



Green Purchasing: Past, Present and Future

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Abstract: In recent years, discussions on green purchasing have increased; most studies were concentrated in developed countries, with limited studies conducted in developing countries. This study aims to systematically analyze studies that have discussed green purchasing. Using the Scopus database, 142 studies from 61 journals published during the period 1998 to 2021 were analyzed. Our analysis focused on three fundamental aspects: the determinants, the effect of green purchasing, and exploring the theoretical foundations and the most common theories that the studies relied on. The analysis results focused on researchers' demographic and physiological determinants based on the theory of planned behavior. There has been a development in discussing the determinants related to products and marketing and social and environmental determinants in recent years. The analysis results of the studies that addressed green purchasing show that green purchasing contributes to sustainable development. This study contributes to decision-makers by identifying the mechanisms of persuasion that motivate consumers to buy green products and provides a clear picture of the contribution of green purchasing to improving company performance and thus achieving sustainability, which encourages stakeholders to devise policies, promotional, and marketing strategies through which they can attract consumers.

Keywords: green purchase; green product; sustainable development; Scopus; review



Citation: Hazaea, S.A.; Al-Matari, E.M.; Zedan, K.; Khatib, S.F.A.; Zhu, J.; Al Amosh, H. Green Purchasing: Past, Present and Future. *Sustainability* **2022**, *14*, 5008. <https://doi.org/10.3390/su14095008>

Academic Editor: Daniela Cristina Antelmi Pigosso

Received: 28 December 2021

Accepted: 7 February 2022

Published: 21 April 2022

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1. Introduction

With the growing global interest in sustainability, as nonenvironmentally friendly use by consumers leads to environmental problems that hinder sustainable development, consumers were motivated to change the usage pattern from traditional products to environmentally friendly products or green purchases. For organizations, green purchasing is the primary strategy of enterprises through which they can improve efficiency and reduce waste, along with the possibility of enhancing competitiveness [1]. Further, green purchasing behavior refers to purchasing environmentally friendly products that can be recycled, which is advantageous to the natural environment [2]. On the other hand, Lo et al. [3] indicated that green purchasing is one of the primary factors to achieve sustainable development for institutions. It often affects the performance of the work of institutions and its impact on environmental protection practices.

Green purchasing is important to reduce the negative environmental impacts of manufacturing, use, and recycling processes [4]. It also improves community health through a clean environment, reduces health costs, and supports environmental sustainability [5,6]. Moreover, green purchasing enhances dynamic and operational capabilities and positively

affects environmental and economic performance [7]; this achieves global sustainable development goals [8] and enhances the confidence of various stakeholders.

Some recent studies have indicated that research on green purchasing has increased in recent years [9,10]. However, large areas in this subject still need further investigation due to the different factors that may affect green purchasing based on the different environments [11]. We conduct a systematic review of studies on green purchasing based on the Scopus database from 1998 to August 2021. This study covers the gaps found in a previous review [12], which conducted a formal review of studies discussing green purchasing in Malaysia. At the same time, the study by Liobikienė and Bernatoniene [13] presented an analysis that examined the determinants of green purchasing during a specific period from 2011 to 2017. Our study relies on a comprehensive review of the studies that discussed green purchasing. We review the determinants of green purchasing compared with what was discussed in previous periods, discussing the impact of green purchasing and identifying theories applied in previous studies. This review will contribute to the body of knowledge by providing a general picture of green purchasing research. Specifically, this study will answer the following questions:

QR1. What are the theories used in previous studies of green purchasing?

QR2. What are the determinants of green purchasing, and has it expanded from previous periods compared with recent periods?

RQ3. What are the consequences of green purchasing?

RQ4. How can future research develop green purchasing research?

The current study makes several contributions by (i) providing a comprehensive and specific clarification of the determinants that enhance consumers' tendency towards green purchasing by dividing these variables into four groups; (ii) providing clarification on the importance of green purchasing towards improving performance; and (iii) presenting the geographical areas in which research related to green purchasing are increasing and the areas that still need to conduct studies, through which it will provide the possibility to learn more about the determinants and effects of green purchasing, especially considering the various environmental developments that society is experiencing at present.

The rest of the paper is organized as follows: The methodology is presented in Section 2. In Section 3, we show the findings of SLR. In Section 4, we present the discussions and suggestions for the work in future research. In Section 5, we conclude the paper with implications.

2. Methodology

Our study depends on a systematic approach in reviewing the literature, which differs from traditional review. At the same time, the systematic review follows the path of a specific mechanism—rigorous, transparent, scientific, and reproducible—in contrast to the traditional nonsystematic narrative review [14]. SLR provides new insights into creating further questions and building new theories from systematic error and bias when comparing a systematic literature review with a formal assessment [15–17]. Additionally, studies based on SLR provide more realistic and reproducible results than narrative reviews of the literature [18–21].

We follow the approach that was defined by Kitchenham and Charters [22] and was used in a study by Vitolla, Raimo, and Rubino [23], which differs from the approach of [24] in terms of studying how to implement or perform the phenomenon. The Scopus database has been selected to obtain the literature as the most extensive database including high-quality papers [25]. By reviewing some studies to determine the keywords that can be relied upon during the search, the term “green* Purchas*” was used to search for all literature that discussed this topic from 1998 to August 2021 and 722 studies were obtained discussing green purchasing. Note that an asterisk can be used in search engines as a substitute for any other letter(s). After that, 15 studies were excluded for not using English language in their writing, leaving 707 studies. A comprehensive investigation of the studies was then carried out using the title and the abstract. All papers that did not discuss green purchasing as the

main topic were excluded. Moreover, all articles published in conferences and books were also excluded, so we obtained 288 papers. Figure 1 shows the mechanism for obtaining the final sample used in this study. Subsequently, all studies were obtained and thoroughly investigated, and two criteria were adopted to reach 142 studies analyzed as a final sample. The final criteria are as follows:

- Articles published before 2019 with at least two citations per year;
- Articles published between 2019 and 2021 in the 14 most productive journals.

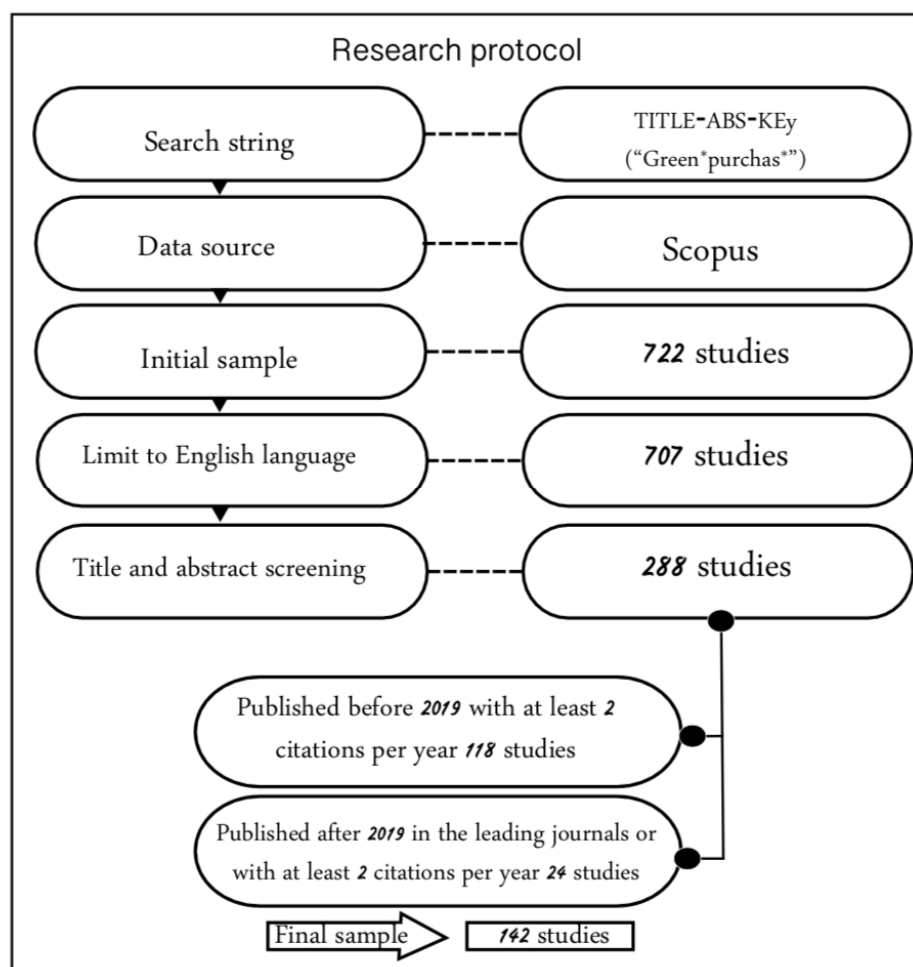


Figure 1. The research protocol.

