Article

Modelling the Purchase of Green Packaged Products: The Significant Impact of the West–East Cultural Context

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Abstract: Although a relatively recent phenomenon, green packaging has been the focus of extensive research aimed at understanding consumer perceptions of green packaging and consumer behaviours toward green packaging. The effectiveness of these inquiries, however, has varied. The current study has determined that the theory of planned behaviour (TPB) has had the highest level of effectiveness and promotion of scientific progress in this field. This study contributes to the research by combining diverse research endeavours regarding environmentally sustainable packaging. The methodology used initially produced only moderately sufficient fitting indicators. Nonetheless, the literature suggests that there are significant differences in consumer behaviours between Western and Eastern cultural contexts. The importance of cultural sensitivity and cross-cultural understanding in a global economy is highlighted by the disparities among consumers. By recognizing and valuing these diversities, companies can successfully encourage the adoption of eco-friendly packaging through the adoption of policies that take into account the cultural context.

Keywords: consumer behaviours; ecological; green; eco-friendly; packaging; Western; Eastern; culture; values; TPB

1. Introduction

The outer covering of a product is referred to as packaging [1]. The majority of products on the market are prepared with packaging to keep them safe and to promote marketing purposes [2]. Several studies have demonstrated the importance of packaging in the areas of product protection, logistics efficiency, and sales promotion [3–5]. Thus, packaging is an essential aspect of the movement of goods [5]. Hence, there has been an increase in the consumption of resources and subsequent pollution due to the increased movement of products and, consequently, due to their packaging [5].

It was previously assumed that product packaging's main purpose was to be attractive to the consumer and protect products; environmental pollution and the ecological impacts of packaging were generally ignored by consumers, as packaging was simply discarded [1]. The packing method is also important because, as a result of careful packaging design, a product's contents, characteristics, and attractiveness can be conveyed. In other words, packaging plays a critical role in product marketing [6]. Therefore, a strong branch of packing research has focused on understanding how packaging factors affect consumer choices and decisions, e.g., labelling, characteristics, or size [7–9].

In terms of environmental impacts, the global consumer packaging market has a significant burden [10]. There are severe pollution problems worldwide that have arisen from non-environmentally friendly packaged products [11,12]. However, economic development amid the overexploitation of natural resources and increasing pollution is an increasingly undesirable outcome in the minds of modern citizens, influencing sustainable development in general [13]. Recently, countries have adopted legislation to limit the overpackaging of goods and thus reduce the environmental impact of their packaging waste [1]. Accordingly,

attempts to design green packaging have become quite popular [1,14]. Globally, green packaging has thus gained great popularity in recent years [4].

Green packaging has successfully drawn attention to its ecological friendliness and sustainability over time [2]. An environmentally friendly, or green, package is one that serves consumer needs and benefits the environment at the same time compared to the standard packaging of a product [15]. In practice, the term green packaging refers to packaging that is environmentally friendly, made from natural materials, can be recycled and used, and promotes sustainability throughout its life cycle. In addition to being harmless to the environment, it is safe for both humans and livestock [16]. Hence, sustainable packaging is vital to the health, waste disposal, energy consumption, resource conservation, and environmental protection of people [17].

Due to the growing awareness of this issue, it has become increasingly important for industrialists and retailers to consider it; new standards are encouraging people to minimize their environmental footprint and think more critically about how their purchases and products affect the environment. The green packaging market is, therefore, expected to grow significantly in the coming years, mainly through the introduction of new, strong policies and government enforcement [2]. The main practical enabler of this growth is the inclusion of bioplastics in some initiatives for eliminating waste and pollution [18]. In many cases, oil and petroleum products are no longer needed due to the emergence of completely biodegradable packaging that substantially reduces carbon footprints [19–21]. Notably, consumers are increasingly purchasing products with environmentally friendly packaging to reduce the amount of packaging pollution that is generated [22].

The advent of environmentally friendly packaging has prompted research into consumer attitudes and actions regarding this phenomenon. Despite recent studies, a comprehensive model of consumer behaviours toward green packaged products has yet to be established. Consequently, the perception of environmentally friendly packaging among consumers remains ambiguous. However, it is imperative that this common issue is thoroughly comprehended.

The objective of this article is to conduct a comprehensive review of the existing literature on the adoption of environmentally friendly packaging products. The aim is to collate all relevant data and determine the feasibility of developing a universal model that can effectively synthesize the current knowledge on the subject. Furthermore, we investigate the potential presence of significant moderators through which specific attributes of a given population can influence the model. Therefore, the structure of this article is as follows. In the Section 2, we perform a qualitative literature review of the various studies related to the purchasing of green packaged products. The Section 3 of the document outlines the methodology employed in gathering data and evaluates the adequacy of the model fit. The Section 4 presents and elaborates the obtained results, and the Section 5 ends this study by offering its conclusions.

2. Literature Review

2.1. Green Packaging

The vast majority of products on the market are packaged in a manner that ensures safety and fulfils marketing purposes; thus, the perception of packaging among consumers has been the object of many studies in the field of consumer behaviours [23–26]. In addition to influencing the perception of a product, the design of a package influences brand identity, product preferences, and product volume and use perceptions [27,28]. The evaluation of a product has been shown to influence the attitudes or purchase intentions of consumers in addition to their purchasing decisions [29,30].

Undoubtedly, packaging materials are one of the largest contributors to direct environmental impacts. The concept of sustainable green packaging refers to packaging that has a reduced environmental impact, which is in contrast to conventional packaging [26,31]. The concept of green packaging is commonly used to designate packaging products that have notably fewer harmful effects on the environment and consume less energy during their

life cycle than the commonly used traditional alternative [32]. For example, compared to traditional polyethylene terephthalate (PET) bottles, green alternatives (such as bioderived and recycled PET bottles) offer reductions in fossil fuel consumption, ranging from 13% to 56%, on a cradle-to-cradle basis [33]. As part of their fulfilment process, all relevant and determinable environmental considerations and restrictions should be taken into account, as sustainable packaging is a form of "design for the environment," which integrates environmental concerns into production and design processes [34]. Green packaging is not only ecological in nature but also uses sustainable materials that have been produced in accordance with energy efficiency [30]. In today's packaging industry, materials are being reduced, recycled content is being increased, and renewable materials are being increasingly integrated into the lifecycle of packaging, from production through consumption to disposal and postdisposal [35,36]. The use of alternative biodegradable materials is also common for green packaging [37,38].

