeting Consumers Who Are Willing to Pay More for Environmentally Friendly Products (2001), Journal of Consumer Marketing 18(6):503-520 was appeared second highest in link.

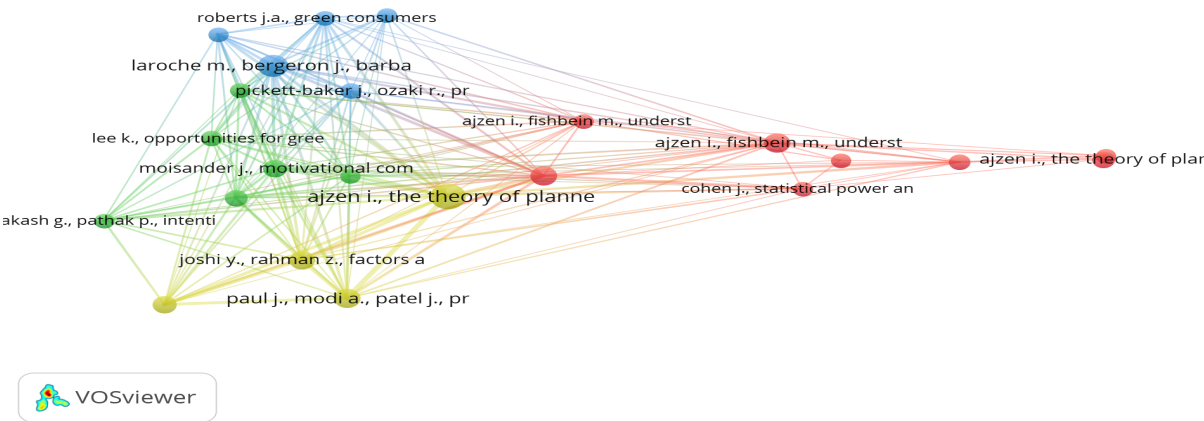
**Table 7: Co-citation for cited references**

| <b>Sr. No.</b> | <b>Cited reference</b>                                                                                                                                   | <b>Citations</b> | <b>Total link strength</b> |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------|
| 1              | "ajzen i., fishbein m., understanding attitudes and predicting social behavior, (1980)"                                                                  | 38               | 55                         |
| 2              | "ajzen i., fishbein m., understanding attitudes and predicting social behaviour, (1980)"                                                                 | 20               | 39                         |
| 3              | "ajzen i., the theory of planned behavior, organ. behav. hum. decis. process, 50, pp. 179-211, (1991)"                                                   | 29               | 14                         |
| 4              | "ajzen i., the theory of planned behavior, organ. behav. hum. decis. process., 50, 2, pp. 179-211, (1991)"                                               | 21               | 8                          |
| 5              | "ajzen i., the theory of planned behavior, organizational behavior and human decision processes, 50, 2, pp. 179-211, (1991)"                             | 76               | 162                        |
| 6              | "cohen j., statistical power analysis for the behavioral sciences, (1988)"                                                                               | 21               | 25                         |
| 7              | "fishbein m., ajzen i., belief, attitude, intention, and behavior: an introduction to theory and research, (1975)"                                       | 24               | 32                         |
| 8              | "fornell c., larcker d.f., evaluating structural equation models with unobservable variables and measurement error, j. mark. res, 18, pp. 39-50, (1981)" | 21               | 13                         |
| 9              | "fornell c., larcker d.f., evaluating structural equation models with unobservable variables and measurement                                             | 41               | 99                         |

|    |                                                                                                                                                       |    |    |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|
|    | error, journal of marketing research, 18, 1, pp. 39-50, (1981)"                                                                                       |    |    |
| 10 | "gupta s., ogden d.t., to buy or not to buy? a social dilemma perspective on green buying, journal of consumer marketing, 26, 6, pp. 376-391, (2009)" | 21 | 57 |

Source: researcher’s own work

Figure 10: Co-citation for cited reference



Analysis of top most cited organizations

For this analysis the minimum number of documents of an organization are fixed two in number and 1745 organizations are considered in this analysis. Only 52 sources meet the threshold. Table 8 and figure 11 depicted the top 10 organizations which have most cited publications. Optentia research focus area, north-west university, vanderbijlpark, south Africa has the highest total link strength 1293 and is placed in the first place followed by Institute of Management Studies, Banaras Hindu University, Varanasi, India have 1120 total ink strength and is placed in the second position which is further followed by Department of Management, Faculty of Business Administration, University of Tabuk, Tabuk, Saudi Arabia which have 1118 total link strength.