3. Results of SLR

Figure 2 shows the number of the distribution of studies that discussed green purchasing during the periods. The figure shows a significant increase and interest by researchers in this topic, especially in the period from 2018 to August 2021, where the number of studies that discussed green purchasing reached 84. This finding is consistent with some studies that indicated an increased interest by researchers in discussing green purchasing in the recent period. Visser and Dlamini [10] reported that the field of green purchasing in recent years had achieved growth [26]. Ghazali, Mutum, and Ariswibowo [27] reported that there is an increasing and significant interest by academics in studying and discussing green purchasing as a result of a desire to know the field of green purchasing in a wide and clear way by the companies that produce and develop these products. Further, Al-Swidi and Saleh [9] reported that there had been a lot of progress in research on green purchasing in the last few years. This trend may be related to the direction by consumers to prefer buying environmentally friendly products compared with traditional products [28]. More and more consumers think that protecting the environment by purchasing green products

is very important to save the planet [29]. This interest prompted researchers to conduct further studies to obtain a clear and broad picture of this field. Finally, the results of a study by Goh and Wahid [12] showed that the emergence of problems related to the environment and consumers' orientation as a result of increased awareness towards buying green products received multiple responses from multiple parties such as companies, government agencies, in addition to researchers who carry out extensive research permanently and work to publish the results of those researches to communicate the results to the public.

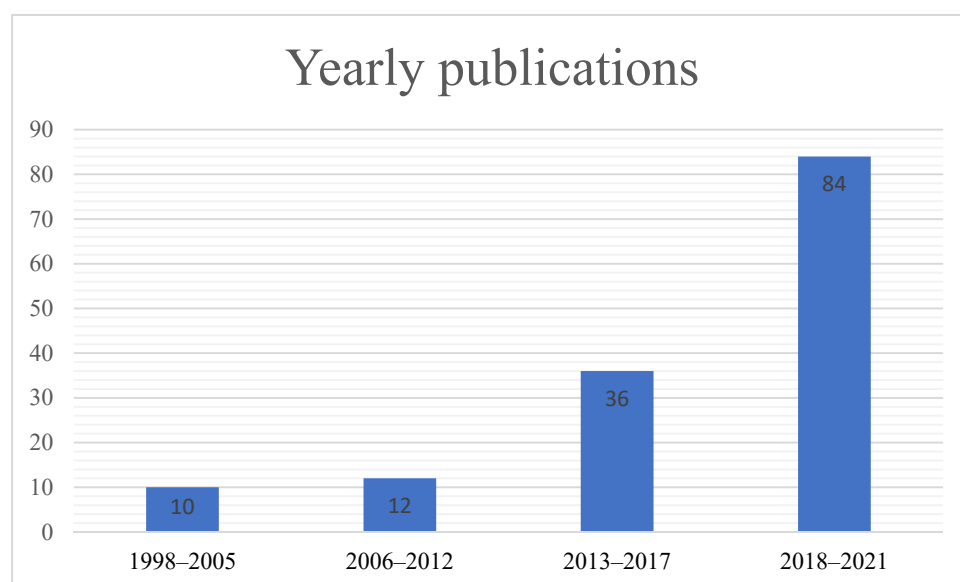


Figure 2. The yearly publication trend.

3.1. Literature Distributions Country

In this part, we investigate the area covered by the study to identify the countries and regions that pay more attention and look for the reasons for this. It is clear from Table 1 that China is first with 29 studies. Some studies' results have argued that China is an appropriate area for research due to the impact of rapid economic growth and large population size in a comprehensive environmental crisis [30]. At the same time, Luo et al. [31] argued that China is a suitable environment for researching several areas, such as research in the field of advertising, influencing consumers to buy green products as a result of the large population and the presence of a large number of social media users. India came second with 17 studies; according to Panda et al. [32], India is one of the fastest-growing countries in the economic aspect, which requires knowing how to preserve the environment and improve it. There is a tendency by companies to support consumers and educate them to buy green products. However, the Indian government has begun to introduce taxes on green purchases.

In third, we obtained 15 studies that discussed green purchasing in Malaysia. According to Mutum et al. [11], there is an increase in studies examining green purchasing and its determinants in Malaysia in the current period compared with the previous period because green products are relatively new in the Malaysian market. The results shown in the table highlight the absence of studies discussing green purchasing in the recent period in the United States compared with the previous period as one of the most developed economies.

On the other hand, we note the absence of studies in the Arab region, African countries, and Indonesia, in which religions, economics, and cultures differ. Likewise, studies are absent in some Latin American countries such as Brazil, which has a large population. Thus, future research may be directed towards these countries, which can provide a broad picture of the factors that promote green purchasing in light of different cultural and religious environments.

Table 1. Literature distributions by country.

Country	1998–2005	2006–2012	2013–2017	2018–August 2021	Total	%
China	1	3	5	20	29	20.42%
India	1	-	6	10	17	11.97%
Malaysia	-	3	5	7	15	10.56%
Taiwan	-	1	3	3	7	4.93%
Vietnam	-	-	2	4	6	4.23%
Poland	-	-	-	3	3	2.11%
Spain	-	-	-	3	3	2.11%
Iran	-	-	1	2	3	2.11%
Turkey	-	-	1	2	3	2.11%
US	2	-	-	1	3	2.11%
Portugal	-	1	2	-	3	2.11%
Egypt	-	2	-	-	2	1.41%
UK	2	-	-	-	2	1.41%
Italy			1	1	2	1.41%
Pakistan				2	2	1.41%
Hungary				2	2	1.41%
Bangladesh				2	2	1.41%
Cross country	2	1	5	6	14	9.86%
Other countries *	2	-	2	11	15	10.56%
No country	-	1	3	5	9	6.34%
Total	10	12	36	84	142	100%

* Other countries include Australia, Swiss, Lebanon, Germany, South Korea, Ghana, Jordan, Cambodia, Qatar, South Africa, Czech, Greece, Japan, Mexico, and Indonesia.

3.2. Theories Applied in Prior Studies

In literature, many theories have been used in green purchasing. The results show that with the development of research in recent years and environmental changes, new theories have been used compared to the previous period, such as the Theory of Signaling, Norm Activation Theory, Value-Belief-Normative Theory, and Attitude–Behavior–Context theory. The statistics in the Table 2 show that the Theory of planned behavior was used most (61 studies, 26.64%); then the Theory of reasoned action, which was used in 31 studies, 13.54%; and the Value-Belief-Normative Theory, which was used in 12 studies, 5.24%. This trend indicates the dominance of these theories and their importance in studies that discuss green purchasing. The great use of the Theory of planned behavior is that most of the studies addressed refer to Asian countries such as China, Malaysia, India, Vietnam, and Taiwan, which are societies characterized by different cultures, ethnicities, and religions. Consequently, most of these studies discussed the determinants and effects of green purchasing from a demographic and social aspect, which required a theory of planned behavior. However, we see the absence of economic theories, which can be an area of research in future studies to clarify the determinants and effects of green purchasing from an economic side.

Table 2. Theories applied in prior studies.

Theory	1998–2005	2006–2012	2013–2017	2018–2021	Total	%
Theory of planned behavior	2		20	39	61	26.64%
Theory of reasoned action	2	2	13	14	31	13.54%
Value-Belief-Normative Theory	-	-	2	10	12	5.24%
Attitude-Behavior-Context Theory	-	-	2	4	6	2.62%
Theory of Consumption Value	-	-	2	4	6	2.62%
Norm Activation Theory	-	-	-	5	5	2.18%
Signaling theory	-	-	-	3	3	1.31%
Theory of altruism	-	1	-	1	2	0.87%
Social theory	-	-	1	1	2	0.87%
No theory	6	5	7	17	35	15.28%
Other theories	1	6	10	49	66	28.82%

Note: Other theories include the following: Goal-framing theory; Value theory; Social exchange theory; Psychological contract theory; Frustration-aggression theory; Economic theory; Theory of motivation; Consumer choice theory; Emotion appraisal theory; Feelings-as-information theory; The helplessness-hopelessness theory; Theory of responsible consumption; Grounded theory; Economic development theory; Perceived innovation theory; Stakeholder theory; The theory of consumer behavior; Cognition-affection-behavioral; Consumer inference theory; Social communication theory; Appraisal theory; Natural-resource-based view; Word-of-mouth-social perception theory; Self-perception theory; Attitude and value creation theories; The self-efficacy theory; Social role theory; Theory of achievement motivation; Institutional theory; Theory of psychographics; Traditional purchase theory; Socialization theory; Gender socialization theory; Consumer socialization theory; Knowledge-deficit theory; Perceived risk theory; Environmental purchasing theory; Even barrier theory; Classic motivation theories; Prospect theory; Social influence theory; Evolutionary game theory; Fuzzy set theory; Social Dilemma theory; General theory of marketing ethics; Theory of Maslow; Schwartz's theory of values; Value-attitude-behavior theory; Neoclassic economic theory; Goal-framing theory; Agenda-setting theory; Consistency theory; Theory of perceived risk; Theories of the comprehensive action determination model; Triantis' theory of interpersonal behavior; Moral theory; Rational choice theory; Theory of normative conduct; Self-identity theory; Giddens' theory of structuration; Theory of structuration; Terror management theory; Theory of organizational capabilities; Human association memory theory.