Following the current green movement, companies and brands are strategically investing in eco-innovations to prevent and reduce environmental damage, limit packaging materials, and adopt environmental principles to ensure they are aligned with customers and are valued more by them, thereby increasing product consumption and adding value to their business as a whole [39,40]. Indeed, in most industries, including pharmaceuticals, personal care, and fast-moving consumer goods, green packaging is becoming crucial [41,42].

2.2. Theories of Consumer Behaviour

In psychology and the social sciences, several theories attempt to explain human behaviours and decision making. These theories provide insights into the underlying factors that influence our attitudes, beliefs, and actions. Understanding these various theories, then, can help us better comprehend the complexities of human behaviours and devise effective strategies for promoting positive changes in society in regard to green packaging.

To provide a comprehensive understanding of consumer pro-environmental behaviours, value–belief–norm (VBN) theory is often employed [43]. VBN suggests that individuals' environmental values influence their beliefs regarding environmental protection, resulting in the formation of personal norms concerning environmental behaviours. Individuals' personal norms determine how they should behave in certain situations based on their internalized moral standards [44]. Various environmental contexts have thus been studied with the VBN model, e.g., pro-environmental consumer behaviours, such as pro-environmental travel behaviours, and recycling behaviours [45–47].

Cognition–affect–behaviours (CAB) theory is a social psychology framework that suggests thoughts and emotions affect behaviours. According to the CAB model, attitudes are determined by cognitive and affective factors [48]. A cognitive evaluation entails assessing factual information on an object or situation, while an affective evaluation involves assessing an individual's emotional response to that object or situation [49].

Hence, green consumption behaviours have been investigated using CAB theory, as consumers' attitudes, as well as their emotional responses to environmental issues, significantly affect their intention to purchase environmentally friendly products [50]. Specifically, consumers' cognitive and affective responses to environmental issues, such as their sense of responsibility and concern for the environment, strongly predict their green consumption patterns [51]. Other authors have used CAB theory to investigate the influence of greenwashing on green consumption behaviours [52].

In addition, the norm activation model (NAM) is a theoretical framework that explains how and why people engage in pro-environmental behaviours [44,53]. Under the NAM, behaviour is guided by altruistic behaviours due to personal norms rather than social norms [54]. The NAM thus suggests that the awareness of consequences and the attribution of responsibility play an important role in activating a consumer's commitment to altruistic behaviour [55]. Nevertheless, personal norms are notably and significantly correlated

with altruistic behaviour only when individuals are willing to accept responsibility [54]. Hence, the NAM provides a useful framework for understanding a wide range of pro-environmental behaviours, including energy conservation, sustainable transportation, and recycling [45,46,56].

As a social psychology framework, the theory of reasoned action (TRA) was formulated to address some of the criticisms of rational choice explanations [57]. The TRA proposes that people are rational when they utilize available information in a systematic manner while recognizing the importance of social influence on individual rationality. It therefore explains human behaviour as a function of the attitudes individuals have toward a given behaviour as well as the subjective norms that govern that behaviour [58]. The TRA has been used to investigate the intentions of participants to engage in general acts of pro-environmentalism [59]. Some research has also adopted this framework to study people's participation in pro-environmental behaviours; these results suggest that the attitudes toward these behaviours and the perceptions of the social norms concerning them are important predictors of people's engagement in them [60]. The TRA has also been used to examine the relationship between environmental knowledge, environmental concern, and green purchase intention among young consumers [61].

Finally, the theory of planned behaviour (TPB) integrates the concept of perceived control over one's own behaviour into the TRA [62]. This extension thus accounts for those contexts where an individual may intend to perform a certain behaviour, but that performance is hindered by the individual's lack of confidence in their control over this behaviour [63]. A wide range of behavioural domains has been examined using the TPB, e.g., why individuals purchase organic foods or recycle [64–67]. Hamilton and Terblanche-Smit [68] have also applied the TPB to study resident intentions to purchase eco-friendly cars, while Olya et al. [69] adopted it to predict why Cypriots continue to patronize and recommend green hotels. Examining the intention to purchase green food in China, Qi and Ploeger [70] adopted the TPB, which has also been used by Askadilla and Krisjanti [71] to examine the intentions of Indonesians toward the purchase of green cosmetics based on the original TPB predictors.

Moreover, by adopting TPB-based models, many researchers have examined consumers' intentions to purchase sustainably packaged products [32,72,73]. All three TPB factors significantly influence purchase intention, indicating that the TPB is a useful tool for understanding sustainable packaging behaviours. In sum, the TPB is widely used in research on green packaging's effects on consumers because it is a comprehensive and effective framework for understanding the factors that influence behaviours and designing interventions that promote environmentally sustainable behaviours. Accordingly, the TPB is explored further below and used as the theoretical basis in this study.

2.3. Development of TPB-Based Hypotheses concerning the Purchase of Eco-Packaged Products

According to Ajzen [62], attitudes, subjective norms, and perceived behavioural control can predict behaviour intention. Consumer attitudes play a key role in green purchase behaviours, influencing purchase intentions toward green packaged products [74]. A person's attitude is defined as his or her degree of psychological favourableness toward an object [75]. Accordingly, attitudes play a central role in numerous consumer decision-making theories, not only in the TPB. An important part of selling products or services is identifying customer attitudes and presenting products or brands accordingly.

