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RESEARCH ARTICLE

Hey, did you see that label? It's sustainable!: Understanding the role of sustainable labelling in shaping sustainable purchase behaviour for sustainable development

Ahsan Siraj¹  | Shilpa Taneja²  | Yongming Zhu¹ | Hongbing Jiang¹ |
Sunil Luthra³  | Anil Kumar⁴ 

¹School of Management Engineering,
Zhengzhou University, Zhengzhou, Henan,
450001, China

²Centre of Research Excellence in Marketing,
Mudra Institute of Communications
Ahmedabad (MICA), Ahmedabad, India

³Department of Mechanical Engineering,
Ch. Ranbir Singh State Institute of
Engineering & Technology (CRSSIET), Jhajjar,
India

⁴Guildhall School of Business and Law, London
Metropolitan University, London, UK

Correspondence

Anil Kumar, Guildhall School of Business and
Law, London Metropolitan University, London,
UK.

Email: a.kumar@londonmet.ac.uk

Abstract

Consumers, nowadays, are becoming mindful of environmental issues than ever. The rising concerns for the adverse effects of consumption on environmental sustainability are leading to transformation in consumer behaviour. Consumers need relevant sustainability information about the products to shape sustainable purchase behaviours. On this note, marketers and organizations are increasingly using labels and logos for integrating sustainability evidence in their product offerings. This research integrates the theory of planned behaviour (TPB) with environmental concern, consumer effectiveness, consumer innovativeness and sustainable label awareness to determine how these affect the sustainable purchase behaviour for food products in China. The findings of structural equation modelling using data gathered from 273 consumers indicate all the constructs as significant, with consumer innovativeness having a negative and significant association. The present research expects to contribute to advancement in the literature on TPB and sustainable labelling by presenting a comprehensive and distinct model. Given the importance of the factors highlighted in the current research, marketers can design appropriate strategies by leveraging these determinants. The outcomes imply that marketers and policymakers need to make the consumers aware of sustainable labels and their favourable effects on the environment to promote sustainable consumer behaviour.

KEYWORDS

business strategy, environment, intention, labels, purchase behaviour, sustainability, theory of planned behaviour

1 | INTRODUCTION

Over the past few decades, the demand for sustainable/organic food has increased to a great extent (Molinillo et al., 2020). While individuals are increasingly becoming conscious of sustainability-related

issues in general, there might be competing behaviours concerning food choice due to the elements of health issues and sensory quality associated with food. Therefore, this conflict may not necessarily render the sustainability-related issues and concerns into actual behaviour (Grunert et al., 2014; Yin et al., 2022). The companies and

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regulatory bodies are increasingly communicating with the consumers regarding the social, ecological and ethical value of the items they consume (Potter et al., 2021) and, more specifically, the food products (Franco & Cicatiello, 2018; Ikonen et al., 2019). And mainly, such messages are communicated through logos and labels printed on the products marketed by the companies. Sustainable labels are crucial in informing the consumers and helping them evaluate the sustainability/green aspects of the food items to be purchased (Donato et al., 2022). These labels act as effective tools of communication regarding the presence of sustainability facets in food to better guide consumer food choices in the purchasing landscape.

Ranging from supply chain actors to the end-consumers, the stakeholders are steadily expecting the businesses to shift their focus towards environment-friendliness and reduced carbon footprints in view of having global impact (Adomako & Tran, 2022; de Ruyter et al., 2022). Consequently, the strategy formulation and implementation across all the areas such as supply chain and marketing are being redefined to incorporate the aspects of climate change, sustainability, human values and the global impact at large (Biswas et al., 2022; Shen et al., 2020; Wei et al., 2021). Sustainable/green marketing constitutes an important strategy on this vein (Lim, 2022). Among the various aspects of green marketing that are focused on creating demand for eco-friendly products while maximizing the profits to attain environmental sustainability (Jaiswal & Singh, 2018), sustainable labelling has been considered vital for achieving its objectives. Sustainable labels, also known as 'green labels', 'eco-friendly labels', 'eco-labels', 'environment-friendly labels' and 'organic labels', can be very useful in communicating and motivating the consumers towards sustainable consumption. The labels can help the consumers know about the hidden product and process attributes concerning the sustainability element in manufacturing or trading of the products they are interested in Weinrich & Spiller (2016). This can be viewed as a distinct strategy to manage and reshape the economy's demand side while focusing on social and environmental welfare in addition to economic prosperity (Potter et al., 2021).

