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Review

"Green Products": A Review with the Consumer Buying Process Framework

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Abstract: Green consumption has become a crucial academic and practical topic with the increasing environmental-protection awareness of scholars, industries and consumers. However, the growth in green purchasing may not reflect the concerns. This study aims to synthesize recent research, and points several causes of low purchases to green products in the consumer perspective, and provide a comprehensive understanding to the realistic consumer decision-making process. Through the scope of Consumer Buying Process framework, this study systematically reviewed 73 credible articles on green purchase behaviour published from 2010 to 2022. Main constructs and theories applied in selected literature is further discussed in each sector of the CBP framework. The study results showed the green purchase process may have a 'loop tendency' that falls into the circulation of construction of evaluation and adoption of those evaluation. Moreover, purchasing behaviour which performed by minority of the consumers may not be strong enough to form a valid social norm, and the current available still lacked power to fulfil consumer needs. The lack of research to impulsive purchasing behaviour, or the emotions of consumers are under-researched, thus how the emotional appraisals affect consumer green purchasing may require more research. With the modified consumer buying process framework, this study highlights the importance of creating memorable experience and build strong emotional communications with consumers. In addition, triggering the collective empathy is recommended to be an effective way of constructing consistent social norms thus enhance the green purchasing intention of consumers.

Keywords: Green purchasing; consumer behaviour; environmentally friendly behavior; sustainable consumer behaviour

1. Introduction

Middle-class disposable incomes, as well as consumer needs for consumption and services have increased tremendously across the world in the past decades. To fulfil growing needs for various kinds of products, industries have expanded their product lines with little concern for the depletion of natural resources and the subsequent consequences (Lindenberg et al., 2018). Voices from scholars and environmental-protection organizations have been widely diffused and heard, although they seem to be utterly inadequate to solve the myriad problems (Lundblad & Davies, 2016). Different hypotheses concerning this phenomenon have been proposed from the perspective of industries, policy makers, and consumers. This study primarily focused on the consumer side, examining the proposed reasons for the differences between expectancy and reality provided by previous scholars.

As far as industrial pollution is concerned, with mounting societal pressure, industries have begun paying attention to sustainable consumption and implementing environmental-protection campaigns. Multiple scholars of sustainable development have defined sustainable or green consumption as 'the size and type of consumption which fulfil the need of current generations while guaranteeing the capability of fulfilling needs of further generations are not affected' (Piselli et al., 2022; Liu et al., 2016). With the concept of sustainability in mind, some industries have introduced environmental-friendly product lines, such as electric vehicles (Schmalfuß et al., 2017; Nopper et al., 2019). However, actual sales were not sufficient to prove the trend of green product purchasing (Bray et al., 2011), as well as the low intention to actually purchase green products (Joshi & Rahman, 2015). Scholars claimed that consumers continue to have less accessibility and knowledge of

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those products, and fear of the unknown may hinder the motivation to purchase such goods (Lundblad & Davies, 2016). Motivated to mitigate climate change and anthropogenic harm to the environment, scholars have assessed possible causes for the low sales of green products from different perspectives and provided valuable recommendations. Similarly, there has also been much research regarding the consumer side in order to explain the phenomenon. Studies have largely covered how consumers recognise their responsibilities and capabilities to protect the environment, as well as the psychology of purchasing green products (Duong, 2022; Ahmand & Zhang, 2019). However, there is lack evidence of a comprehensive understanding to the whole process of consumers buying green product, in which a comprehensive vision to all the process of purchasing green product is required.

The five-step consumer buying process (CBP) framework was first claimed by Dewey (1910) and synthesised by later scholars. This model, widely used in marketing for studying consumers' buying processes, is comprised of five components: recognition of needs, information search, search for substitution (alternatives), purchase decision, and post-purchase evaluation (as shown in Figure 1). While prior research has largely explored the decision-making process, the importance of other determinant elements has been underestimated. Thus, this study aimed to fill this gap, by systematically investigating the green purchasing process of consumers, through the scope of the consumer buying process framework, with empirical knowledge provided by previous scholars. This study followed the CBP framework to synthesis existing works in the field to each step. Moreover, the framework was modified to adapt the green purchasing context to the best of the author's knowledge.

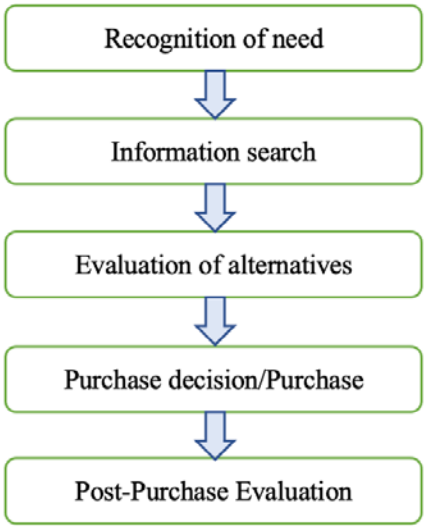

Figure 1 – Original CBP framework (Dewey, 1910).

2. Methodology

Green consumption has been broadly discussed by various scholars during the past decades from multiple perspectives. Past papers which focused on explaining attitude-behaviour gap or green consumption behaviour have done marvellous jobs. However, there is a paucity of research devoted to the whole decision-making process, especially on green purchasing behaviour. Following the purposes of this literature review, this study looked for appropriate published studies in order to gain an in-depth overview of the existing discussion.