Studies show that customers become more committed to purchasing sustainable products if they have a positive attitude toward them [76,77]. Generally, customers' attitudes depend on their past experiences with a brand or company; if customers have a positive experience with a brand, they will purchase that brand again [78,79]. When consumers have positive feelings about eco-friendly packaging, they are more likely to purchase a product that uses such packaging. A study in the Indian context, for example, shows that attitude toward green purchase behaviours is positively correlated with the purchase of ecologically packaged products [74]. Previous research has also shown that consumer attitudes toward

eco-friendly packaged products influence their purchase intentions [80,81]. The intention to purchase eco-friendly packaged products thus demonstrates the willingness to purchase them. Therefore, we posit the following hypothesis:

H1: *There is a positive relationship between the attitude toward ("ATT") and the intention to purchase green packaged products ("PINT").*

Subjective norms refer to individual perceptions of the attitudes of others about their engagement in a particular behaviour [62]. In the context of purchase behaviours, this reflects the extent to which individuals perceive social pressure from their reference group(s) to purchase a particular product or service. As a result of socialization, observational learning, and social control, subjective norms are sustained in several ways [82].

Tsang et al. [83] have found that subjective norms positively influence purchase intention toward mobile phones in China: Consumers' purchase intention is positively influenced by their perception of how much their reference groups value the use of mobile phones. Consumers who perceive strong social pressure from their reference groups to purchase organic food are also more likely to intend to purchase it. Chen [84] has examined the influence of subjective norms on purchase intention toward green products in Taiwan. These results show that subjective norms have a positive effect on purchase intention. Consumers who perceive strong social pressure from their reference groups to purchase green products are thus more likely to have a higher purchase intention toward these products. Consumers in Malaysia are also more likely to purchase green packaging products when a high level of pressure is being exerted by subjective norms [82]. Subjective norms are, therefore, the pressures experienced by individuals to exhibit (or not) certain behaviour [62]. Overall, then, these studies demonstrate that subjective norms can have a positive effect on purchase intention across various product categories and cultural contexts. Accordingly, if the social environment offers a positive appreciation of green product purchase intention, such purchase intention will also be high, resulting in the following hypothesis:

H2: *There is a positive relationship between subjective norms ("SUB") and the intention to purchase green packaged products ("PINT").*

Perceived behavioural control is a concept that encompasses the perception and control of the internal and external factors that are capable of hindering or facilitating the accomplishment of behaviours and their results [85]. Therefore, those who are in a greater position of control and who have all the available means and opportunities for achieving their goals are more likely to follow through on a certain behaviour [58]. People's perception of controllability (in terms of their ability to perform a particular action and the opportunities that are available to them) is thus reflected in perceived behavioural control [86].

Research on green packaging indicates that the intention to purchase products using green packaging seems to be influenced by perceived behavioural control [87,88]. According to Mohiuddin et al. [89], there is a significant and direct link between perceived behavioural control and the intention of Malaysian business students to purchase green vehicles. The students demonstrated high confidence in and recognized the availability of resources needed to adopt green vehicles [82]. Afroz et al. [90] have found that perceived behavioural control is positively related to the intention to purchase environmentally friendly products and to actual purchase behaviour. These authors conclude that increasing perceived behavioural control may, therefore, be an effective strategy for promoting green consumption. McEachan et al. [91] also show that perceived behavioural control is positively related to the intention to purchase healthy food and to actual purchase behaviours. These authors suggest that interventions promoting healthy eating should aim to increase perceived behavioural control by providing information on healthy food options and practical tips for incorporating them into daily life.

Overall, then, these studies suggest that perceived behavioural control is an important predictor of purchase intention in various contexts. Furthermore, perceived behavioural control and behavioural intent can be used to directly predict behavioural actions for at least two reasons, according to Moorthy et al. [82]. First, given a constant intention, the effort expended to lead a course of behaviours to a successful conclusion likely increases as perceived behavioural control increases. Moreover, perceived behavioural control can often be used as a substitute for a real control measure; thus, there is a direct correlation between perceived behavioural control and behavioural achievement. Therefore, the following hypotheses are proposed:

H3a: *There is a positive relationship between perceived behavioural control ("PBC") and the intention to purchase green packaged products ("PINT").*

H3b: *There is a positive relationship between perceived behavioural control ("PBC") and green packaged product purchase behaviours ("PBEH").*

An indicator of a person's willingness to perform certain behaviours, intent acts as a sign, capturing the factors that motivate a person to act in a particular way [61]. Hence, the immediate antecedent of a behaviour in the TPB is the intention to perform that behaviour. If there is a strong intention for the behaviour, the behaviour will more likely follow [82]. Chaudhary and Bisai [87] found that among millennials in India, the higher the intention behind green purchasing is, the greater the green purchase behaviour. Similarly, Jaiswal and Singh [92] confirmed that green purchase intention leads to green purchase behaviours. The incidence of green purchase behaviours among Muslim consumers also depends heavily on their purchase intentions, according to Ghazali et al. [93]. Lian and Yoong [94] also found that the purchase intentions of adult Malaysian consumers influence their decisions to purchase organic food. Park and Kim [95] showed a positive relationship between purchase intention and purchase behaviour regarding digital cameras. Wee et al. [96] conducted a study on the relationship between purchase intention and actual purchase behaviour regarding organic food products, demonstrating that the former is a significant predictor of the latter. Finally, Verhagen and Van Dolen [97] investigated the relationship between purchase intention and purchase behaviour for mobile applications. They also revealed that purchase intention is positively related to actual purchase behaviour. Therefore, the following hypothesis is proposed (Figure 1 is a graphical depiction of the overall proposed model, including all the hypotheses):
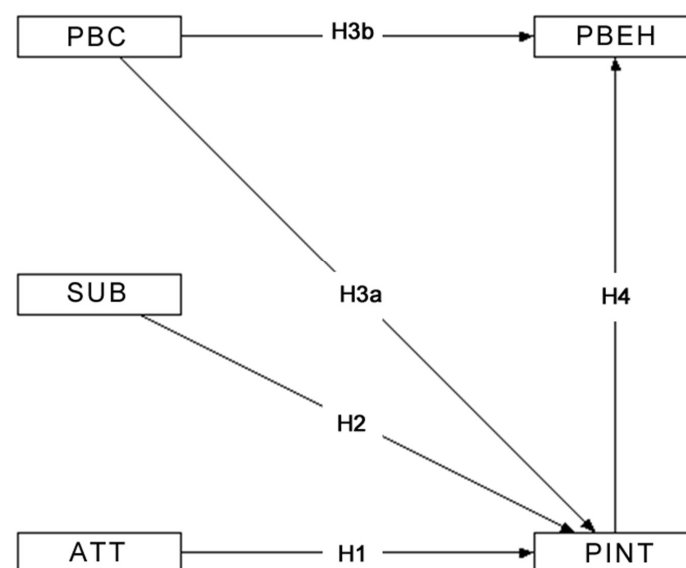

Figure 1. Conceptual model based on the theory of planned behaviour.