With rising consumer concerns for sustainability, dairy companies have also started to make relevant claims using labels while marketing their products (Schiano et al., 2020). For well positioning of the dairy products in the market, the dairy companies need to understand what importance consumers assign to the sustainable element in the product. The empirical evidence shows that the consumers assign different levels of importance to the sustainability-oriented features/attributes for different categories of products (Schiano et al., 2020; van Loo et al., 2015; Xuan, 2021), and the research focused on dairy produces in this respect is scarce. For instance, the beliefs of the adverse effects of consuming dairy products on the environment and animal welfare as well as the health concerns associated with its consumption can have a significant bearing on the dairy food products market. It has been argued that consumers assume sustainable dairy products to be superior to their conventional counterparts in terms of various dimensions such as sustainability, more natural, assurance of animal welfare, better for the environmental well-being and healthier (Schiano et al., 2020; Wang et al., 2022). Therefore, for dairy product

marketers, labelling can be viewed as an authentic and understandable way to communicate sustainability information to its consumers to successfully market and position their products (Schiano et al., 2020). In addition, research argues that there are generational differences in consumers' sustainable consumption patterns, and millennials are viewed as one of the most interesting generations in this respect (Molinillo et al., 2020). The younger generation is usually more inclined towards solving social problems and environmental issues as compared to other generations (Valentine & Powers, 2013) and, therefore, can be targeted to promote such behaviours. The millennials are also considered to be leading the transformation of the marketing landscape, and they exert crucial influence on the buying behaviour of other generations as well. Despite the relevance of this generation in shaping sustainable marketing efforts and sustainable labelling being a newer method to communicate sustainability information to the consumers (Ateş, 2021; Cho & Baskin, 2018), very few studies have examined their perspective in this regard. Therefore, this research attempts to contribute to emerging literature in the field by touching a less researched aspect of sustainable labelling for shaping sustainable consumption towards the general objective of sustainable development.

One of the most robust models to understand and examine organic consumption and sustainable/green consumer behaviour has been the theory of planned behaviour (TPB) (Taneja & Ali, 2021; Yadav & Pathak, 2017). By establishing linkages between the cognitive variables, i.e., subjective norms, attitude, perceived behavioural control and behavioural intention as prescribed by TPB (Ajzen, 1991), the researchers are increasingly applying this model to describe the attitude-intention relationships concerning sustainable consumer behaviour. However, very little literature exists that is considered to explain the relationships of attitude, intention and behaviour concerning sustainable consumer behaviour (Jaiswal & Singh, 2018; Park et al., 2022). In addition, scholars in this field have stressed upon investigating other cognitive constructs including environmental and psychological variables such as environmental concerns & knowledge, environmental outcomes, consumer innovativeness, consumer effectiveness and eco-label knowledge/awareness for improving the explanatory power of this theory and to better describe the interrelationships of various important factors (Jaiswal & Kant, 2018; Taneja & Ali, 2021; Yadav & Pathak, 2017; Yin et al., 2022). Although many previous studies are mainly concerned about examining various antecedents to purchasing green/sustainable/environment-friendly products for different categories, the role of sustainable labelling in sustainable consumer behaviour is often overlooked in the literature. To address the research gaps identified through an ample review of pertinent literature, this research attempts to answer the research questions framed, as follow:

RQ1: How do consumers perceive about the sustainable labelled products?

RQ2: What are the various behavioural dimensions that determine sustainable consumption for such products?