2.1. Scope and selection criteria

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This study utilised Scopus for the literature selection process to guarantee that only high-quality studies were included, and a systematic search procedure was adopted for this study using the following keywords: 'Green consumption', 'Purchasing', 'Buying', 'decision-making', 'consumer behaviour', 'sustainable', and 'environmental-friendly'. The initial search produced 103 results. Afterwards, the author excluded studies which were not recent (those published before 2010), which resulted in the elimination of six results. Then, I read the titles and abstracts to excluded the studies which were not empirical or related to consumer psychology, eliminating an additional 19 articles. After this selection process was complete, 73 articles were examined for this study.

Furthermore, the determined studies were examined thoroughly through a careful reading of all their components. The literature search was completed on the 18th of September while the full-text reading and note taking was finished on the 25th of October.

2.2. Characteristics of studies reviewed

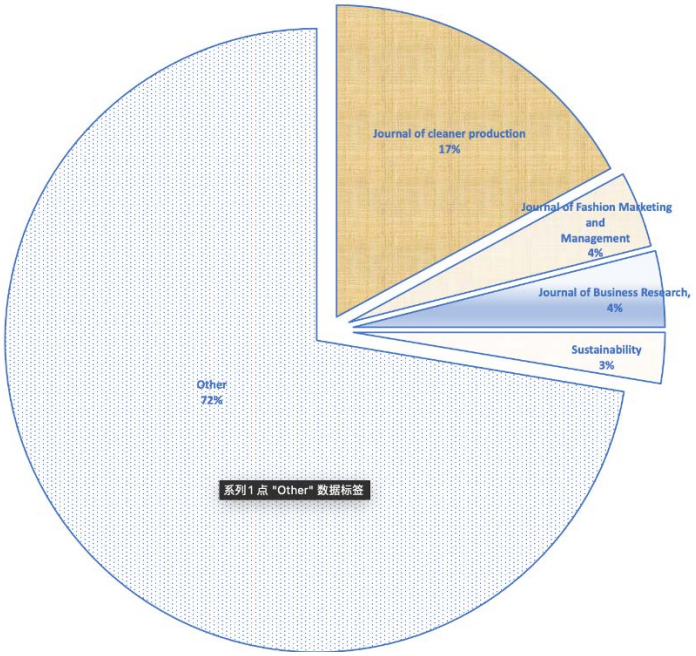

Figure 2 – Proportion of Journals included.

The proportions of journals included are presented in Figure 2. The largest proportion of articles were established by a large range of credible publishers (named as other in Figure 2). Articles from journal of cleaner production were the largest group selected (13 publications), followed by Journal of fashion marketing and management (three publications), Journal of Business research (three publications), and Sustainability (two publications). Overall, the selected papers were from 36 different journals.

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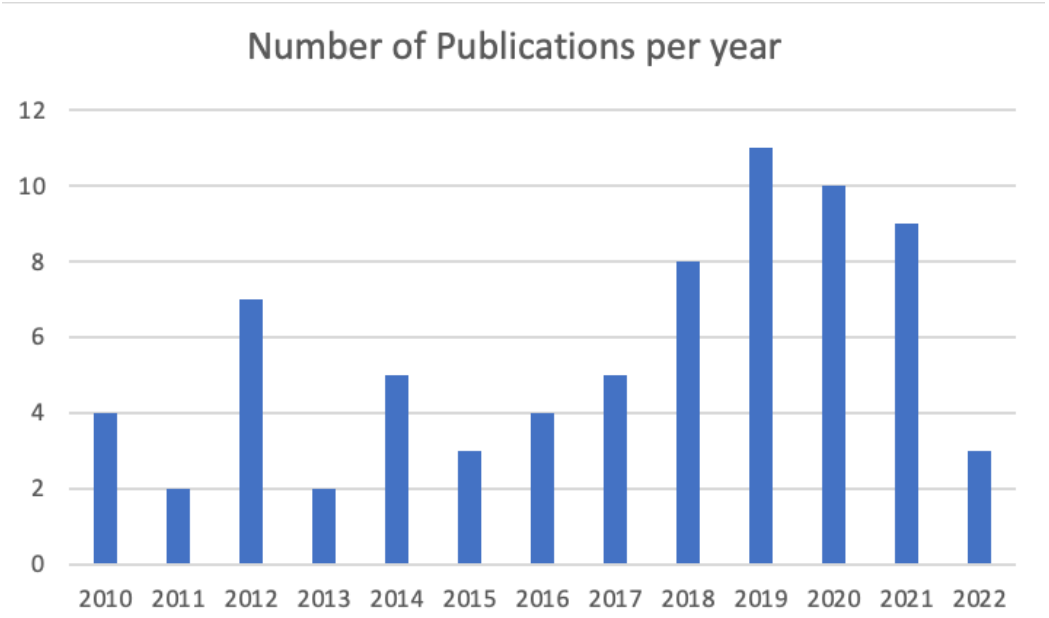

Figure 3 – Publication amounts per year.

In terms of the publications per year (Figure 3), it is clear that the empirical studies of green purchasing behaviour had the peak on 2019. Regarding the year 2022, as the literature search was completed in August, the data does not fully represent the current state of scholars' interest in this field of study.