H4: *There is a relationship between the intention to purchase green packaged products ("PINT") and green packaged product purchase behaviours ("PBEH").*

2.4. West—East Differences in Thought and Behaviours

Undoubtedly, cultural context has a profound impact on people. Several studies have demonstrated that people think and behave differently in the West and the East [98–100]. Many social scientists have specifically compared the cultural differences between Western and Eastern societies [101–103]. Some evidence suggests that the social structural differences between these cultures play a greater role in promoting certain cognitive processes compared to others [104].

A basic perception that has emerged in the related research is thus that the East is more collectivist in its orientations than the West [105]. On the other hand, the West is centred on individualism, a set of cultural norms and values emphasizing individual freedom, autonomy, fulfilling one's own potential, and making one's own choices. Collectivism, on the other hand, places an emphasis on the community, group duty, and maintaining the harmony of the group as a whole [104]. Individualists are, then, less susceptible to social influence in purchasing situations than those who follow collectivist guidance, and collectivists are more likely to give way to social influence in purchasing situations than individualists [105].

Moreover, Americans and Europeans, who are embedded in more independent social systems, are more likely to believe that the world is discrete and discontinuous and that rules and properties can be used to predict an object's behaviours and to engage in analytical thinking [106]. East Asians, who are incorporated into more interdependent social systems, typically have a more holistic way of thinking and believe that the focus should be on an entire field and that the relationships between things are important.

Additionally, in the Western world, materialism is often a value orientation that reflects the importance that consumers place on purchasing and owning goods [107]. In the West, people are often able to achieve their main life goals or final states of happiness through acquisitions. Accordingly, goods are perceived as a key to happiness due to the fear of rejection by others and the uncertainty in one's own self-worth [104,108]. Hence, materialists define themselves through their possessions rather than through their experiences or relationships with others [109]. In contrast, in relevant studies, Eastern respondents express significantly greater environmental concerns, a more pro-environmental self-identity, and more sustainable consumer behaviours than British respondents [108].

There is another cultural difference between Western and Eastern societies in terms of their emphasis on self-enhancement or self-improvement. In Western cultures, self-enhancement is typically prioritized; this entails promoting oneself and one's accomplishments and encouraging others to do the same. Eastern cultures, on the other hand, notably tend to place a high value on self-improvement, defined as striving to be a better person to have a positive effect on society [110].

Furthermore, there is a critical difference between Western and Eastern societies in regard to social norms. The social norms in Eastern cultures are stronger than those in Western cultures, while conformity is valued more highly in Eastern cultures than in Western cultures [111]. Western cultures, however, place a higher value on individual autonomy and self-expression than Eastern cultures. Notably, these are just a few examples of the cultural differences between Western and Eastern societies that have been investigated. Concerning these cultural differences, there is clearly a large amount of information to consider, as they comprise an extremely complex matter.

3. Methodology

3.1. Approach

Structural equation modelling is a statistical technique used to examine and evaluate hypotheses pertaining to the relationships between multiple interacting variables. Conversely, meta-analysis is a systematic approach to gathering and scrutinizing data through a

comprehensive review of existing literature. The application of statistical concepts and tools is utilized to interpret data and generate generalizable results. The utilization of a blend of methodologies is a statistical approach that is referred to as meta-analytic structural equation modelling (MASEM). In order to utilize these techniques to identify moderating factors that can explain the variability in outcomes, a series of primary investigations are required. When executed appropriately, MASEM can effectively elucidate the present status of scientific understanding.

MASEM is a statistical instrument that can be utilized by researchers to estimate and contrast various theoretical models while also assessing their adequacy in fitting the data. MASEM employs a statistical methodology to normalize and aggregate the outcomes of multiple investigations into a particular subject matter. This technique utilizes a quantitative framework to integrate the findings of diverse studies. Hence, the consolidation of data from various studies enables the construction of a unified model capable of explaining the interrelationships between diverse variables and facilitating comparative analyses across studies [112].

Through the process of fitting a model to data, it is possible to ascertain the validity of a given theory and determine whether it should be utilized. In order to ensure the accuracy of the results, it is necessary to confirm that the variance-covariance matrix of the constructs under investigation and the sample size are adequate for fitting the focal models to the data. This study examines correlation matrices within the context of MASEM and integrates them into a confirmatory factor model. The model under consideration is the conventional TPB model. This study was carried out utilizing the metaSEM software (version 1.2.5.1) package developed by Cheung and Chan [113,114]. A computer with an i7-6770 processor and 16 GB of DDR4 RAM was used to process the data using R x64 3.3.1.

An essential component of this approach involves the utilization of goodness-of-fit assessments to ascertain the degree to which the central model aligns with the observed data. In order to assess the adequacy of the model, three factors were employed [115]. The comparative fit index (CFI) is a metric that assesses the extent to which a model is noncentral through the use of an incremental measure. It is advisable to set a minimum threshold of 0.90, while a value of no less than 0.95 is often suggested to ensure a better fit with the data. The Bentler–Bonett index, commonly referred to as the normed fit index (NFI), is also utilized. In this case, the optimal model is characterized by a chi-squared value of zero. Furthermore, the poorest-performing model exhibits a chi-squared value equivalent to that of the null model. The recommendations pertaining to NFI goodness-of-fit bear resemblance to the CFI recommendations. The computation of the root-mean-square error of approximation (RMSEA), which is an absolute fit index, is contingent upon the noncentrality parameter and yields a value of zero if the chi-squared statistic is less than the degrees of freedom. A superior fit is indicated by a lower value in the index. The thresholds denoting excellent, good, and acceptable fits are 0.01, 0.05, and 0.08, respectively.