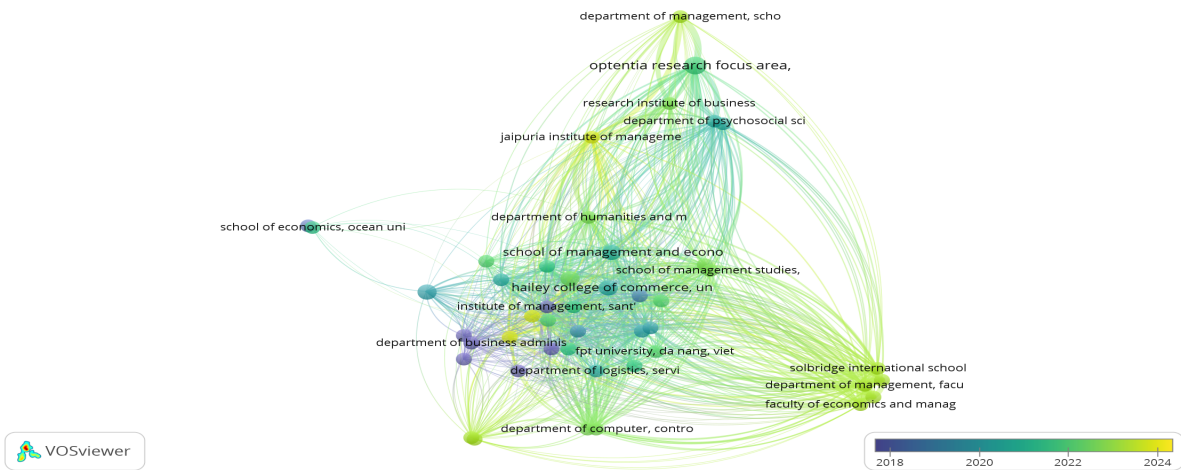
Table 8: Top 10 cited organizations

| Sr. No. | Organization | Documents | Citations | Total link strength |
|---------|--------------|-----------|-----------|---------------------|
|---------|--------------|-----------|-----------|---------------------|

|    |                                                                                                                                                  |   |     |      |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------|---|-----|------|
| 1  | "optentia research focus area, north-west university, vanderbijlpark, south africa"                                                              | 4 | 426 | 1293 |
| 2  | "institute of management studies, banaras hindu university, varanasi, india"                                                                     | 3 | 89  | 1120 |
| 3  | "department of management, faculty of business administration, university of tabuk, tabuk, saudi arabia"                                         | 2 | 14  | 1118 |
| 4  | "department of marketing, college of business, umm al qura university, makkah, saudi arabia"                                                     | 2 | 14  | 1118 |
| 5  | "faculty of business administration, university of tabuk, tabuk, saudi arabia"                                                                   | 2 | 14  | 1118 |
| 6  | "solbridge international school of business, 151-13 samsung 1-dong, dong-gu daejeon, 34613, south korea"                                         | 2 | 14  | 1118 |
| 7  | "department of computer, control, and management engineering "antonio ruberti", sapienza university of rome, via ariosto 25, rome, 00185, italy" | 2 | 33  | 884  |
| 8  | "department of high-tech business and entrepreneurship, university of twente, drienerlolaan 5, enschede, 7522, nb, netherlands"                  | 2 | 33  | 884  |
| 9  | "amity school of business, amity university patna, patna, india"                                                                                 | 2 | 89  | 861  |
| 10 | "school of management studies, indira gandhi national open university, new delhi, india"                                                         | 2 | 6   | 795  |