3. Review of the selected literature

3.1. Consumer Buying Process framework

Considering the inconsistencies between attitudes, intentions, and purchase behaviours, this review explored the various angles with the scope of CBP. Hence, through a comprehensive analysis of how consumers make their purchase decisions, this study contributes to an integrated understanding of the variables affecting and forming consumer purchasing decisions. This framework explains the possible and rational process that an individual consumer would go through while arriving at a purchase decision, including (1) recognition of need; (2) information search; (3) evaluation of alternatives; (4) purchase decision; (5) purchase; and (6) post-purchase evaluation. The proposition of this model is consistent with previously published rational decision making models (TRA and TPB) that assess the predispositions to an object or product, which further result in the decision, while the decision leads to actual behaviour. It appears that CBP has rarely been adopted in reviews of consumer purchasing behaviours toward green or sustainable products, while other marketing tools were. Thus, this chapter explores the existing research on consumer psychological factors and links this prior literature with CBP constructs.

3.2. Recognition of need

Before an individual purchases a product, there are several stimuli that trigger the recognition of need, such as hunger or functionality (Testa et al., 2020). However, unlike ordinary products, the need for green products goes beyond physiological needs to include moral standards and other stimuli, as claimed by many scholars (Bray et al., 2012; Peattie, 2010; Milfont & Markowitz, 2016). This research examines how three different psychological factors affect the recognition of need for green products.

Social norms:

A 'social norm' is defined as the common or normative belief about what is socially appropriate and approved of in a given context (Peattie, 2010; Dangelico & Vocalelli,

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2017). Notably, social norms vary across different cultures, meaning that social standards may differ in their acceptance of certain behaviours (Joshi & Rashman, 2015). It was found successful in predicting green purchasing behaviour. Among the literature reviewed, normative messages were mostly positively correlated with purchase intention and behaviour, indicating the importance for consumers of conforming to social norms. One explanation proposed by Hansman et al. (2020) is that social norms may sometimes be deactivated, or 'neutralised' by consumers when the perceived negative outcome of a purchase outweigh the positive ones to avoid the self-blame situation that may follow.

Some researchers categorised social norms into different types. 'Descriptive norms' signify behaviours others normally do, or in the context of purchasing, the socially ordinary purchasing behaviour (White et al., 2019). It is effective in predicting consumer purchasing behaviour performed by members in the same group, but it may also lead to 'unintentional decreases in the desired action' according to Cialdini (2003).

On the other hand, 'injunctive norms' are socially and morally approved or disapproved behaviours, and involve more persuasive tendencies (Peattie, 2010; Cialdini, 2006; Kim & Seock, 2019). Such norms are more effective when used by policy makers but require a sufficient degree of control, as they may trigger feelings of threat to consumers' sense of autonomy, thereby causing extrinsic motivation that may not last for long (Hagger et al., 2014).

Environmental concern & Perceived consumer efficacy:

Multiple studies reviewed consider environmental concern as the major impetus for consumers to purchase green products (Sun et al., 2022; Song et al., 2020; Piselli et al., 2022). Environmental concern is defined as the understanding of the consequences of anthropogenic harm to the environment, and were always empirically researched to be directly or indirectly affecting green purchasing in a positive direction (Hansman, 2020; Leary et al., 2014; Becker-Leifhold, 2018). As suggested by several scholars, environmental concern is positively related to the need for green products, but it lacks power when affecting actual purchases (Lavuri, 2022; Lee 2008). It also plays an important role during the recognition of needs for green products. Purchasing green product may not fulfil physiological needs, but they involve a greater degree of moral thinking, motivated by fulfilling a higher level of needs (Xu et al., 2020; Qi & Ploeger, 2019). It is also worth noting that the purchase of green products may not be triggered by environmentalist sentiments, but rather by the frugality of consumers. Thus, self-report bias may lead consumers to overreport their environmental concerns (Testa et al., 2020; Cervellon et al., 2012).

Furthermore, consumers who are influenced by their environmental concerns may assume the actual help to the environment of their purchases or behaviours, namely the perceived efficacy of consumers (Lavuri, 2022; Testa et al., 2020; White et al., 2019). It is reported as an antecedent of purchase intention, but always shows lower predictive power than other determinants. Nevertheless, there are rising voices from researchers to focus on the perceived efficacy and environmental concern, as it is sometimes crucial to build emotional linkage with consumers and to promote the purchasing behaviour (Lee, 2008; Van der Werff & Steg, 2016)

Self-identity:

The means-end approach, which states that consumers use means (products) to achieve desired ends (status quo), is one of the most promising functions for green consumers found within the literature, of purchasing green products, is the symbolic meanings which emphasize their 'green identity' (Lundblad & Davies, 2015; Nopper et al., 2019; Sloot et al., 2019). Social identity refers to the ideal or expressed image consumers tend to show others to maintain certain status, and has factored heavily in recent research on green purchase behaviour (Groening, 2018; Testa et al., 2020). Some studies have demonstrated that self-identification within a group affects behaviour as well: the eagerness to

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prove one group's 'elite' status within a group will increase the possibility of other members performing a similar behaviour (White et al., 2019; Bouman et al., 2021). In a broader vision, some may emphasize the self-identity as 'earth-citizenship', or activists, may to a large extent trigger positive green purchasing intention (Peattie, 2010). Such attempt of recognizing oneself as responsible to environmental protection was found intrinsically motivate individuals to behave in a green order, and positively related to most kinds of the green behaviour (Sun et al., 2022; Yu et al., 2017).