3.2.1. Theory of Planned Behavior

The theory of planned behavior proposes a general framework within which the private behaviors of consumers can be understood. Thus, through this theory, determinants of subjective attitudes and behaviors can be identified to predict consumers' intentions so that their intentions measure the actual conduct of customers [33]. According to this theory, intentions are viewed as the basis that evaluates the orientation and behavior of consumers and their level of readiness [34]. This theory explains that consumers' attitudes towards their actual actions depend mainly on their personal behavioral belief in the product with the knowledge-based assessment of the decision to buy this product. Thus, these attitudes may be affected by personal criteria associated with more objective specifications of belief in consumption and the consumer's purchase motives [35]. This theory is the most widely used in studies, as this theory was used in 60 studies. Ruangkanjanases et al. [35] applied

this theory to investigate the quality of effects that have an impact on consumers' intention when deciding to purchase green products based on nine factors, namely, social benefits, individual benefits, environmental responsibility, willingness to pay, e-talk, convenience, self-efficacy, values, and environmental literacy. Chan and Lau [36] discussed the extent to which this theory can be applied in two different cultural environments, namely, China and the United States of America. Some studies showed support for the theory of planned behavior, such as a study by Albayrak, Aksoy, and Caber [37], which aimed to investigate the impact of environmental uncertainty and anxiety on green purchase intentions through the theory of planned behavior. The results of the study showed its support for this theory by providing clear evidence in Turkey.

Despite the widespread of this theory in studies, there is a need to examine the extent to which this theory can be applied in undeveloped countries and countries with different cultures and religions, such as the Arab region and Africa. Further, despite the vast and extensive spread of this theory, there are aspects that it does not consider, such as the threat, previous experience, and mood of the consumer.

3.2.2. Theory of Reasoned Action

This theory states that intentions are the factors that most-reflect actual behavior. This theory indicates that customer attitudes and personal standards towards issues related to the environmental impact the behaviors and actions of consumers towards purchasing green products [38]. This theory has been used in 31 studies, such as that of Ghazali et al. [27], who applied this theory to investigate the relationship between religious culture and customs and behaviors related to green purchasing. Lee [39] used this theory to examine and evaluate collective environmental effectiveness, the new ecological model, and environmental and collective knowledge in influencing consumer intentions in China and Korea. The results showed that collective environmental significance, the new environmental model, and environmental and collective knowledge are among the main factors for the intentions of Chinese consumers.

On the other hand, the results show an effect of all factors on the Korean consumer, except for the collective, which showed that the results did not impact consumers' intentions, whether directly or moderately. Some studies have found empirical support for this theory, such as a study by Sreen et al. [40], which aimed to investigate the cultural and physiological determinants of motivating consumers to buy green. Through the results of prior work, this study provided additional empirical support for the theories of classical behavior for the premises of some theories such as the theory of rational action and the hierarchy of value by integrating psychological, cultural, and behavioral variables within the same analytical framework, where the proposed model can provide insights of practical importance about various key aspects of green behavior, which leads to providing more in-depth investigation into the behavioral, environmental process in society. This theory is one of the essential theories in determining consumer behavior, but one of its limitations may be not setting limits so that the consumer cannot exceed them.

3.2.3. Value-Belief-Normative Theory

The Value-Belief-Normative Theory came as a result of changes in the movement of the environment as a result of changes that occur in the attitudes and behavior of the individual [41], where this theory indicates that there are reasons that push the individual to work towards achieving or practicing a specific thing represented in the relationship between personal feelings of commitment and the perceptions and expectations of the individual [42]. According to this theory, personal factors that support the environment support trends and behaviors that support environmental movement, such as support for environmental policies, environmental activism, environmental citizenship, and behaviors of the private sphere [43]. This theory has been used in 12 studies, including that of Jaini et al. [44], where the results indicated that the hedonic value and the altruistic value positively affect the personal perceptions and beliefs of the proenvironmental individuals.

Quoquab, Jaini, and Mohammad [45] aimed to investigate the effect of gender as a mediating factor on the relationship between beliefs, values, and standards. The results of the study concluded that social diversity regulates the relationships between ideas and values of altruism that support the environment.

3.2.4. Attitude–Behavior–Context Theory

This theory refers to the interaction between behavioral factors and their connection to contextual or organizational factors [46]; with the increasing awareness of consumers regarding the importance of preserving the environment, consumers' intentions to green purchase has increased [47]. Consumers tend to have positive environmental attitudes towards green buying due to growing environmental concerns [48]. Hence, consumers' environmental culture and knowledge are positively correlated with green buying behaviors and environmental concerns. Thus, this theory emphasizes that the green behaviors of consumers are determined by different contextual factors and not just by attitude.

3.2.5. Theory of Consumption Value

The theory of consumption values is based on determining the factors affecting consumers' choices to buy green products [49], as the buyers of green products usually tend to go to products that include health information such as calories and ingredients of the food product [11]. Thus, from a theoretical perspective, marketers should focus on enhancing consumers' attitudes towards their products by improving the health value of the products. This theory has been used in the literature with the aim of determining the value by which one can influence purchase intentions for green products. Thus, it confirms that consumption values are one of the tools that contribute to clarifying the consumer's purchase intentions with regard to environmentally friendly products.

3.2.6. Norm Activation Theory

The normative activation perspective proposes transforming ethical standards into environmental behavior [50], as consumers' intention towards preserving the environment drives them to environmentally friendly and sustainable products [51]; thus, promoting green social norms [52] through green buying behavior. This theory posits that expected guilt and pride lead people to behave in consistent ways with known personal norms. According to this theory, many essential variables determine consumers' intentions towards environmentally friendly products, such as normative beliefs, perceived behavioral control, awareness of the consequences of environmental problems, and intention to act in an environmentally friendly manner.

3.2.7. Signaling Theory

According to Signaling theory, socially committed companies make their environmental contributions visible in their voluntary disclosures [53]; companies are constantly working to send signals about the environmental quality of their products to stakeholders to influence their behavioral decision [54]. To this end, several means are followed, such as green advertisements, which market eco-friendly products [55], strengthening consumption and green purchasing. The cost of green products is often high compared with nongreen products. It is possible to provide motivating information to consumers to buy green products through this theory, as this theory confirms that purchasing green products has a significant benefit in the signal, and therefore, the green signs may be interacted and dealt with distinctly from social interactions, which leads to the use of the movement exceeding the moderate green insurance premiums.

3.2.8. Theory of Altruism

Altruism theory in the context of green purchasing refers to the behavioral norms of consumers that individuals adopt according to their beliefs about environmental importance for them [56]. Altruism dramatically influences consumers' buying decisions [57],

and green altruism refers to consumers' intent to purchase green based on their affection for the environment [58]. Thus, altruism plays a crucial role in promoting green purchasing and reducing selfishness in consumers. On the other hand, [59] suggested that altruism may explain the relationship between consumers' attitudes towards green products and their intentions to buy. Therefore, altruism can be considered one variable that affects consumers' attitudes towards buying green products and consumer's behavior.

3.2.9. Social Theory

Green products have great social value to consumers [60], where social influence can effectively direct consumers towards green buying [52]. Social norms affect the members of society and push them to conform to the prevailing norm, as societies with a high environmental culture will press towards the formation of a green culture. Accordingly, green consumption can lead to a fundamental change in society's behavior towards the environment.

3.2.10. Other Theories

The green purchasing issue was discussed through a host of other theories; for example, the stakeholder perspective calls for pressure on companies to reduce their environmental impacts [61]. Therefore, companies must satisfy stakeholders by preserving the environment and adopting green strategies that promote green purchasing [62]. According to the motivation theory, consumers' motives for green purchase increase as the extrinsic motivation increases [58], such as drivers of environmental concern and perceived environmental efficacy [48]. On the other hand, the rational choice perspective indicates that green consumption practices are highly compatible with utility maximization [63]. This makes it a rational, ethically preferable option. The self-identity theory also argued that green self-identity controls consumers' behavior and directs them towards green purchasing [64], which indicates that consumers have a growing awareness of the importance of preserving the environment and spreading green culture.