RQ3: How do the various factors exert influence on purchase intention and behaviour concerning sustainable labelled products?

Thus, the following research objectives are specified to analyse these questions:

- To discover consumers' perceptions regarding sustainable labelled products.
- To identify the factors vital for shaping the consumption of sustainable labelled products.
- To conduct an empirical investigation of the relational linkages among the identified factors that can be leveraged to address the attitude–intention–behaviour gap in the adoption of sustainable labelled products.

For this purpose, this study adopted a mixed-method approach to understanding what influence sustainable labels exert on consumer behaviour for sustainable dairy food products. A mix of qualitative and quantitative methods are employed because the former helps gain profound understanding into the phenomena under consideration and develop robust scales to measure it, where the latter assists in testing and validating the identified measures and proposed relationships (Molina-Azorin, 2016). To this end, the research developed a theoretical framework by integrating TPB and other important constructs identified from the literature and empirical examination, i.e., environmental concern, consumer effectiveness, consumer innovativeness and sustainable label awareness.

The paper is organized as follow. Subsequent to the introduction in preceding section, Section 2 deliberates the theoretical background of research. Section 3 defines the study constructs and the framing of hypotheses. The methods employed for the research are explained in Section 4. Section 5 presents the main results extracted from the analysis, followed by Section 6.1 discussing the findings. Implications of the research are discussed in Sections 6.2 and 6.3, and Section 7 concludes the paper and discusses the limitations and future research directions.

2 | LITERATURE REVIEW

Earlier research has investigated the diverse effects of sustainability-related attributes of different product categories on consumer choices (Cho & Baskin, 2018; Wandosell et al., 2021). The presence of such attributes in the product might lead them to shape more sustainable purchasing and consumer behaviours (van Doorn & Verhoef, 2015). Consumers are increasingly depicting awareness and preferences for environmental and social sustainability and are gradually portraying greater willingness to pay for sustainable products and services (Peschel et al., 2016). Various prior scholars have supported the idea that sustainable labels help reduce information irregularity across the demand and supply-side outlooks concerning environmental issues (Annunziata et al., 2019; Shao, 2016). Labels can play an essential part in filling this information gap by communicating sustainability information regarding the focal product to the consumers. Since the adoption of sustainability labelling is a costly alternative for the manufacturers and traders because of the high cost and imposition of stringent

standards, the consumers need to be made willing to pay more to buy sustainable labelled products (van Loo et al., 2015). Consequently, the firms using sustainable labels can attract environmentally conscious consumers and improve their financial position by earning a price premium against them (Hayat et al., 2020). In addition, the companies use sustainable labels/logos for their products to gain consumers' trust and to reduce the information asymmetry associated with the sustainability of the product marketed (Jørgensen et al., 2022; Lee et al., 2020).

Even though the consumers are becoming more concerned about the sustainability issues related to food consumption, these concerns are not necessarily being rendered into increased use of sustainable labelled products due to the dearth of knowledge and understanding of such labels (Vecchio & Annunziata, 2015). Research has termed it the attitude–behaviour gap regarding sustainable food buying behaviour (Sultan et al., 2020; Zhou et al., 2013). In this regard, several scholars have adopted previously propounded theories such as theory of reasoned action (TRA) (Fishbein & Ajzen, 1975), TPB (Ajzen, 1985), norm-activation model (Stern et al., 1999) and value–belief–norm (VBN) model (Stern, 2000; Stern & Dietz, 1994). One of the most robust theories in studying environmental and sustainable consumption behaviour has been the TPB given by Ajzen (1985). Researchers are increasingly employing this model in various contexts with respect to environmental or sustainable behaviours. For instance, Chan and Lau (2002) conducted a cross-cultural examination of green purchase behaviours of Chinese and American consumers using TPB and established it to be valid in explaining eco-friendly purchase behaviours across the groups. Yadav and Pathak (2017) also employed TPB to understand the consumers' green purchase intentions by including factors, namely, perceived value and willingness to pay a premium to its basic components. The study supported the inclusion of these variables to predict green purchase behaviours of the consumers in developing nation context. Furthermore, in explaining consumer's intentions to adopt environmentally sustainable banking services, Tan-eja and Ali (2021) applied an extended TPB-based model and supported the applicability of this theory for examining sustainable behavioural intentions. Consequently, TPB has been proven to be robust for predicting and measuring sustainable consumer behaviour in several contexts such as organic consumption (Geng et al., 2017; Hosta & Zabkar, 2021), purchase intentions and loyalty for green products (Yu et al., 2017), pro-environmental intentions and behaviours (Ataei et al., 2021; Wang & Scrimgeour, 2021).