3.2. Data Collection

This section outlines the procedure used to conduct a comprehensive literature review aimed at gathering data on consumer behaviours regarding the procurement of environmentally friendly packaging. A comprehensive search was conducted across multiple databases, namely, EBESCO, ScienceDirect, Google Scholar, Emerald Journals, SAGE Journals, SCOPUS, Springer, Taylor & Francis, and ProQuest. The searches were conducted using keywords such as "sustainable", "green", "ecological", "packaging", "packaged", "purchase", and "purchasing". The authors conducted multiple searches utilizing various combinations of keywords to optimize the potential yield of results. In order to conduct further analysis, it is necessary for the text to contain at least one term that specifically pertains to the acquisition of a product featuring environmentally friendly packaging.

The aforementioned condition would lead to a restricted usability of the search results as it would exclude any green behaviours that are not directly related to the focal field of this study. Following the identification of multiple texts pertaining to sustainable packaging

in the initial phase, a subsequent phase was undertaken to meticulously scrutinize these materials to ascertain the availability of pertinent data for our meta-analytical investigation.

The subsequent stage of this procedure entailed the curation of research investigations across the previously published scholarly articles. The authors conducted an independent screening of each article to determine their inclusion, and they subsequently documented the selected articles. For an article to be deemed eligible for inclusion, it had to have incorporated pertinent information and established a connection with the domain of eco-packaged product acquisition. To enhance diversity and reduce publication bias, we refrained from making distinctions based on publication origin.

In order to detect any discrepancies in the incorporation or omission of a specific article, the authors conducted a comparative analysis of their respective lists. Upon discovering inconsistencies, the authors reviewed the specific cases. Following a second screening process, a total of 23 studies were retained, as presented in Table 1. The authors conducted independent coding of each of the selected articles, followed by a joint review of their respective coding. Here, "coding" refers to the identification of the main characteristics (such as country and number of participants) and the correct classification (West/East) of each article included in this study. The final result of this process can be seen in Table 1.

Table 1. List of selected studies.

Author/Year	Country	East/West	N
Cammarelle et al. [116]	Italy	West	260
Ebrahimi et al. [117]	Iran	East	450
De Canio et al. [118]	Italy	West	278
Gupta [119]	India	East	111
Hussain et al. [120]	Pakistan	East	140
Senger and Özülkü [121]	Germany	West	422
James and Kurian [122]	India	East	300
Koenig-Lewis et al. [63]	Norway	West	312
Jayasinghe [123]	Sri Lanka	East	194
Kashif and Rani [124]	Pakistan	East	167
Martinez [125]	Portugal/Colombia	West	314
Moslehpour et al. [126]	Taiwan	East	357
Nguyen et al. [127]	Vietnam	East	396
Rocha [128]	Portugal	West	293
Prakash and Pathak [74]	India	East	204
Prakash et al. [129]	India	East	227
Rui et al. [130]	Italy	West	62
Su et al. [131]	Vietnam	East	478
Testa et al. [132]	Italy	West	1643
Nguyen et al. [133]	Vietnam	East	308
Trivedi et al. [9]	India	East	308
Van Birgelen et al. [88]	Germany	West	176
Zhao et al. [5]	China	East	257

The extraction of critical data from the documents included both the zero-order Pearson coefficient and the sample size. Several studies failed to account for all the variables presented in the literature review. The presence of incomplete data is a common occurrence in the process of conducting meta-analyses, as noted by Furukawa et al. [134] and Koopman et al. [135].

4. Results

4.1. Original Model

Table 2 displays the outcomes of our implemented methodology. Figure 2 depicts the resulting model in a graphical format. The correlation between purchase intention and purchase behaviours is notably strong, as evidenced by a load value of 0.831 and a compar-

atively minor standard error of 0.041. This supports the fundamental tenets of the existing literature on the correlation between purchase intention and subsequent behaviours.

Table 2. Details of the original model results.

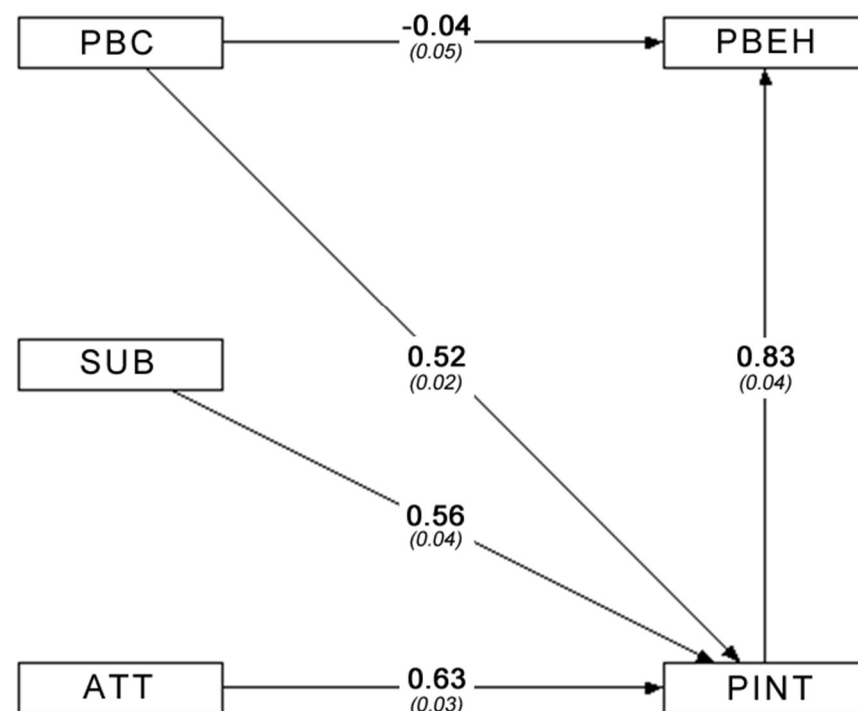|		PINT	PBEH
ATT	*Estimate*	0.630	
	Std. Error	0.026	
	Z-value	24.475	
PINT	*Estimate*		0.831
	Std. Error		0.041
	Z-value		20.317
SUB	*Estimate*	0.555	
	Std. Error	0.039	
	Z-value	14.151	
PBC	*Estimate*	0.523	−0.043
	Std. Error	0.021	0.049
	Z-value	24.774	−0.884

Figure 2. Results of data fitted into the original model.