3.3. Methodology and Modelling

The investigation revealed that 129 studies used the questionnaire tool to collect data. Using this tool to collect data may be because the target groups for this topic are individuals, so obtaining responses would be easier. The questionnaire tool is one of the most reliable methods of obtaining data [65]. The data obtained through the questionnaire are highly reliable and may help to interpret the essential points in the subject under investigation in depth, which contributes to providing recommendations for the appropriate development of the subject under investigation [66]. It is preferable to use the questionnaire tool to collect data, especially in the behavioral and social fields, as it facilitates the collection of valid and accurate data [67]. Limited studies used other methods. For example, reports were used by Galeazzo et al. [68] from 122 companies to investigate the impact of purchasing green products on financial performance. The result of the study showed that there was no effect of green procurement on the financial performance of companies, except in the case of the presence of intermediate variables. Content analysis was also conducted by Green et al. [6] and Kaiser et al. [69]. The absence of qualitative research in the literature is one of the important limitations that future studies must work on to cover this gap. There are no studies that used the interview to obtain information on green purchasing. Qualitative research is a way to obtain new data with greater accuracy than data obtained from questionnaires and surveys because it gives respondents greater freedom to express their opinion. In addition, the interview method is very important in the field of promotion and marketing or presenting a brand for a particular product through which it is possible to present a collective and individual value at one time [70]. On the other hand, the qualitative research method contributes greatly to better understanding the reasons for the shift in the attitudes, which may help in maintaining a good relationship with the consumer. In future studies, mixed methods can use both the questionnaire and the interview, which

can provide more advantages to the reliability of the research results, in addition to the possibility of interviewing a number of respondents that the researcher aims at. The results of the investigation show that structural equation modeling (SEM) is widely used in the literature, which confirms the use of moderating and mediating variables to measure the factors that enhance consumers' intentions to buy green products. This technique was followed by multiple regression estimation approaches.

3.4. Thematical Analysis

In this part, we review the topics discussed by the studies analyzed in this study, where the determinants of green buying were divided into four categories (see Table 3). The number of studies that examined the determinants of green purchasing reached 118 studies. In comparison, 16 studies discussed the importance of green purchasing and its outputs, and the results showed the great importance of green purchasing in achieving sustainable development. The last classification, which classified eight studies belonging to this category, discusses other topics [69,71].

Table 3. Thematic distributions.

Sections	1998–2005	2006–2012	2013–2017	2018–2021	Total
Determinants	5	10	28	76	118
(a) Cognitive, Psychological, and sociodemographic	5	6	10	40	61
(b) Product attributes	-	-	7	12	19
(c) Social and environmental factors	-	3	7	12	22
(d) Others	-	1	4	11	16
Effects	4	2	4	6	16
Others	1	-	4	3	8
Total	10	12	36	84	142

3.4.1. Determinants of Green Purchase

According to the results of a study by Ghazali et al. [27], the relationship between green consumer attitudes and green buying behavior is erratic and controversial, as consumer attitudes do not primarily translate into buying environmentally friendly products. In this part, we identified the studies that discussed green purchasing and distributed them into three groups. Group 1 includes the studies that examined the determinants of green purchasing, in which these determinants were distributed into four types. Group 2 contains studies that discussed the effects of green purchasing. Group 3 includes some studies that examined green purchasing from another perspective or in an unspecified general theory. We followed the explicit classification of the literature, regardless of what some variables might include.

Cognitive, Psychological, and Sociodemographic

Environmental issues are receiving increasing attention from stakeholders and corporate management [61] and they are being worked on as strategic plans to promote sustainable development [72]. Multiple studies have discussed the determinants of green purchasing from multiple aspects, most notably, the aspect related to the consumer. The studies of the determinants of green purchasing about cognitive, psychological, and socio-demographic are the most common topics discussed in the literature, where the number of studies reached 62. The first study came by Chan and Lau [73], which examines three variables, namely, ecological knowledge, cultural values, and environmental affect; the results showed that there is a positive effect of the three factors, with great emphasis on environmental knowledge and the ecological impact on consumer's intention to buy green products, so that the more the consumer enjoys environmental knowledge, the greater

their orientation towards purchasing green products. The study by Lee [74] discussed the effect of gender on enhancing purchase intentions; the results of his research showed that females tend to buy green products more than males. It should be noted that the studies that discussed the personal characteristics of the consumer—such as age, gender, education, knowledge, and income level—came first, which confirms the association of green purchasing with the theory of planned behavior, which has been widely used in the literature.

Moreover, we note that there has been a development in studies in that they have begun discussing the demographic factors directly related to the consumer. Then, in some recent studies, they started using other characteristics, such as Liang et al. [75], who investigated pride, gratitude, guilt, and condemnation of others as the main factors in determining the consumer's intention to buy green products. The study showed that the feeling of pride and gratitude as factors that fall within the positive emotions of the consumer enhance the purposes of green purchase. On the other hand, negative feelings such as the condemnation of others and guilt moderate purchase intention. The study concluded that the availability of purposes related to avoiding environmental pollution enhances the senses of green purchase.

On the other hand, some studies differed in determining the effect of factors, whether positive, negative, or no effect, such as Jaini et al. [76], in which the result of the study showed that altruism has no impact, while the study by Jaini et al. [44] found that it impacts beliefs that support the environment, which ultimately affects the personal behavior of the consumer. Despite the widespread studies that discussed this type of determinant, there is a lack of studies addressing the impact of religious beliefs, religious instructions related to religions, the educational status of the family, and the effect of these two on generations and the number of individuals from the same family. Further, comparative studies can be conducted between countries that regulate the number of family members in a specific way, such as China, and among countries that allow the formation of families with an unlimited number of individuals, mainly Arab and Islamic countries. Moreover, with the distribution of the theory of planned behavior, we see that the use of economic theories in future studies will expand the understanding of the factors that can strengthen consumers' intentions towards green buying. The following Table 4 shows a sample of studies that discussed this type of determinant to determine the factors and results of the study.

Table 4. Example of Cognitive, Psychological, and sociodemographic studies (61 studies).

Authors	Method and Country	Factors	Results
[73]	China 274 respondentsSEM	Ecological affect, cultural values, ecological knowledge	The results showed that there is a positive effect of the three factors, with a great emphasis on ecological knowledge and the ecological effect on consumers' intention to buy green products; so, the more the consumer enjoys ecological knowledge, the greater his orientation towards purchasing green products.
[77]	China SEM 549 respondents	Ecological affect, degree of collectivism, ecological knowledge, nature orientation	The results show that human nature, collective culture, and ecological effect have a significant positive correlation in determining the intent on green purchasing, while a moderate or little influence was observed regarding ecological knowledge.
[78]	Egypt ML 1093 respondents	Attitudes, perceived effectiveness, altruism, concern, ecological knowledge, skepticism	The results showed a positive correlation between the availability of these factors towards motivating the consumer to purchase green products, while they showed that there is a negative impact on the consumer's intention to buy green products when there is skepticism about the environmental claims.

Table 4. Cont.

Authors	Method and Country	Factors	Results
[74]	China ML 6010 (3035 females, 2975 males)	Gender	The results showed more female interest than male regarding the environmental attitudes, severity of the expected environmental problems, influence of peers, environmental concerns, in addition to green purchasing behavior, while males increased their interest in the role of self-identity in protecting the environment compared with females.
[79]	Portugal, 186 respondents ML	Age, sex, income, literacy, liberalism, altruism, perceived consumer effectiveness, ecologically conscious	There is a significant effect of altruism and perceived consumers' effectiveness of the green purchase intentions compared with the rest of the factors. In addition, the results showed a significant effect of ecologically conscious consumers for the green purchase intentions.
[37]	Turkey 14 survey ML	Skepticism levels, environmental concern	There is a positive effect of green buying intentions when consumers have a great concern for the environment and a low level of skepticism.
[80]	Cross 163 respondent SEM	Age, ecological knowledge, ecological affect	The results showed that ecological knowledge and environmental concern have an essential effect among young people in promoting green purchasing intention
[81]	Malaysia PLS 140 respondent	Religious values	Environmental concerns and environmental orientation are affected by the value of religion, which leads to the impact of consumers' attitudes towards green purchasing.
[82]	Malaysia 303 respondents SEM	Skepticism	The results showed that skepticism is one of the main factors that negatively affect consumers' intentions to buy green, and therefore environmental knowledge and environmental concern may be mediating factors to reduce consumers' skepticism.
[27]	Indonesia and Malaysia 504 PLS	Religious values, habit	The results indicate that religious beliefs positively affect the natural environmental orientation, encouraging consumers to move towards green purchases. Moreover, there is an effect of habit in promoting intentions towards green purchases.
[83]	Taiwan 280 PLS	Anxiety, individual social responsibility	The results show the impact of consumer anxiety about death, which positively affects the consumer's intention to buy green products. Moreover, the results show that individual social responsibility has a positive role in the intention of green purchase.
[40]	India 351 consumers. SEM	Culture, behavior, gender	The results show that green purchase intention is positively affected by cultural and behavioral factors in addition to gender, where collectivism is linked to two determinants, which are subjective norms, attitudes where cultural factors and beliefs reinforce the purchase intent.
[75]	China 573	Pride, gratitude, guilt, condemnation of others	The study showed that the feeling of pride and gratitude as factors that fall within the positive feelings of the consumer enhance the intentions of green purchase. On the other hand, negative feelings such as the condemnation of others and feelings of guilt have a moderate effect on the purchase intention. The study concluded that the availability of intentions related to avoiding environmental pollution enhances the intentions of green purchase.
[84]	Poland 650 consumers. ML	Gender, age, personal financial situation, education level, number of children	The results showed that all demographic factors discussed in this study have a positive effect on the intention to buy green, especially among females compared with males. Moreover, the results show that a stable financial situation is an important and basic factor for green buying.