Furthermore, some scholars have recently emphasized the importance of maintaining a consistent positive self-identity: consumers who primarily recognise themselves as 'green people' may prefer to see themselves as being consistent (White et al., 2019). Additional research has shown that habitually engaging in sustainable behaviour may lead to further attempts to repeat similar behaviour (Van der Werff & Steg, 2016; Peattie, 2010). Similarly, Sloot et al. (2019) found maintaining a 'green consumer identification' as the most significant motivation for green behaviour. From another perspective, researchers who adopt interventions found that the focus of (green) self-identity may be categorised into developmental stages that progressively increase in psychological sophistication (Mcneil & Moore, 2015). Notably, green identity is not essential for the purchase of green products in specific contexts. For example, Lundblad and Davies (2015) and Nopper et al. (2019) found that consumers who purchase green fashion products may only want to express a 'uniqueness' in their self-identity.

There has been evidence that individuals may underestimate others' green intentions and, therefore, behave in a opposite manner. For example, research by Bouman and Steg (2019) suggested one possible reason for individuals not behaving in an environmentally-friendly way is the emphasize to protect the environmental lead some consumers to a situation, namely 'moral licensing' (Santarius & Soland, 2018). Licensing effects may eliminate the possible repeat of green purchases as an excuse is found to not maintain one's self-identity (Phipps et al., 2013). The consumer, therefore, admits the difference between their desired state and actual state but are no longer motivated toward further behaviour. The conflicting study results may demonstrate that one's self-identity as a green consumer may not result in a more sustainable outcome than the ordinary ones. Although many studies found a positive relationship between green self-identity and green purchasing behaviour, it has been postulated that the core problem may be how consumers perceive both their own and other's roles (Park & Ha, 2012).

Values:

Among the literature, the most commonly adopted variables are altruistic, bio-spheric, and egoistic values (Bouman et al., 2021; Sun et al., 2022; Panda et al., 2020; Lauvri, 2022). Following Schwartz's taxonomy (1994), researchers have contributed remarkably to the study of green purchasing behaviour through comprehensive examinations of consumer psychology (see Becker-Leifhold, 2018; De Groot & Steg, 2010). The most common variables added to behaviour prediction models that predict pro-environmental behaviours are self-transcendence and self-enhancement values (Schwartz, 1994; Stern et al., 1999). The definitions of altruistic and bio-spheric values given by scholars are a focus on moral obligation to benefit the other human beings (altruistic) or concern for protecting the harmony of the environment (bio-spheric) (Schwartz, 1994; Van der Werrf & Steg, 2016; Bouman et al., 2021). In contrast, egoistic values motivate people by focusing on personal social achievements and power (Wiederhold & Martinez, 2018) . Much of the research focusing on the above-stated values postulate that altruistic and bio-spheric values enhance green purchasing attitudes and intentions, while self-enhancement values hinder them (Jacobs et al., 2018; Song & Kim, 2019; Van der Werff & Steg, 2016; De Groot & Steg., 2010).

However, Beck-Leifhold (2018) argued that none of the above values significantly relate to sustainable and collaborative consumption. Likewise, Reimers et al. (2017) ar-

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gued that altruism is statistically insignificant when purchasing green products, while Lavuri (2022) found that both self-enhancement and self-transcendence values have a direct positive impact on attitude and behaviour. As suggested by most reviews and research, the cause of these divergent results emphasise the importance of differing values in different contexts. For example, purchasing an electric vehicle may challenge the egoistic and hedonistic values more than other products with lower price (Nopper et al., 2019).

Notably, several authors have asserted that these values are important elements in the recognition of needs process, because most of the reviewed literature in this study set these values as dependent variables. Other literature has suggested that values may not only influence the recognition of need process in CBP, but also act as independent variables or mediators according to previous research in all processes of the CBP (Nopper et al., 2019; Lindenberg et al., 2018; Panda et al., 2020; Young et al., 2010). It is also worth noting that values may not purely act as direct determinants of attitudinal factors, but may also affect purchasing behaviour directly in habitual occasions.

Functionality & Quality:

As another crucial and pragmatic aspect of consumers' concerns, functionality has also been widely researched. Concerning the physiological needs to be fulfilled, green products show less cost-performance compared to non-green products (Lundblad & Davies, 2015). Moreover, the functionality and quality of green products are also different in specific contexts, thus signifying different kinds of needs and how consumers fulfil those needs with green product purchases. According to Testa et al. (2020), green products are mostly assumed by consumers as being lower quality, due to using recycled material (Colasante & D'Adamo, 2021; Coderoni & Perito, 2020) and untrendy (Lundblad & Davies, 2015). However, green food or packaging are recognised as symbols of health and quality because of similar reasons (Qi & Ploeger, 2019; Ketelsen et al., 2020; Song et al., 2022). Moreover, Nieroda et al. (2018) claimed that certain functions of hybrid products also act as symbolic of one's social status and personal values, which also aligns to the self-identity consistency in previous sections.