Source: Researcher's own work

**Figure 11: Top Cited Organizations**



Analysis of top 10 most co-citation author

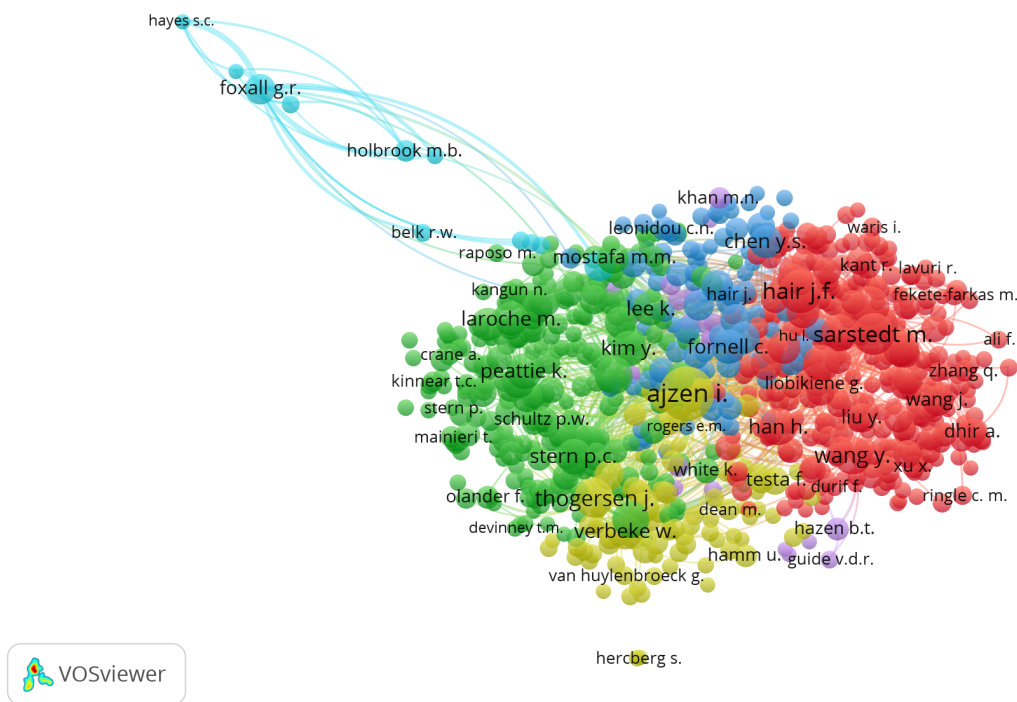
In this study the association between the authors is depicted using VOSviewer software. A minimum 20 number of citations of an author are considered to analyze. 48790 authors were appeared and 761 meet the threshold. Table 9 and figure 12 depicted that Ajzen I. appeared in 46936 sources which is the highest total link strength followed by Hair J. F. having 26851 the second highest total link strength.

Table 9: Top most Co- citation author

| Author       | Citations | Total link strength |
|--------------|-----------|---------------------|
| ajzen i.     | 677       | 46936               |
| hair j.f.    | 338       | 26851               |
| sarstedt m.  | 317       | 24447               |
| thogersen j. | 278       | 21201               |
| ringle c.m.  | 268       | 21055               |
| paul j.      | 215       | 17997               |
| yadav r.     | 221       | 17857               |
| han h.       | 212       | 17416               |
| fishbein m.  | 245       | 17405               |
| steg l.      | 227       | 16393               |
| wang y.      | 239       | 15622               |
| stern p.c.   | 191       | 15139               |
| kim y.       | 206       | 14656               |
| wang s.      | 191       | 14546               |
| verbeke w.   | 199       | 14211               |
| fornell c.   | 183       | 14014               |
| pathak g.s.  | 161       | 13578               |
| lee k.       | 179       | 13036               |
| peattie k.   | 202       | 12351               |
| larcker d.f. | 149       | 11906               |

Figure 12: Co-citation among authors





Discussion

This study attempted to perform systematic literature review was performed in this study to analyze the studies scientifically using VOSviewer maps. From the findings it is evident that research in green product consumer purchasing behavior is gaining popularity among the research scholars. Authors like Ajzen I., Hair J. F., Sarstedt M., and Thogersen J. have given noteworthy contribution in the green marketing research field. Furthermore, table 10 depicted the top 10 research articles that have maximum citation indicator within the green product buying behavior of the consumers.