Table 4. Cont.

Authors	Method and Country	Factors	Results
[85]	China 160 Descriptive	Ambivalent attitudes	The results of the study showed that there is a significant negative effect of ambivalent attitudes towards green buying; this negative effect decreases when the consumer's mood is good and increases when the consumer's mood is depressed.
[86]	China 369 Hierarchical regression	Frugality	The results showed that frugality negatively affects the intention to buy green products as a result of the consumer's desire to save.

ML, multiple regressions; SEM, structure equation modeling; PLS, partial least squares.

Product Attributes

This section identifies studies that discuss the determinants of green purchasing concerning the product. As shown in Table 5, nineteen studies examined the factors that may attract consumers to buy green products. The results of some studies indicate that price and packaging are among the most important factors that encourage consumers to purchase green products. Weisstein, Asgari, and Siew [87] investigate the effect of the product's price on the tendency to buy green products. The results showed that the presence of different offers for product prices positively affects the intention and perceptions of consumers to purchase green products, as promotional offers that result in gains affect consumers interested in green products. In contrast, consumers who do not enjoy a high degree of green are attracted to promotional offers that decrease losses.

Martinho et al. [88] investigated the effect of packaging the product on the tendency to buy green products. The results showed the presence of two groups of consumers, where the first group is interested in packaging; in contrast, the second group considers packaging nonessential when making a purchase decision. Other studies discussed the role of factors in marketing green products, such as advertising [89]. Looking at these factors, we find that researchers' interest in them came late compared with studies that discussed demographic and cognitive determinants. Therefore, more research may expand knowledge about the determinants of green purchasing from all sides, especially considering the ongoing environmental changes. These determinants differ from the demographic and personality determinants discussed in the previous section. These determinants are related to the quality of the product itself, whether it impacts the consumer's intentions to buy green products and the importance of promoting and marketing the product to achieve more sales. The study of the impact of the product's price has been widely discussed, while brand positioning needs more investigations in the future. However, the absence of studies conducted in third-world countries and low-income countries, and the extent of its impact on consumer intentions to buy green products, may be of interest to future studies.

Table 5. Example of studies on Product and advertising attributes (19 studies).

Authors	Methodology	Factors	Results
[87]	Descriptive 236 participants	Price	The results show that the presence of different offers for product prices positively affects the intention and perceptions of consumers to buy green products, as promotional offers that result in gains affect consumers who are interested in green products, while consumers who do not enjoy a high degree of green are attracted to promotional offers that result in a decrease in losses.
[90]	Taiwan 425 respondents SEM	Brand positioning, brand knowledge	The results show that there are positive effects of brand knowledge and brand positioning on the attitudes and intentions of green buying by consumers.
[91]	Italy 51 interviews Descriptive	Price, scarcity of products	The results show that the scarcity of products and high price is among the most important determinants that hinder consumers from buying green products.

Table 5. Cont.

Authors	Methodology	Factors	Results
[88]	Portugal 215 respondents ML	Packaging	The results show the presence of two groups of consumers, where the first group is interested in packaging; in contrast, the second group considers packaging nonessential when making a purchase decision.
[92]	China 306 ML	Product knowledge	The results show that product knowledge has a significant impact in supporting consumers' intentions to purchase green.
[93]	China 2513 respondents Bayesian logit regression	Retailer type, eco-label credibility	The results show the effect of eco-label credibility and retailer type on green purchasing intentions; moreover, education and awareness of green products contribute positively to the acceptance of green products.
[48]	India 308 respondents SEM	Media	The results show that the media plays a vital role in inward environmental attitude and attitude towards green packaging, which contributes to encouraging consumers' intentions to buy green.
[94]	Turkey 500 consumers SEM	Green brand equity, greenwashing, green brand	The results show that brand credibility and green brand positively affect green purchasing intention; green brand equity also has a significant and robust effect on green purchasing intention. The results also show a negative impact of greenwashing on brand credibility and green brand associations, which indirectly influences purchasing intention.
[95]	China 236	Product knowledge	The results show that there are factors that mediate the positive effect of product knowledge in enhancing intentions to buy green products, such as trust in green products, effective consumer perception, and consumer perception of the product price.
[31]	China 1012 questionnaires SEM	Green advertising skepticism	The results show that green advertising skepticism negatively affects consumers' intention to buy green. On the other hand, the results show that customized and honest advertising for the consumer is one of the critical factors on which the consumer's decision is based regarding green purchasing.
[96]	China 479 questionnaire SEM	Media persuasion	The results indicate that the role of media persuasion on consumers enhances the intention of green purchase and is positively associated, especially with adults, which can be known as the seriousness of problems related to the environment through media persuasion.
[97]	China 552 questioners SEM	Live-stream marketing	The results of the study indicate that live-stream marketing can stimulate consumers' intentions towards green buying

Consequence Design of Products

To attract consumers to buy environmentally friendly green products, there must be a different design. Product design is one of the main factors contributing to promoting green products, such as sustainable designs, which express the philosophy of designing products and services compatible with the principles of environmental sustainability. Martinho et al. [88] argued that a large group of surveyed consumers showed an interest in sustainable, environmentally friendly packaging. Thus, one of the essential points that may encourage the consumer to buy green products is the perceived strength at the moment of purchase over packaging and design, which is more critical than the actual input strength [98]. Maslow's theory indicates that consumers who are self-sufficient in basic needs always seek satisfaction in achieving sufficiency from other conditions such as material and luxury needs associated with sustainability [99]. Thus, the importance of product design in a way that shows environmental protection may enhance the attraction of consumers to purchase. It can be said that there are different ways through which advertising calls to buy green products can be practiced, such as describing the features and characteristics of the product in a more subjective way or general way or describing the attributes and characteristics of the product in an objective and detailed manner through

tangible attractiveness [100]. According to a study by Yang et al. [101], advertising related to tangible attractiveness is less effective than the abstract attractiveness method based on describing the product in general or subjectively when the characteristics and attributes of green products are related to consumers and their interests. Therefore, companies are obligated to clarify the importance of environmental protection for green products and show the company design to show their value and personality in a way that distinguishes between traditional products and green products. On the other hand, the results of some studies indicate that product design may significantly enhance competition, survival, and continuity in the market and determine the company's success by identifying the need and satisfying consumers' desires [102].

Social and Environmental Factors

Green purchasing is one of the critical factors towards environmental sustainability [103]. Many environmental challenges are facing the world due to the diversity of industries and businesses, which may affect environmental life, calling for the need to buy green products as part of solutions that contribute to preserving the environment naturally. This part explains the environmental and social factors that enhance consumers' intentions to purchase green products. Twenty-two studies discussed the determinants of green buying from this aspect. The investigations presented many factors that enhance intentions towards green purchase. However, some studies differed in determining the effect of factors and whether positive, negative, or no effect was reported, such as Dagher and Itani [104], who discussed the impact of perceived effectiveness of environmental behavior, sensed environmental responsibility, perceived seriousness of environmental issues, and concern for self-image in environmental protection on green purchasing choices. The study results showed an effect of perceived environmental responsibility, perceived seriousness of environmental problems, and concern for self-image in environmental protection green purchasing intentions. On the other hand, the results showed no effect of perceived effectiveness of environmental behavior on green purchasing intentions [104]. The results of a study by Uddin and Khan [105] found a positive impact on the perceived usefulness of environmental behavior on green purchasing, as the evidence provided by Visser and Dlamini [10] showed no significant effect of environmental attitude and environmental knowledge on green purchase intentions.

On the contrary, the study results by Goh and Balaji [82] showed that environmental knowledge plays a significant mediating role in promoting green purchasing intentions. Future studies may discuss the determinants reviewed by specific studies in the literature, such as laws and government instructions, and their impact on encouraging consumer intentions to buy green products. In addition, it is interesting to consider providing future studies about the Eco-Social Design of products and its effect on the consumer's purchase intent. The Eco-Social Design of products promotes green and sustainable consumption patterns and, thus, may be a critical factor in directing consumers towards green buying. In Table 6, we present some of the results of the studies.

Table 6. Example of studies on Social and environmental factors (22 studies).

Authors	Method and Country	Factors	Results
[106]	Malaysia 132 respondents from a survey ML	Social responsibility, expected business benefits, customer pressures, regulations	The results show that green buying is positively affected by customer pressures, regulations, and expected business benefits, while social responsibility does not represent a motive for green buying.
[107]	Malaysia 230 respondents ML	Environmental attitude, environmental knowledge, peer pressure, government initiative, eco-label	The results show a high impact of the government initiative in enhancing consumers' intention towards green purchase. On the contrary, they show the absence of the effect of the environmental label on the intention to buy green products; though the results show a positive impact, it is less compared with the factor of the government initiative in the intention of green purchase.

Table 6. Cont.