While most researchers found that perceived functionality, quality, and performance congruence constitute an essential part of consumer needs, (Gao et al., 2015; Schmalfuß et al., 2017; Chen et al., 2020), Chang and Wong (2012) claimed the opposite. They found that product-related attributes of eco-fashion have an insignificant relationship with consumer needs. Similarly, Coderoni and Perito (2020) argued that, because of technology neophobia, consumers may show negative attitudes toward new functions and technologies. However, their research only explored the direct relationship between product attributes and purchase behaviour, and the ignorance of mediator may have caused the inconsistency in their results compared to others.

Moreover, as far as the functionality is concerned, recent technological developments have yielded new functions for green products to enhance their environmental benefits. Nevertheless, few scholars have discussed how the positive influence brought about by products with higher energy efficiency may lead to a phenomenon called 'rebound effect' (Santarius & Soland, 2017; Keyvanfat et al., 2014), whereby increasing energy efficiency should lead to more allowance for their usage before harm the environment, thus attempt to use more (Peattie 2010; Dangelico & Vocalelli, 2017).

3.3. Information search

Whether negative or positive judgements of products are made throughout the recognition of need process, consumers determine whether the product would fulfil their needs or not. With the help of advanced information technology and social media, information (reviews, promotions, etc.) is available with convenience, which expedites the decision-making process (Ahmed & Zhang, 2020; Lee, 2008; Gam, 2011). Previous studies which shed light on consumer purchasing behaviour have also paid enormous attention

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to the effects of information, such as the availability of information sources and effects of promotions. Understanding the process by which consumer acquire knowledge will help to predict further purchasing behaviour (Stranieri et al., 2017). In addition, this research assumes both the gained knowledge and consumer experience or the new search of information for a specific product (from the producer or promotions) could contribute to green or sustainable purchase decisions (Jaiswal et al., 2020).

Past experience & perceived knowledge

At first glance, consumer purchase experience and knowledge of a product form a strong image of that product among consumers, resulting in routine or habitual appraisals when making future decisions about similar products (Xu et al., 2020; Dillahunt et al., 2009). This attempt of making decisions in addition to reactions based on past experience is defined as associative appraisal (Borsch & Steg, 2021; Lazarus, 1991) Associative appraisal has been argued to not be less rational but, instead, more predictive, as emotions pertaining to a certain product will influence subsequent purchasing behaviours for the same product (Gao et al., 2015; Ahmed & Zhang, 2020). Research by Schmalfuß et al. (2017) provided an in-depth explanation about the positive effect of past experience on purchasing intentions in the context of purchasing electric cars.

However, insignificant results were reported by Bosquez and Bolzman (2022) concerning the lack of knowledge and purchase. It has also been argued that, due to lack of experience in purchasing green products for most consumers, relying on associative appraisals may result in less motivation for searching for new information and making an actual purchase (McNeill & Moore, 2015; Zhang & Dong, 2020).

Transparency & credibility

In contrast to associative appraisals, when there is less convincing knowledge or experience from consumers, the approach to making decisions and judgements through collecting new information is introduced as reasoning-based appraisals (Borsch & Steg, 2021; Lazarus 1991). These kinds of appraisals form affects as well as expectancy, while the expectancy may lead to further purchases and concrete emotional memories (Ahmed & Zhang, 2020).

Researchers found that receiving new information could lead to a sustainable lifestyle through enhancing consumers' perceived knowledge, which increases the odds of purchasing green products (Mcneill & Moore, 2015; Wiederhold & Martinez, 2018). Moreover, industries have increased their attention on promoting sustainable product lines and emphasising environmental benefits. However, consumers may eschew such approaches. Nyilasy et al. (2012) observed the negative effects of green advertising due to consumer scepticism, especially toward publicly recognised unsustainable industries. Moreover, Dangelico and Vocalelli (2017) and Cauvin (2012) claimed that information overload may lead to less credibility of green products for consumers. In a similar vein, researchers have stressed the importance of reducing 'greenwashing', which may cause confusion and increased perceived risk of purchasing green products, thus deteriorating consumers' attitudes and interests toward green products (Chen & Chang, 2013; Stranieri et al., 2017).

Furthermore, increased time and effort of acquiring information and knowledge may negatively impact consumers' interests in purchasing green products (Testa et al., 2020; Joshi & Rashman, 2015). Therefore, eco-labelling is an effective means of conveying easily digestible information for consumers (Bosquez & Bolzman, 2022). However, is has also been argued that eco-labelling is not as promising as others may think, because consumers receive *too much* information (Grunet et al., 2014; Liu et al., 2016). Thus, to increase transparency and credibility, the certification of green labels through third-parties is recommended by some studies to decrease scepticism and enhance the regulation of standards (Jaiswal et al., 2020).

3.4. Evaluation of alternatives

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According to the CBP, as soon as consumers gather sufficient information for a product, substitute products will be determined as well to expand their choices for comparison. Many previous studies claimed that the lack of green products in markets may have caused unsustainable purchasing habits, especially in developing countries (Stranieri et al., 2017; Wang et al., 2017). Thus, this section delineates previous studies' arguments regarding product availability.