The relationship between attitude and purchase intention is the second strongest, with a load value of 0.630 and a standard error of 0.026. The outcome yields a z-score of 24.475, indicating a high level of statistical significance. The constructs of subjective norms and perceived behavioural control exhibit comparable load values in relation to purchases, with respective values of 0.555 and 0.523. The standard errors associated with their data are relatively small, measuring at 0.039 and 0.021. The TPB proposes several antecedents for purchase intention, namely perceived behavioural control, attitude, and subjective norm. These antecedents have been found to be highly significant, with z-values of 24.774, 24.475, and 14.151, respectively.

The results indicate that perceived behavioural control has a negative impact on purchase behaviours, which is in contrast to the traditional proposition of TPB. Nevertheless, this particular issue is not significant; the estimated loading value is lower than the value

of the estimated standard error in absolute terms, leading to a non-significant statistical relationship with a *z*-value of −0.884 and a *p*-value of 0.377. Consequently, there is a significant probability that the relationship is non-existent, suggesting that the actual relationship load is equivalent to zero.

The model's goodness-of-fit evaluation is presented in Table 3. The indices pertaining to goodness of fit indicate that the level of fit is suboptimal. Given its confirmatory nature, structural modelling implies that an alternative model may better fit the observed data. Based on our findings, it appears that the association between perceived behavioural control and purchase behaviours is not statistically significant. However, all other relationships were found to be highly significant ($p < 0.001$). Therefore, it is possible that purchase intention mediates the relationship between perceived behavioural control and purchase behaviours.

Table 3. Fit indices for all the original models.

Sample size	7657
Chi-squared of target model	569.803
DF of target model	5
RMSEA	0.122
TLI	0.493
CFI	0.746

4.2. Adjusted Model

Consequently, an adapted version of TPB was evaluated, wherein the influence of perceived behavioural control on purchase behaviours did not have a direct effect. The present model posits that behaviours are contingent upon base antecedents, namely attitude, subjective norms, and perceived behavioural control, albeit mediated by purchase intention. The detailed outcomes of the model are presented in Table 4, and their visual depiction is shown in Figure 3.

Table 4. Details of the model results for the proposed adjusted model.

		PINT	**PBEH**
ATT	*Estimate*	0.634	
	Std. Error	0.026	
	Z-value	24.849	
PINT	*Estimate*		0.806
	Std. Error		0.029
	Z-value		27.513
SUB	*Estimate*	0.562	
	Std. Error	0.039	
	Z-value	14.270	
PBC	*Estimate*	0.513	
	Std. Error	0.019	
	Z-value	27.710	

In general, the outcomes of the estimated loads do not vary much from the prior model, suggesting that the focal approach was appropriate. The load exhibiting the least deviation is the association between attitude and purchase intention, which demonstrates a marginal fluctuation of −0.005, equivalent to a relative variance of 0.72%. The standard error remained constant in both models. The estimated loads for the other antecedents' relationships with purchase intention exhibited minimal variation, measuring less than 2%. Specifically, subjective norm and perceived behavioural control demonstrated variations

of 1.27% and −1.83%, respectively. The load's absolute changes are −0.007 for subjective norms and 0.010 for the association between perceived behavioural control and purchase intention. The standard error alteration for the association between subjective norm and purchase intention was non-significant at a precision of three decimal places. Conversely, the modification in standard error for perceived behavioural control was negligible, measuring at 0.003. Consequently, the models did not exhibit any noteworthy alteration to the central precursors of purchase intention.
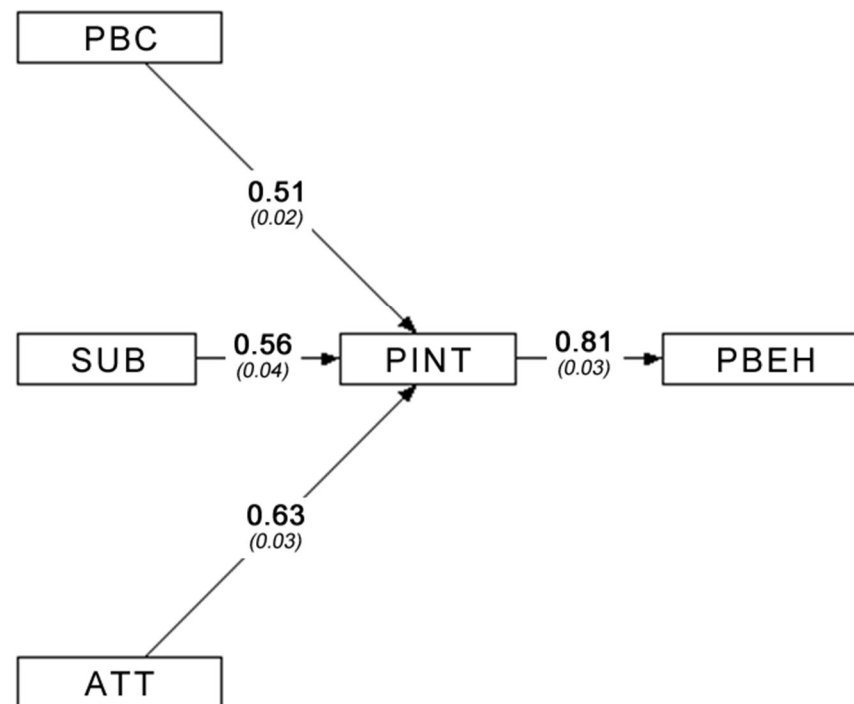
Figure 3. Data fitted into the adjusted model.