Authors	Method and Country	Factors	Results
[108]	Cross 239 respondents ML	Top management commitment Regulatory pressure, Logistical integration with suppliers, Customer pressure, Environmental investment pressure, Technological integration with suppliers, Environmental collaboration with suppliers	The results show a positive effect of all factors on green purchasing, especially concerning the commitment of senior management.
[104]	Lebanon 101 respondents Correlation	Perceived environmental responsibility, Perceived effectiveness of environmental behavior, concern for self-image in environmental protection, perceived seriousness of environmental problems,	The results indicate three critical factors influencing green buying behavior: perceived seriousness of environmental problems, perceived environmental responsibility, and concern for self-image in environmental protection. The results also indicate that feeling the seriousness of environmental problems enhances green buying behavior.
[109]	Malaysia 175 respondents ML	Top management support, government regulations, supplier relationship and perceived benefits, customer pressures	Government regulations, perceived benefits, and customer pressures positively affect the adoption of purchasing green products.
[110]	Vietnamese 06 responses SEM	Environment Sustainability Awareness, Social Sustainability Awareness, Health Consciousness	Studies indicate that awareness of environmental and social sustainability positively affects customers who are interested in green purchasing, while health consciousness has a negative effect on the intention to buy green products.
[111]	Mexico 769 ML	Department rules, Complementary environmental practices, and city-wide contracts	The results showed a positive relationship for all factors towards green purchase intention.
[112]	China interviews descriptive	Behavior motivation, residential characteristics, behavior intentions, social norms, institutional and technological context, behavior ability	The results indicate an indirect effect of behavioral motives on green purchasing through population characteristics, behavior intention, social norms, behavioral capacity, and technological and institutional context, which have a moderate impact on the relationship between behavioral intention and green purchasing decision making.
[113]	Poland 339 Polish business students ML	Social value	The results show that social factors such as the perceived social value support intentions towards green buying resulting from an implicit belief that it supports the environmental condition. Moreover, the results show that factors stimulate youth's desire for the environment, including the willingness of young people to look good. At the same time, no incentive supports Youth attitudes towards the environment concerning doing good to society.
[105]	India 161 respondents regression analysis	Environmental consciousness environmental attitude, environmental involvement, environmental behavior	The results show that there is an effect of these factors on consumers' intention of green purchasing.
[35]	Taiwan 353 PLS	Social benefits, individual benefits, willingness-to-pay, e-word-of-mouth, values, self-competence, environmental literacy, environmental responsibility, convenience	The results show that there is a relationship that enhances green purchase intention for all factors except subjective consumer norms.

Other Themes

This part has categorized the studies that discussed the determinants of green buying that do not fall within the previous classifications. The determinants are presented from specific aspects through which a clear picture of understanding green purchasing can be presented. Sixteen studies discussed these factors. The following table shows these factors and their role in motivating consumers' intentions to buy green products.

According to Table 7, green purchasing intentions affect consumers' motivations towards green products. In addition, emotion plays an essential role in consumers' decisions.

Emotional influences can give consumers perceptions about environmental risks that raise their concerns, making them more eager to green buying. On the other hand, the mechanisms that companies follow to attract consumers towards their green products play a crucial role in consumers' adoption of green purchases. These mechanisms include ease of access to the product; providing electronic services; saving time and effort for the consumer, which increases their desire to acquire such products; and innovation in manufacturing green products and technologies that reduce environmental risks and promote sustainable development goals to attract the attention of many consumers and affect their intention to green purchasing.

Table 7. Example of studies on other themes (16 studies).

Authors	Methodology	Factors	Results
[114]	Taiwan SEM 258	Green perceived risk, green perceived value, green trust	The results show a positive relationship with a high impact of green perceived value on green purchase intentions; on the contrary, there is a negative effect of green perceived risk on green purchase intentions. The results show that the relationship between green purchase intentions and other factors is mediated by green trust.
[115]	Taiwan 305 Respondents ML	Image, value, perceived usefulness, risk	The results support the assumptions that these factors positively influence consumers' intentions to buy green.
[116]	China 309 SEM	Epistemic value conditional value, emotional value, Functional value	The results indicate that emotional and social values have a positive association with green buying; while there is a relationship, they are not significantly influential with respect to the rest of the variables.
[117]	India 500 respondents PLS-SEM	Green purchase attitude, environmental consciousness, green purchase intention, green behavior perceived customer effectiveness	The results show that environmental consciousness positively affects green buying intentions.
[118]	India 469 PLS-SEM	Green trust, green satisfaction, green perceived quality	The results show that green trust and green satisfaction mediate the relationship between green perceived quality and consumers' intentions to buy green products.
[119]	India 410 SEM	Terminal and instrumental values	The results indicate that the terminal and instrumental values significantly affect the behavioral intentions of green products, with a significant effect with respect to the instrumental value compared with the terminal value.
[120]	India 717 PLS	Green self-identity, green self-concept	The results show an important relationship of these factors in promoting green buying intentions.
[121]	China 1002 respondents PLS	Electronic service, green word-of-mouth (WOM), greenwashing, consumer social responsibility, green involvement, green trust, green perceived value,	The results show that there is a positive relationship with e-service quality, green trust, consumer social responsibility, and green perceived value on green purchase intentions, while there is a negative relationship with regard to greenwashing.
[122]	Bangladeshi 638) questionnaire PLS-SEM	Green willingness to purchase, green awareness of price, future estimation of green marketing, green perceived benefits	The green perceived benefits, green willingness to purchase, green awareness of price, and future estimation of green marketing have a strong and positive effect on the decision of customers towards green purchasing.
[123]	China SEM	Green technology innovation, green product innovation, green image innovation, marketing green innovation, green service innovation	The results show a positive relationship of green innovation, which can effectively enhance green purchase intention.

3.4.2. Effects of Green Purchasing

Green purchasing is seen as one of the most critical factors that contribute to achieving sustainable consumption, which may reduce the impact of society on the environment. In this part, we investigate the studies that discussed the effect of green purchasing on society and companies. Minimal studies have addressed the impact of green purchasing on institutions and the environment. Most studies agree that green purchasing contributes to achieving sustainable development. Murray [124] reported that green purchasing plays a crucial role in achieving sustainable development by linking environmental and economic development. Yee et al. [125] reported that the capabilities and practice of green purchasing contribute to enhancing sustainability related to economic and financial performance, such as increasing productivity, profitability, sales, and reducing costs. The results of the sample studies in Table 8 show that green procurement effectively contributes to achieving sustainable development and improving the performance of institutions. Given that limited studies discuss the impact of green purchasing and its contributions, these may be broad areas for future studies to investigate the importance of green purchasing to society, institutions, and the environment.

Table 8. Example of studies on Effect of green purchasing (16 studies).

Authors	Methodology		Results
[6]	UK Content analysis	Environmental performance of companies, and achieving sustainability	Green purchasing contributes to improving the environmental performance of companies, which contributes to achieving sustainability.
[124]	UK Content analysis	Sustainable development	Green purchasing plays a key role in achieving sustainable development by creating a link between environmental and economic development.
[126]	Cross descriptive	Sustainable development	Green purchasing plays an important role in achieving sustainability through the development and promotion of clean production technology, reducing environmental impacts that are inappropriate for consumption, working to harmonize management processes, and improving efficiency in a way that enhances the expansion of the financial and environmental performance of the company.
[127]	Content analysis	Supplier behavior	The study shows that green purchasing might significantly affect the behavior of suppliers when the motive of green supply management aims to achieve and promote sustainable development.
[128]	China content analysis	Sustainable development, supply chain management	The results indicate that green purchasing plays a key role in supply chain management and recycling, which contributes to promoting sustainable development.
[129]	Portugal, 100 responses ML	Firm performance	The results showed that the practice of green purchasing enhances the operational performance of companies in a positive way.
[7]	Japan 239 responses SEM	Environmental performance, economic performance	The results of the study found that green purchasing capabilities represented in dynamic and operational capabilities positively affect both environmental performance and economic performance.
[68]	Spain (GLS) 122 firms	Financial performance	The results showed that there is no positive relationship between green purchasing and the financial performance of companies.
[130]	Malaysia interviews descriptive	Triple bottom-line performance	The results of the study showed that the capabilities and practices of green purchasing contribute to enhancing sustainability related to economic and financial performance, such as increasing productivity, profitability, sales, and reducing costs.

4. Discussion and Future Research Suggestions

Our study aims to answer four questions. The previous analyses concerning the first question showed that the theory of planned behavior dominated all studies in analyzing the factors and effects related to green purchasing. As a result of the fact that most of the studies used data from countries such as China, India, and Malaysia, the reason to use this theory may be due to the differences in religion, race, and culture. On the other hand, we note developments in modern studies using new theories. For example, the study of Wang et al. [85] adopted the theory of motivation to verify the effect of frugality on the intention of green purchase. The study results showed that frugality hurts the intention of green purchase and the mediator variable is the motivation to save.