Table 10: Depicted the top 10 research articles with maximum citations (WOS)

| Sr. No . | Article name                                                                                                                     | Citation network (WOS) | In all Database | Journal citation indicator |
|----------|----------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------|----------------------------|
| 1        | Predicting green product consumption using theory of planned behavior and reasoned action                                        | 1060                   | 1147            | 2.35                       |
| 2        | Sustainable Consumption: Green Consumer Behaviour when Purchasing Products                                                       | 867                    | 955             | 2.4                        |
| 3        | Determinants of Consumers' Green Purchase Behavior in a Developing Nation: Applying and Extending the Theory of Planned Behavior | 599                    | 629             | 1.58                       |
| 4        | Green purchasing behaviour: A conceptual framework and empirical investigation of Indian consumers                               | 379                    | 394             | 2.35                       |

|    |                                                                                                                                       |     |     |      |
|----|---------------------------------------------------------------------------------------------------------------------------------------|-----|-----|------|
| 5  | Green products: an exploratory study on the consumer behaviour in emerging economies of the East                                      | 302 | 320 | 1.52 |
| 6  | An extended model of value-attitude-behavior to explain Chinese consumers' green purchase behavior                                    | 234 | 238 | 2.35 |
| 7  | An empirical investigation of green purchase behaviour among the young generation                                                     | 234 | 254 | 1.52 |
| 8  | Linking green skepticism to green purchase behavior                                                                                   | 213 | 229 | 1.52 |
| 9  | Exploring the Gap between Consumers' Green Rhetoric and Purchasing Behaviour                                                          | 178 | 205 | 1.78 |
| 10 | Explaining consumer purchase behavior for organic milk: Including trust and green self-identity within the theory of planned behavior | 175 | 185 | 1.18 |

Source: Researcher's own work

However, 19.962% of the total publications are published in China followed by USA with publication 17.681 %. However the third position is secured by India with 14.259% of publications. 2010 to 2022 there is an increase in the number of publications in every area whether it is articles, review articles, proceeding papers and editorial material in the field of green marketing. From the findings it is evident that there is contribution in the area of green marketing and consumer green purchasing behavior since the last three decades.

## Implications for Business and academicians

### *Theoretical Implications*

The beneficiaries of this research are not only the business organizations and government but the academicians also. Since 2010 to 2022 there is an increase in the research work in the area of green products (figure 4). Barbarossa and De Pelsmacker (2016) investigated the purchasing patterns of the green and non-green consumers. Shrum et al. (1995) investigated the variables that are directly related to the consumer purchase behavior for example; price consciousness and general care during the shopping, loyalty towards brand, new products' interest and along with these they also studied the attitude towards advertising and media preferences. Haws et al. (2014) developed a scale GREEN of green consumption values. Lopes et al. (2024) advocated that perceived quality and benefits plays significant role in green consumption behavior. Wang et al proposed the "5R" principle of green consumption (Save resources, reduce pollution; live green, revalue; choose and buy objects used repeatedly, reuse; classify, recycle; protect nature, save). Jansson et al. (2010)<sup>cxxxi</sup> developed theoretical framework of the green consumer behaviour and highlighted the four categories of determinants of green consumer behaviors: contextual forces, attitudinal factors, habits or routines and

personal capabilities. From a consumer research perspective, the behavior of reducing negative environmental impact (for example energy conservation and recycling) has received considerably more attention than the consumer behavior of purchasing products that are marketed as being environmentally responsible.

The future research can be done on the development of the various green marketing strategies and the model development of the impact of green marketing strategies on the green consumption behavior.

### ***Implications for Business and Management***

Society is becoming more concerned about the environment and sustainable products. As a result, without giving a second thought, companies are recognizing the benefits of green products and their marketing. In 2009, a study conducted by the American Marketing Association revealed that over half of corporate marketers thought their companies would increase sustainability efforts throughout 2010 and 2011 (AVS Group).