The most significant alteration in load was observed in the association between purchase intention and behaviours. Remarkably, upon eliminating an additional direct antecedent of purchase behaviours, the residual antecedent exhibits a reduced load of 0.806, while the previously estimated load was 0.831. This corresponds to a relative decrease of 3.00%, which, although modest, is not entirely negligible. Conversely, a significant decrease in the value of the standard error, a reduction from 0.041 to 0.029, indicated a relative reduction of 28.37%, or a decrease of 0.012. The analysis of the estimated load value and standard error changes reveals that the adjusted model shows a decrease in behaviours that is influenced by intention, resulting in a slight increase in the impact of unknown factors on the focal behaviours. Nevertheless, the minimal impact of intention on behaviours can be more confidently obtained.

Table 5 presents the results of the goodness-of-fit analysis for the updated model. A marginal improvement in the fit indices is observed. As an illustration, RMSEA decreased from 0.122 to 0.111, resulting in an 8.72% decrease and suggesting an improved fit compared to that of the prior model. The TLI increased by 0.085, resulting in an augmented value of 0.577. Although not yet optimal, the current model is significantly enhanced relative to its predecessor, with a 17.22% increase in this particular index. Nevertheless, the CFI exhibited no variation between the two models, provided the number of significant decimals was three.

Table 5. Fit indices of the results of the adjusted model.

Sample size	7657
Chi-squared of target model	570.581
DF of target model	6
RMSEA	0.111
TLI	0.577
CFI	0.746

Despite achieving highly significant loads with the adjusted model, the model's overall fit was inadequate for a satisfactory fit. Thus, it is necessary to either investigate an alternative model in a distinct direction or acknowledge the presence of significant heterogeneity in the data, which leads to an inadequate overall fit. Given that the literature review indicated the use of diverse base theories for modelling, it is possible to assess alternative psychological models. However, such an approach would likely yield even worse suboptimal fitting due to insufficient advances in the literature. Conversely, based on the findings of the literature review regarding the distinctions between Western and Eastern cultural contexts, it is probable that consumers from these respective regions would exhibit disparate behaviours, constituting one possible cause of the suboptimal fit.

4.3. Adjusted Models: West vs. East

The literature review reveals that there are significant variations in the fundamental personal values and behaviours between members of Western and Eastern cultural contexts. Therefore, it is possible that there is considerable diversity in the general stance of consumers toward sustainable packaging. From a methodological standpoint, it might be advantageous to fit the data from the Western and Eastern regions separately, as this approach could potentially yield a more optimal overall fit. Consequently, the outcomes obtained upon separating these two sets in the model have been visually depicted in Figure 4 and elaborated in Table 6.
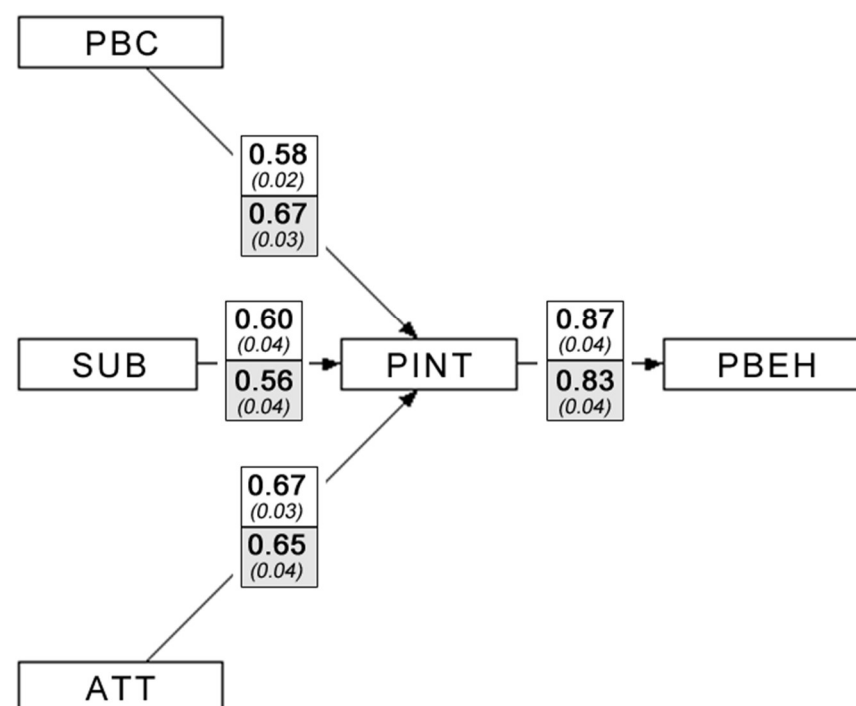

Figure 4. Final model separated by East (white boxes) vs. West (gray boxes).

Table 6. Comparative results, "East vs. West" for the adapted model.

		PINT		PBEH	
		West	*East*	*West*	*East*
ATT	*Estimate*	0.667	0.650		
	Std. Error	0.028	0.037		
	Z-value	24.086	17.684		
PINT	*Estimate*			0.874	0.830
	Std. Error			0.036	0.039
	Z-value			24.288	21.483
SUB	*Estimate*	0.603	0.558		
	Std. Error	0.039	0.045		
	Z-value	15.302	12.434		
PBC	*Estimate*	0.579	0.666		
	Std. Error	0.024	0.034		
	Z-value	23.728	19.744		

Initially, it is noteworthy that all of the links exhibit a substantial z-value, consistently demonstrating a statistical significance of $p < 0.001$. However, it is important to note that the various antecedents carry varying load degrees for purchase intention. In the Western context, there is an increase in the load values of attitude and subjective norms. This suggests that the purchasing behaviours of Western consumers are influenced by their personal positioning and the opinions of others. The literature review revealed that individuals from Western cultures tend to exhibit higher levels of materialism and individualism. This suggests that the overall disposition of individuals from Western cultures towards sustainable products is comparatively subdued and less inclined towards altruism. Our results indicate that it is more probable that an individual will exhibit purchase intention when they hold a favourable attitude towards sustainable packaging and when their surrounding environment also portrays a positive stance.