Moreover, the study results showed that green purchasing negatively affects the moderator relationship between frugality and the intention to buy. Liao et al. [54] used the signal theory to integrate the theoretical base of green purchasing to investigate the effects of green customer value and attitude towards green products on green purchase intention and determine the moderate effects of green marketing and green psychological benefits on the quality of the relationship between attitude, customer, and green purchase intention. So, it is clear that the development of green purchasing research is linked to researchers' use of new theories to search for all aspects of green purchasing and to determine the factors and their influence. Future studies may expand the use of economic theories and theories related to the environment to search for factors that may strengthen the intention of green purchasing and research the extent of its impact on performance and the environment in light of changing environmental conditions.

The second question was related to the determinants of green purchasing, as it was categorized into four groups: (i) Cognitive, Psychological, and Sociodemographic; (ii) Product and advertising attributes; (iii) Social and environmental factors; (iv) other factors. The analyses show that studies discussing the first group were greatest in number with 61 studies, which is evidence of the importance of the personal and behavioral aspects of the consumer towards green purchasing. However, results of the analyses showed that there is inconsistency in some studies about some factors, such as the study conducted by Visser and Dlamini [10], where the results of the study showed that there is no effect of environmental attitude and environmental knowledge on the consumers' intentions to buy green products. On the contrary, many studies have shown a positive relationship between environmental philosophy and environmental expertise and consumers' intentions to buy green products [108,131,132]. There is an indirect influence of the top management on the intentions of green purchase through mediation by collaboration with suppliers. At the same time, the results of a study by Ramakrishnan, Haron, and Goh [109] concluded that top management support does not enhance consumers' intentions towards green purchasing.

On the other hand, there are mixed results between the studies on the impact of gender differences between males and females on attention to environmental issues, whereas Mostafa [2] reported that females are less aware than males of environmental issues. On the contrary to the results of a study by Lee [74], females have more interest in environmental issues than males. Thus, future studies may examine the differences between the results of the studies based on conducting comparative studies between different cultural, religious, and economic environments. In addition, the possibility of conducting other studies in areas where there are no applied studies, such as the Arab countries, African countries, as well as some countries where the population is increasing, such as Indonesia and Brazil, will make it possible to clarify the determinants of green purchasing in a better and deeper way. The second determinant, which took less interest than the other groups, focused on product packaging, price, and advertising. Therefore, this is an area for future studies to conduct more research showing the impact of factors associated with the product on promoting green purchasing intentions. In addition to the possibility of conducting studies in different economic environments to determine the effects of these factors on green purchasing, our investigation also revealed the presence of several factors such as skepticism, green perceived risk, higher price, scarce availability, and greenwashing which negatively impact

consumers' intentions to purchase green products. Through the analysis of the studies, it became clear that there was a significant expansion in the study of the determinants and aspects of the impact of green purchasing during the recent period compared with previous periods. Wang et al. [86] studied the effect of frugality on green purchasing intentions. Sarabia-Andreu et al. [133] examined the effect of cynicism on green purchasing behavior.

In the fourth classification of determinants, the rest of the studies were included under the heading of other; 16 studies were found and included under this heading. Chen et al. [123] examined green technology innovation, green product innovation, green image innovation, marketing green innovation, and green service innovation. The results showed a positive relationship of green innovation, which can effectively enhance green purchase intention. Chen and Chang [114] conducted a positive relationship between green perceived value and green purchasing intention; the study results also showed a negative relationship between green buying and green perceived risk. As a result of the developments of modern theories, the study of the determinants of purchasing has been expanded based on the procurement sector. Future studies may develop into different sectors to study their determinants. Appendix A shows all the determinants that have been investigated in the literature. It summarizes all the factors that were investigated in the studies. In addition to discussing the personal aspects of the consumer such as age, gender, education level, and lifestyle, some studies addressed the extent of the influence of religion and government laws in attracting consumer attention to buying green products, such as Hassan [81], who discussed the role of religious values on consumer purchasing intentions and found the existence of an indirect relationship, where the spiritual value affects both environmental concern and natural environmental orientation. Therefore, these factors contribute to attracting the attention of the consumer to buy green products. The study results by Ghazali et al. [27] showed that religious values affect environmental concerns, natural environmental orientation, green purchase intentions, and green purchase attitudes, which attract consumers to buy green products. Ramakrishnan et al. [109] discussed the relationship of government regulations to motivating consumers to purchase a green product; the study results showed a significant and direct effect.

Moreover, studies showed a positive and practical impact of consumer pressure and the perceived benefits on attracting consumers to buy green products. In contrast, the study results showed the absence of the influence of top management. Personal norms factors had been discussed in literature, such as by Joshi and Rahman [103]. They examined the determinants of green purchasing among educated youths. The study results showed that among the factors that affect consumers' attention through the media is recycling participation, a form of sustainable consumption. According to Do Paço et al. [134], recycling participation refers to the conservative behavior of consumers; it is one of the forms of sustainable consumption. Egoism and biospheric values have been investigated by Caniëls et al. [135], where the results indicated that egoism has no actual correlation with regard to the patterns of green consumers. It may be realistic, as results by Wang et al. [136] have shown that it may be negatively associated with proenvironmental behaviors, given that self-reinforcement is directed towards achieving individual gains for the person. Contextual factors such as Parental Influence, Peer Influence, environmental investment pressure, exposure to environmental messages through the media, peer pressure, environmental protection, media exposure to environmental messages, cultural influences, social influence, media influence, and media persuasion have been used in many studies such as by Lee [137], who examined the role of peer influence and media exposure to environmental messages, and observed a positive relationship with enhancing consumers' intentions to buy green products.

Regarding the third question, the study results showed that only 16 studies out of a total of 142 studies discussed the effects of green purchasing. The results showed a positive impact of green purchasing towards sustainable development, environmental performance, and operational performance. However, the study results by Galeazzo et al. [68] show that there is no positive relationship between green purchasing and financial performance. We

turn to the limited number that discussed the importance of green purchasing in achieving sustainable development. Because there is a difference in some results of studies, we suggest the study of this aspect to be covered in future research. It may provide many contributions to the literature and stakeholders, enabling them to better-understand the role of green purchasing.

The following two figures show the relationship between independent, mediating, and moderate determinants and illustrate the effect of green purchasing. Figure 3 shows the factors that contribute to attracting consumers to green purchase. The figure shows the diversity of elements related to demographic and family factors such as age, gender, education, income, residential area, religion, race; consumption values such as cultural, epistemic, emotional, biospheric, functional, social, religious; product-related factors such as convenience, promotion, price, reliability, eco-labeling (credibility and involvement); attitudes and perception such as attitude towards a green purchase, implicit attitude, perceived value, and perceived quality. Green facets include regulatory, cognitive factors, government regulations, government initiative, ecological knowledge, environmental literacy, and personal norms. Contextual factors include long-term orientations, leadership, fashion consciousness, creativity, frugality, and motivations. Emotional factors include health consciousness, gratitude, guilt, pride, fair trade, and moods (e.g., anxiety and depression). The figure shows the determinants of green purchase that attract companies' attention to these products and work to display them in another way to attract the consumer's attention. According to a study by Preuss [138], purchasing is the main point through which resources flow within institutions. Thus, institutions consider the importance of procurement in achieving the flows through which the objectives of institutions can be achieved. As a result of the awareness among society of the negative impact of some products, companies have become required to deal with transparency in managing and addressing social and environmental issues, as discussed in Lannelongue and González-Benito [139]. Some literature findings show that companies respond more directly to customers, competitors, and regulators regarding green manufacturing capabilities [130]. Figure 4 provides a summary of the organizational determinants of green purchasing and the organizational outcomes.

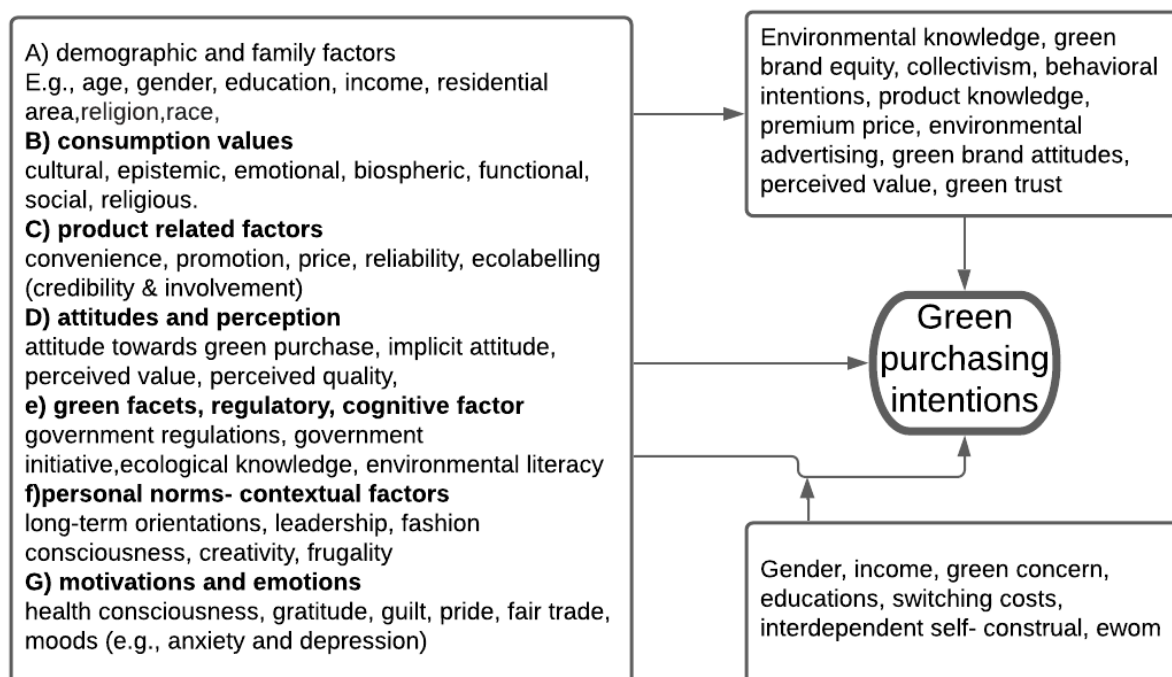


Figure 3. The factors that contribute to attracting consumers to green purchase.