Availability of products

Compared to ordinary products, green products showed less competitive power when focusing on fulfilling the same utilitarian or functional needs. Thus, this study did not include competition between ordinary and green products, but only within the green context. Much of the literature reviewed explored the positive impact of product availability for consumer purchases (Bósquez & Bolzmann, 2020; Stranieri et al., 2017) Moreover, the willingness to purchase green products was sometimes limited in product choices (Colasante & D'Adamo, 2021; Coderoni & Perito, 2020). Nevertheless, Liu et al. (2016) found that the availability of green products has no significant relationship with the actual purchases of green food. This may indicate that when a product is expected to be inferior, consumers may not welcome more kinds of the same products, as this may confuse their choices. In other contexts of green products, especially products with higher opportunity costs, like electric vehicles, an increase in product availability would enhance consumers' purchase intentions (Nopper et al., 2019; Cowan & Kinley, 2014; Wang et al., 2017; Martinez et al., 2015).

3.5. Purchase decision & Purchase

After evaluating and considering the available choices and what is truly needed, consumers may mentally make a decision about which products to purchase, namely the purchase decision or intention. However, previous literature has found that the intention or previously determined positive attitude towards green products may not result in actual behaviour. This chapter concluded the reviewed articles and possible causes.

Emotional or Rational?

As mentioned in previous chapters, consumer appraisals may also result in various emotions toward certain products and purchase behaviours. Some purchases may elicit positive emotions (Gursoy et al., 2019; Ahmad & Zhang, 2020; Dillahunt et al., 2009; Joshi & Rashman, 2015; Bray et al., 2011). While much of the literature reviewed suggests that emotions are significantly related to purchases intentions, the emotional route of green purchases has been less reviewed than the rational assumption of consumers' behaviour (Contzen et al., 2021). Few studies have focused on the 'warm glow' effect aroused by the feelings of helping others or the environment (Dangelico & Vocalelli, 2017; White et al., 2019; Song & Kim, 2019). The positive emotions was claimed successfully trigger further actions of purchasing green products. In another perspective, few researchers explored the impact of 'guilt' to further actual purchasing behaviour (Lundblad & Davies, 2015; White et al., 2019). Guilt was demonstrated to successfully predict purchase intention, but lack of evidence to prove its further linkage to behaviour. Nevertheless, the emotional technique was widely adopted to trigger consumer needs towards a product in marketing ordinary product, like air conditioning (Razem & Blank, 2022; Dangelico & Vocalelli, 2017). Despite its successfulness in creating ideal identity and linkage to purchase ordinary product, attempt to predict actual green purchases through emotive responses has seemed powerless and insufficient as there were less personal benefits involved in green purchasing (Testa et al., 2020).

Notably, much of the researched reviewed postulated that green purchase behaviour is rational, and attempted to predict those behaviours with existing theoretical models, such as the theory of planned behaviour (Duong, 2022; Bosquez &.Bolzman, 2022; Xu et

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al., 2020), norm activation model(Steg & Vlek, 2008; Bouman et al., 2020; Unal et al., 2019), unified theory of technology acceptance model (Gao et al., 2015; Zhang et al., 2019), or a combination of multiple established theories (Panda et al., 2020; Park & Ha; 2012; Schmalfuß et al., 2017; Qi & Ploeger, 2019). These studies reported high explaining power of determinants for behaviour while noting that the self-report bias may exaggerate the self-perception of consumer behaviour (Steg & Charles, 2008; White et al., 2019; Zhang & Dong, 2020). Additionally, they indicate the insufficient evidence demonstrated by cognitive analysis models only. Nguyen et al. (2018) claimed that most researchers may be over-focused on behavioural intentions which may not represent actual behaviour. Similarly, more researchers attempted to explore the inconsistency between predicted behaviours and actual conversion rate.

Inconsistencies and barriers

Most studies found highly positive attitudes, norms, and moral stances towards green products and behaviours; however, little evidence of actual participation in purchasing was found (Stern et al., 2022; Groening 2018). The discrepancy between attitudes, intentions, and behaviours, namely the attitude-behaviour gap, value-action gap, or intention-behaviour gap, have been given ample attention. Some researchers have tried to explain these phenomena by extending established models and adding variables to increase their predictive power (Park & Lin, 2018; Reimers et al., 2017). But the confusion between behavioural intention and actual behaviour still remains, as many studies have focused on explaining intentions only, which may not contribute to a better understanding of green purchase behaviour (Jacobs et al., 2018, Nguyen et al., 2018; Bray et al., 2011). Arguments about the self-report bias were often used to explain such inconsistencies, as participants may report their attitudes towards green products and behaviours in an ideal manner that does not correspond to reality (Steg & Vlek, 2008; Testa et al., 2020). Such a phenomenon was further explored with the scope of goal framing theory by Lindenberg et al. (2018) as 'hedonic hypocrisy', referring to when consumers report strong moral stances to feel better about themselves. In a similar vein, research by Hansman et al. (2020) complements the 'hypocrisy' hypothesis with a criminological perspective, arguing that consumers tend to express values that conform to social norms while deactivating these norms when purchasing in the opposite manner to avoid a self-blame situation. Ramayah et al., (2010) argued for a self-centred orientation among green consumers in developing countries, which suggests that consumers may prioritise purchasing self-enhancement products. One exception is the purchases of electric vehicles, which consumers may achieve both the self-oriented and morally guilt-free (Nopper et al., 2019; Schmalfuß et al., 2017; Lundblad & Davies, 2015).

Another commonly accepted explanation is the perceived efficacy of consumers, which is defined by Testa et al., (2020) as the extent to which consumers believe that their behaviour could contribute to the environment. A belief that one's purchasing behaviour could positively contribute to the environment often elicits these behaviours (White et al., 2019; Lee 2008; Jaiswal & Kant,). These findings help explain the psychological inconsistencies, while others contribute to the exploration of potential barriers.