Regarding the impact of perceived behavioural control on purchase intention, it can be observed that the Eastern population exhibits a significantly higher magnitude in this association, with a value that is 0.087 greater (representing a 15.1% increase) than that of the Western population. The findings suggest that individuals from Eastern cultures exhibit a higher inclination towards purchasing a product or service when they perceive a sense of competence in its execution than individuals from Western cultures. The findings suggest that self-confidence holds greater significance for individuals from Eastern cultures, indicating a possible lower level of self-assurance in this regard. In Western societies, the inclination to purchase sustainable packaging is primarily shaped by individuals' positioning rather than their perceived ability to achieve a task.

Ultimately, this study enables us to examine the correlation between individual intentions and subsequent purchasing behaviours across both groups. This study indicates a significant positive correlation between intention and behaviours in both groups, thereby supporting the proposition that intention is a primary determinant of behaviours. However, the load in the Western case underwent a 0.043 increase over that in the Eastern case, indicating a 5.0% relative increase in load magnitude. The findings suggest that individuals in Western societies tend to exhibit a greater degree of pragmatism, as evidenced by a higher likelihood of following through on their intentions compared to their Eastern counterparts. Specifically, individuals in the East appear to be less successful in translating their intentions into action when compared to those in the West.

Notably, these observations hold significant value only in the presence of an indication of model suitability, as determined by the goodness-of-fit indicators. These are shown in Table 7, whose second column indicates the Western results and the third column the Eastern. First, in Table 7, the total sample size is almost divided equally among the Western and Eastern groups. While the West contains 49.1% of the total size (i.e., 3760),

the East contains 50.9% (i.e., 3897). This is very good because it allows an apples-to-apples comparison, i.e., each group is represented equally in the analysis.

Table 7. Fit indices of the results of the adapted model.

Sample size	3760	3897
Chi-squared of target model	153.006	113.157
DF of target model	6	6
RMSEA	0.081	0.068
TLI	0.871	0.829
CFI	0.923	0.898

With respect to the fit indices per se, a significant enhancement is observed. In comparison to the preceding RMSEA, the Western RMSEA decreased by 27.2%, measuring 0.081, which is deemed acceptable. Similarly, for the East, there is a reduction in the RMSEA value of 39.0%, 0.068, also a sufficiently good fit. The CFI for the West is now 0.93 (a 23.6% improvement), which also indicates a good fit. For the East, this improvement is 20.3%, a CFI of 0.90, also considered a good fit. The TLI exhibits notable enhancements, with a 50.9% increase for the West and a 43.7% increase for the East. Despite the fact that neither TLI meets the recommended threshold of 0.90 or higher, the substantial enhancements observed and their close proximity to a satisfactory fit suggest that the decision to partition the data into Western and Eastern cohorts was an appropriate one.

5. Conclusions

As previously mentioned, packaging refers to the external component of a product that fulfils both protective and promotional functions. In contemporary society, characterized by a heightened emphasis on consumerism, there has been a significant surge in the volume of product circulation, which has been accompanied by a steady increase in the utilization of packaging materials over the past few years. The employment of eco-friendly packaging has been steadily increasing due to private sector initiatives, legislative measures, and heightened environmental consciousness among the populace.

The aim of optimizing green packaging is to minimize the environmental impact throughout the product life cycle. The feasibility of this endeavour is largely attributable to the advancement of novel materials that are suitable for packaging and that possess ecological characteristics, including biodegradability. The emergence of green packaging as a contemporary and persistent phenomenon has prompted the testing of several theories aimed at comprehending consumer behaviours towards this practice, yielding diverse outcomes.

The TPB has emerged as the most successful and scientifically developed theory in this domain. The present investigation endeavours to integrate the findings of multiple studies on eco-friendly packaging within the TPB framework. The outcomes of the comprehensive examination of existing literature, upon integration with the initial TPB model, yield a goodness of fit that falls below the anticipated level for this particular theory. Remarkably, the correlation between perceived behavioural control and actual behaviour exhibits a slightly negative load, albeit with no statistical significance. The elimination of this non-significant association results in a considerable enhancement in the model's quality. However, the model's goodness of fit remains inadequate to the standards of the scientific community.

The suboptimal fit of the modified TPB model, despite the statistical significance of all of its associations, implies the existence of heterogeneity in the dataset. Research on consumer behaviours, which encompasses not only green packaging but also other areas, indicates significant cultural distinctions between Western and Eastern societies. Moreover, this suggests that there are notable dissimilarities in consumer behaviours toward green packaging between the Western and Eastern regions. The observed dissimilarities can be

ascribed to various cultural, economic, and historical determinants that have influenced the attitudes and behaviours of individuals towards consumer goods in these respective areas. Western consumers tend towards individualism and prioritize novelty and convenience, whereas Eastern consumers tend to place a higher value on tradition, community, and practicality. Consequently, achieving a satisfactory alignment for a model in the Western region and another in the Eastern region was adequate using distinct loadings on the model.

To the best of the authors' knowledge, no previous attempts have been made to model the distinction between West and East in terms of consumer behaviour vis-à-vis green packaging. Consequently, our findings cannot be directly compared or discussed in relation to the existing literature. However, the outcomes of this study hold significant pragmatic ramifications for enterprises and policymakers who aim to encourage the implementation of environmentally friendly packaging. Through an understanding of the essential factors that influence consumer behaviours in all situations, businesses can tailor their marketing strategies to better align with consumer attitudes, subjective norms, and perceived behavioural control regarding environmentally sustainable packaging within a particular geographic region. The aforementioned theory can be referenced by policymakers to formulate effective interventions geared toward promoting sustainable consumer behaviours and encouraging the adoption of environmentally friendly packaging.

The examination of the variance in consumer behaviours between Western and Eastern societies underscores the significance of cultural awareness and intercultural comprehension in the contemporary worldwide market. Through acknowledgement and appreciation of these differences, corporations can establish more robust policies towards customers and generate commodities and encounters that genuinely strike a chord with individuals from diverse backgrounds. It is important to acknowledge that this study has limitations, as it focuses exclusively on the moderating effect of the West–East divide on model loading. It is recommended for future research endeavours that additional moderators are assessed to enhance the model's overall suitability. Although the model achieved a satisfactory fit, it is conceivable that despite the important contributions of and findings in this study, further improvement could be attained by incorporating additional moderators that have yet to be identified or investigated.

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