By the introduction of the green products companies can attain two major goals: first of all companies can target the environmentally conscious consumers to buy green products. As during a poll conducted by Green Seal and EnviroMedia Social Marketing it was found that during the period of recession in 2009, four out of five consumers would buy green products at a higher cost despite the poor economic conditions (Vermillion and Peart, 2010). Secondly, companies can create the opportunity for consumers to become ecologically conscious and more aware of environmental issues (Zinkhan and Carlson, 1995). In today's market green products and sustainable products are performing well and more efficiently than the brown products. Consumers would like to purchase more green products in today's scenario, for example; solar power lights, personal care products, pet food, organic food and beverages, electric vehicles, sustainable clothes, rechargeable batteries etc. This study examined the green buying behavior of the consumers and the influence of factors of the green marketing strategies on the purchase intentions of the buyers. An understanding about the green buying behavior as well as the green marketing strategies is essential for the marketers in order to determine the extent of environmental consciousness of consumers and further in developing the appropriate marketing plans. The findings of this study reflect the importance of green products and green marketing strategies. Business firms should develop green marketing campaigns and strategies focusing on the environmentally conscious consumers.

### **Conclusion**

This study presented systematic literature review of the green buying behavior of the consumers from 1994 to 2024. Green consumer behavior is interpreted by many theoretical models by a number of scholars. The focus of this study is to review the green consumer purchase behaviour and the factors that affect the green purchase intention along with the various green marketing strategies adopted by the marketers. As green marketing concept is evolving since the last three decades. This study highlighted the green products' consumption and the factors that affect the green consumption

behaviour of the consumers are lifestyle variables, self-consciousness and perceived ecological responsibilities. Therefore for marketers green marketing is an opportunity by understanding the needs and requirements of the consumers. This study also highlighted the importance of sustainable consumption pattern that can be enhanced among the consumers by adopting advertisements through television, social media, newspapers etc. Importance of consumer perception in molding the purchasing behaviour is also described in this study. Environmental consciousness of the consumers, characteristics and demographic profile of the consumers, social media impact and celebrity endorser that the marketer targets while adopting the green marketing strategies. However a number of challenges faced by the companies. Bibliometric analysis is done in this study using VOSviewer software. A total of 2941 research articles and literature review listed in the search results of the Scopus, WOS, Dimensions, JSTOR, Academia and Emerald. A detailed analysis for year, country, citation, publication, author and Bibliographic coupling is performed using the files of database from WOS data base file (526) and SCOPUS data base file (256). Figure 4 reflected that in the last three decades an important area of environmentally concerned consumers has arisen in the society and that research in the area of green product consumption behavior is gaining importance since the number of publications have increased every year. However in the first phase from 1994 to 2009 there is slow growth in the published work but there is a rise from 2010 to 2022 in the research work. Figure 6 and 7 along with table 4 depicted the country-specific citation analysis that reveals that research articles and review published in China is 19.962% of the total publications. USA published 17.681% of the 526 and India 14.259 % of the total publications. Clusters are formed of 407 Journals (figure 8) for bibliographic coupling. Sustainability represents the first cluster, Journal of cleaner production the second cluster and business strategy and the environment is the third cluster. Figure 10 reflected that ajzen i., the theory of planned behavior (1991), Organizational Behavior and Human Decision Processes, 50 (2), pp. 179-211 was cited 76 times which is followed by laroche m., Bergeron j., barbaro-forleo g., Targeting Consumers Who Are Willing to Pay More for Environmentally Friendly Products (2001), Journal of Consumer Marketing 18(6):503-520 was appeared second highest in link. Figure 11 depicted the top 10 organizations which have most cited publications. Optentia research focus area, north-west university, vanderbijlpark, south Africa has the highest total link strength 1293 and is placed in the first place followed by Institute of Management Studies, Banaras Hindu University, Varanasi, India have 1120 total ink strength and is placed in the second position which is further followed by Department of Management, Faculty of Business Administration, University of Tabuk, Tabuk, Saudi Arabia which have 1118 total link strength. By adopting the bibliometric analysis the reviewed articles provides the base for the other influential work namely green marketing strategies and factors that affect the green purchase intention. The review study provides a initial area for the researcher who are looking to conduct research in this area and also to the marketers looking for the initial green marketing strategies.

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