Instead of adding variables, some researchers explored the barriers which may cause the discrepancy between expressed thoughts and behaviour. Financial capability was commonly researched, suggesting that a lower disposable income may create a barrier to purchasing green products. Green products often come with a price premium, which may lead to fewer purchases from cost-conscious consumers (Sun et al., 2022; Gam, 2011; Santarius & Soland, 2018). Meanwhile, on special occasions, the price premium may cause more purchases, as is the case with green foods, because it signifies higher quality (Stranieri et al., 2017; Song et al., 2022). Similarly, a lack of green knowledge and experience (Song et al., 2020; Bosquez & Bolzman, 2022; Luch et al., 2012), green products (Ketelsen et al., 2020; Stranieri et al., 2017; Lundblad & Davies, 2015), perception of out-of-date design (Colasante & D'Adamo, 2021; Chan & Wong, 2012; Groening, 2018; Mcneill & Moore,

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2015; Lang & Armstrong, 2018), perceived performance (Jaffal et al., 2012) and bad habits from previous behaviour (Wiederhold & Martinez, 2018) .

Additional studies have adopted cluster analysis to provide a socio-demographic division of consumers to explore the causes of inconsistencies (Jaiswal et al., 2020; Yoo et al., 2020). Similarly, there has been research which treated those socio-demographic variables as a moderating force between determinants, such as gender, income level, and age, and actual purchase behaviours, (Qi & Ploeger, 2019; Ahmad & Zhang, 2020). However, segmenting consumers based upon their socio-demographic features may not be reliable in every context, as the existence of inconsistencies among literature (Peattie, 2010; Park & Lin, 2018).

3.6. Post-purchase evaluation

After a purchase, consumers experience green products through using them and may also unintentionally judge such products. Different feelings about may be evoked, especially when certain needs are fulfilled or not.

Purchase experience & Habit formation

Much of the literature did not focus on consumer post-purchase evaluations, even though it is indeed crucial to consider them as a process of generating 'past experience' for appraising future purchases (Borsch & Steg, 2021; Gao et al., 2015). Quality, functionality, design, and convenience, among other features, contribute to a comprehensive user experience which generates certain attitudes or routine emotions towards a given green product (Ahmad & Zhang, 2020; Lundblad & Davies, 2015).

Positive experiences arouse emotions towards certain products and facilitate the formation of habits, leading to more automatic decision-making processes for future green purchases (Steg & Vlek, 2008; Park & Ha 2012; Dillahunt et al., 2009). Those positive green purchasing experiences might have spill-over effects toward other green products (Peattie, 2010; Santarius & Soland, 2018). In contrast, failing to fulfil certain needs or expectations may diminished trust of green products (McNeil & Moore, 2015; Joshi & Rahman, 2015).

Wiederhold and Martinez (2018) explained the inertia of purchasing behaviour, suggesting that consumers may show no willingness to change their behaviour and deep-rooted habits. Thus, no matter how positive or negative a product's connotation, habitual and routine appraisals often sway future decision-making processes with little possibility to be changed (Testa et al., 2020; Peattie, 2010).

4. Discussions and Implications

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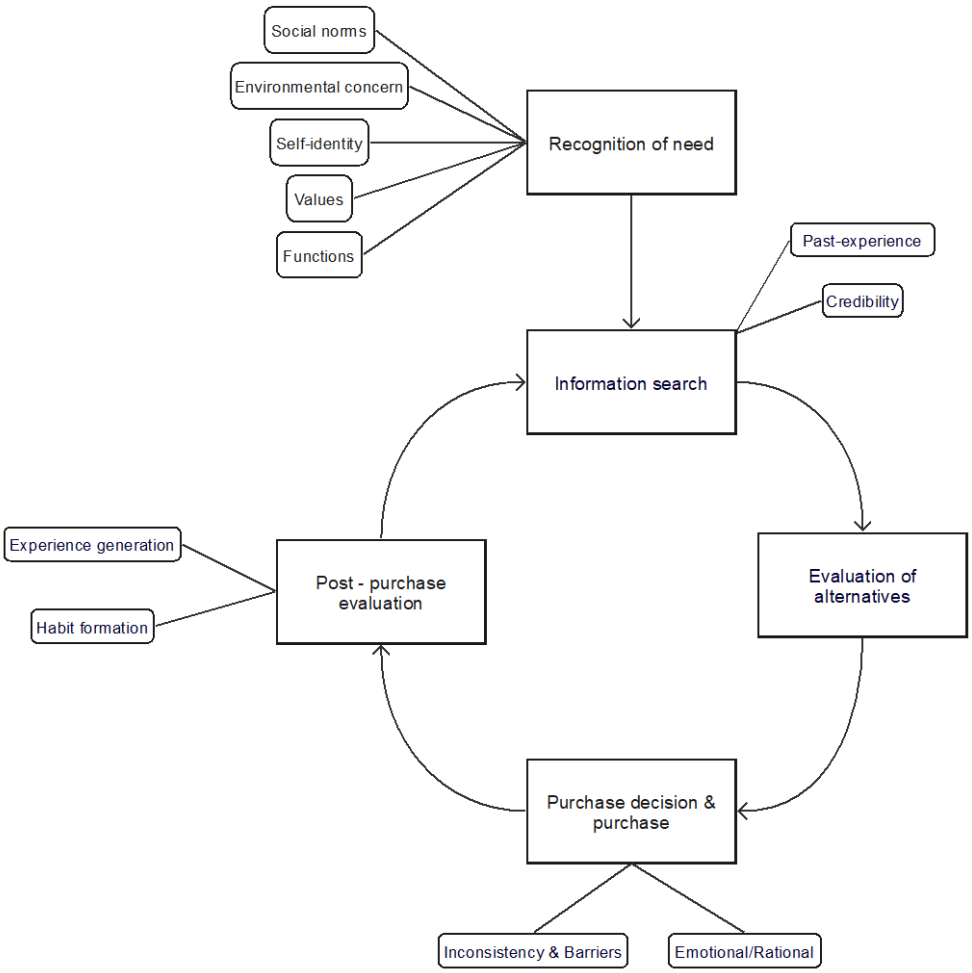