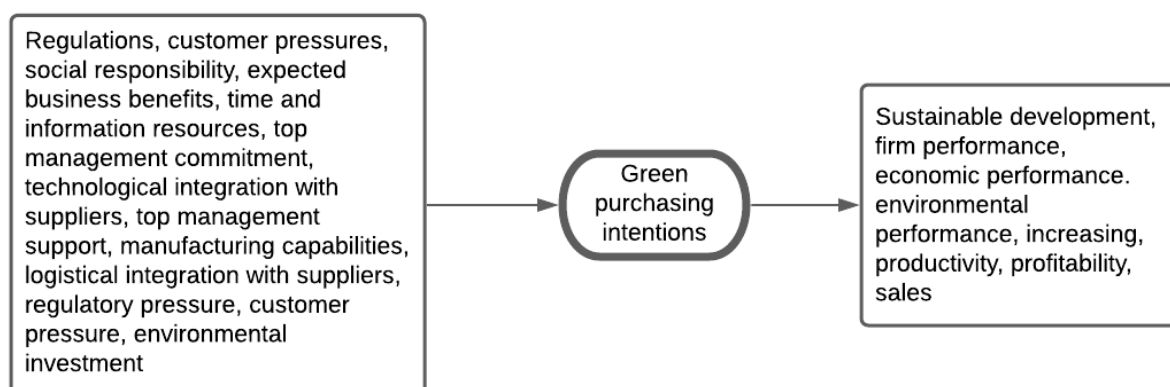


Figure 4. Determinants of green purchasing towards companies.

Please see Appendix A, which includes all the determinants.

5. Conclusions

Our study aimed to investigate the literature that discussed green purchasing from 1998 to August 2021. The results show that researchers have great interest in exploring the determinants of green purchasing, as the number of studies reached 118 out of the total sample that was analyzed, which amounted to 142 studies. The analysis results indicate a development in the search for determinants of green purchasing, where the old studies were primarily concerned with studying the personal determinants associated with the consumer. Still, in recent times, the results of the analysis showed the dominance of studies related to the product, the environment, and the company. The analysis results indicate controversy regarding the extent of the impact of some determinants on green purchase intentions, as some results of studies show a positive correlation and some show no correlation, which may be the subject of investigation for future studies.

Regarding the effect of green purchasing, the results of limited studies showed the role that green purchasing plays in achieving sustainable development and improving the performance of companies. The analysis results revealed the dominance of Asian countries—China, India, and Malaysia—in many studies as the defining aspect. At the same time, no recent studies have discussed green purchasing in the United States. Moreover, the study results show the absence of studies examining green purchasing in Arab and African countries as well as countries with large populations such as Brazil and Indonesia.

Through the results of this study, it is possible to identify the effects through which policy makers and those interested can develop strategies that contribute to the promotion and encouragement of consumers to move towards green purchasing. In addition, through the results of this study, it is possible to open new horizons to search for other factors that have an impact on green purchasing intentions, as well as the role of green purchasing in achieving sustainable development, which is critical in preserving the environment, especially in light of the rapid economic and environmental changes.

The study contributes to the literature by providing a comprehensive look at the literature on green purchasing, which is one of the urgent issues with the passage of time that has a close relationship with achieving sustainable development goals. This study also contributes to identifying the research gaps in previous literature that future studies can cover and work on. Moreover, this study assists decision-makers in formulating strategies through which they can encourage and persuade consumers to purchase green products and generate different marketing strategies to attract consumers and achieve sales targets.

This study includes some limitations that can be suggestions for future works. This study relied on the literature available in the Scopus database only. Therefore, future studies may be based on other databases such as WoS. In addition, there may be an explanation for different points of view than the mechanism our study was based on. Future studies may take these determinants for future work. We also believe that future

studies should expand in the search for factors contributing to the increase or decrease in consumers' intentions to purchase green products in light of the current environment associated with COVID-19. In addition, it is possible to study the impact of countries' trends towards achieving sustainable development in influencing and directing consumers towards green purchasing.

Author Contributions: Conceptualization, S.A.H. and S.F.A.K.; methodology, S.A.H. and S.F.A.K.; software, E.M.A.-M. and J.Z.; validation, E.M.A.-M.; and K.Z. formal analysis, S.F.A.K.; investigation, K.Z.; resources, S.F.A.K.; data curation, S.A.H.; writing—original draft preparation, S.A.H. and S.F.A.K.; writing—review and editing, S.F.A.K.; visualization, S.F.A.K. and J.Z.; supervision, S.F.A.K., H.A.A. and K.Z.; project administration, E.M.A.-M. and H.A.A.; funding acquisition, S.A.H. and E.M.A.-M. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Determinants of green purchasing discussed in the literature.

Major Factor	Sub-Factors
Sociodemographic factors	Age, gender, education, income, residential area, religion, race, and lifestyle
Family factors	Number of children, parental influence, and whether there is an elder family member
Consumption Values	Cultural, epistemic, emotional, biospheric, functional, social, religious (e.g., Islamic), conditional, altruism, and green values
Product-related factors	Convenience, promotion, price, retailer type affect, reliability, ecolabelling (credibility & involvement), materialism, user-friendliness, greenwashing, brand credibility, product availability, packaging, product self-concept, content marketing, overall image, local products, online product review, and cost consciousness
Attitudes	Attitude towards the green purchase, implicit attitude (cognitive and effective implicit), environmental attitude, and ambivalent attitudes
Perception	Perceived value, perceived quality, perceived environmental responsibility, perceived social responsibility, perceived seriousness of environmental problems, perceived deterioration of environmental problem, perceived effectiveness, perceived behavioral control, perceived saving, perceived effectiveness of environmental behavior, perceived benefits, perceived usefulness, perception of consumer actions, perceived eco-literacy, perceived individual benefits, perceived customer effectiveness, perceptions of benefits and risk, perceived consumer effectiveness, perceived barriers, and perceived behavioral control
Green facets	Brand positioning, brand knowledge, habit, brand equity, brand associations, product knowledge, advertising skepticism, supply chain management, greenwashing perceptions, knowledge, attitude, marketing strategies and innovation, brand image, brand love, brand loyalty, purchasing policy, cognitive implicit, self-concept, self-identity, trust, practice, product innovation, technology innovation, image innovation, service innovation, green brand evangelism, green brand loyalty, and knowledge of green products, and green manufacturing capabilities
Personal norms	Recycling participation, local environmental involvement, pollution avoidance intentions, pro environmental belief, self-identity/image in environmental protection, environmental concern, external locus of control, collectivism, interpersonal influence, environmentally friendly norm, willingness-to-pay, value for money, egoism, biospheric, long-term orientations, leadership, fashion consciousness, and creativity

Table A1. Cont.

Major Factor	Sub-Factors
Contextual Factors	Parental influence, peer influence, media exposure to environmental messages, environmental investment pressure, exposure to environmental messages through the media, peer pressure, environmental protection, cultural influences, social influence, media influence, media persuasion, temporal orientation, electronic word-of-mouth, individualistic culture, man–nature orientation, environmental visibility, environmental consciousness, environmental collective efficacy, concerns about societal opinions, ecological effect, frugality, individual social responsibility, adventurous spirit, development consciousness, cynicism, social impact, social benefits, and self-competence
Regulatory	Government regulations and government initiative
Cognitive factor	Environmental literacy, environmental awareness, concrete environmental knowledge, environmental education, social sustainability awareness, product knowledge, literacy, ecological knowledge, objective knowledge, subjective knowledge, independent self-construal, individual benefits, innovative news, information quality, action-related knowledge
Motivations and Emotions	Consumers' anxiety of death, health consciousness, extrinsic religiosity, gratitude, guilt, pride, fair trade, and moods (e.g., anxiety and depression)

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