Figure 4 – Modified Theoretical Framework.

Figure 4 exhibits a synthesis of this study's theoretical results under the perspective of CBP. As shown, this study observed the process of the CBP framework in the context of green purchasing. Needs elevate the information search by consumers, which involve both the memorisation of past experiences and credibility of new information. Afterwards, consumers compare the availability of products in the market and proceed to decide which products to buy. In addition, barriers, extant emotions, and the extent of rationality may lead to inconsistencies between decisions and purchases. Finally, purchasing products combines consumers personal evaluation and experience about a product, which then forms a past-experience and knowledge for future occasions. Following the appraisal approach conceptualised by previous scholars, this review concludes that the buying process of green products is a circular process triggered by needs and falls in the loop of experience creation and backtracking.

Despite the recognition of needs, one's initial experience with a given green product stands as the foundation for future purchases as well as the information available about green products. On the one hand, it is important for marketers and green product providers to understand how their products could fulfil consumer needs and to improve the services provided at the first place. On the other hand, guilt may not trigger green purchasing but rather the tendency of consumers to avoid self-blaming. Thus, environmental-protection campaigns may not provide as much of an effect as previously assumed. In contrast, it may be more influential to create 'warm' emotional links between consumers and the environment (Lee, 2008). For instance, emphasising the positive effects of a good

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environment on human health instead of how the environment is suffering from anthropogenic harm.

In terms of the widely used theoretical models, many researchers noted the need to complement or extend existing frameworks to acquire a comprehensive understanding of consumers' purchase decision-making. Such suggestions highlight the importance of considering the emotional state of consumers or including irrational sensibilities in rational behaviour models (Bray et al., 2011). However, attempts to combine and consider the vast array of possible variables in one study is unrealistic and may cause confusion for participants when collecting data (White et al., 2019). Furthermore, the significance of emotions is clearly underestimated in current studies on green purchase behaviour. It would be beneficial to explore how emotions at purchase and emotions toward a product affect purchasing decisions differently. Some purchases may also result from positive emotions (Song & Kim, 2019; Lindenberg et al., 2018) or social pressure (Kim & Seock, 2010; Sun et al., 2022). Thus, it is also crucial to stop essentialising all purchasers of green product as green consumers, but to research all consumers and study the possibilities of their green purchases.

From another perspective, the belief of 'earth-citizenship' may only motivate a minority of bio-spheric consumers to purchase green products. And the minority of intrinsically motivated individuals may not be sufficient to support the sustainability targets of the whole population. Thus, triggering collective empathy, therefore, is still more crucial to sustainability; people behave sustainably not only for themselves, but also others (Bouman & Steg, 2019). When individuals observe a trend of purchasing green products, or recognise the efforts of others, it is more likely that they will purchase green products with a positive attitude. Potentially fruitful recommendations for marketers would be to advertise group or family order discounts to promote such collective behaviours and attract consumers with high price-sensitivity. Meanwhile, policy makers may also provide consumers with more green product information to avoid scepticism about green washing and environmental cynicism, as well as to encourage the habit formation with appropriate short-term costs.

Furthermore, it is also worth noting that consumers' green purchases may not fully represent their self-identification as being environmental-friendly or having altruistic/bio-spheric values. Self-enhancement, on most occasions, is what triggers green purchase behaviour, such as enhancing one's self-image or establishing a green self-identity to improve self-perception and feel better (Ramayah et al., 2010; Lindenberg et al., 2018; Leary, 2014). Thus, it is likely that the environment itself is not the primary consideration for consumers, as they may believe that the price paid is not worth protecting something they regard as less important than other elements (e.g., financial status). In this case, it may be necessary to suspend the conceptualisation and abstraction of 'environmental-protection' or 'sustainability' and, instead, provide visual and in-depth information for consumers to understand those phrases.

5. Limitations

This study contributes to the literature with an in-depth analysis and synthesis of the recent literature on green purchasing behaviour. However, equally central to the field of sustainability are the trending research fields of circular and sharing economy, which were not included in this study. Future reviews should also focus on how the circular and sharing economy each fulfil the needs of consumers and what expectations consumers have of those business models.

Furthermore, as only Scopus was used for compiling the literature, many other potential sources were unexamined. Regarding the possible critical views offered by those sources, it would be beneficial for future scholars to discover literature that may be ignored and could contribute to future research on consumers' green purchasing behaviour.

Declarations of Interest: None

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