Prior research has emphasized the importance of labels, i.e., sustainable or social labels, for enhancing consumer's awareness of sustainable production/manufacturing/trading (Annunziata et al., 2019; Dhiri et al., 2021; Nikolaou & Tsalis, 2018). In one of the recent studies (Janßen & Langen, 2017), the researchers analysed the level of importance assigned by the consumers to sustainable labels while making purchase decisions. They identified three consumer segments based on how they dealt with sustainable labels while making product choices and emphasized the relevance of different labels for different segments for promoting sustainable consumer behaviour. The relevant literature has proven the relevance of consumers'

capabilities to use different cues while making purchase decisions and while comparing the product against different characteristics of other competitive products (Janßen & Langen, 2017; Verbeke & Ward, 2006). In an attempt to articulate the role of information in fostering pro-environmental consumption, Cerri et al. (2018) examined various drivers of sustainable product selection by the consumers and underlined the significance of eco-labels in shaping favourable attitudes towards green products.

With the growing demand for food and rising concerns for food security and sustainability over time, several researchers have started to focus their research on various aspects of food production, consumption and sustainability. For instance, Franco and Cicatiello (2018) establish that sustainability branding can improve consumer's attitudes towards a product, foster higher willingness to pay and achieve higher levels of customer satisfaction and loyalty towards sustainably branded products, especially food products. The researchers suggested that to attain favourable effects of sustainability branding efforts, the sustainability brand awareness and brand image, together with consumer knowledge regarding the influence of food production on the sustainability issues, need to be promoted.

There can be various motives behind consumers' inclination for using sustainable labelled products. For instance, some of the prior researchers have found that the purchases concerning different categories of labels such as fair trade labelled products are not only influenced by intrinsic motivating factors but can also be influenced by external factors, i.e., social peer pressure (Vermeir & Verbeke, 2006), and concern for reputation in the social groups and society (Grunert et al., 2014; Sadiq, Adil, & Paul, 2021). Other such motives as found in the literature are human values (Hoogland et al., 2007; Sadiq et al., 2022), perceived effectiveness (Wang et al., 2020), ethical considerations and environmental concerns (de Canio et al., 2021; Grunert et al., 2014). As consumers are increasingly attributing importance to environmental and sustainability concerns, researchers have investigated the role played by such concerns in consumer buying decisions (Mai et al., 2021). In this respect, de Canio et al. (2021) examined environmental concern for its moderating role concerning the external factors, namely, preference and trust for sustainable producers and retailers and the purchase decisions concerning sustainable packaged food items. The results indicated that the producers' and retailers' sustainability-oriented policies are quite important in defining consumers' sustainable purchase intentions.

The extensive review of rich literature led us to interesting research gaps. First, little literature exists on the role of sustainable labelling practices in shaping sustainable purchase behaviour, especially for the millennial generation. Second, the extensive review shows that there is a lack of research addressing the gap concerning consumer's attitude, intention and actual behaviour towards sustainable purchase and consumption behaviour. Thus, there is a need to better understand what aspects can be leveraged to address the attitude–intention–behaviour gap in terms of sustainable purchase behaviours found prevalent in literature (Jacobs & Hörisch, 2021; Sultan et al., 2020; Testa et al., 2020). Further, from a practice-

oriented lens, with amassed efforts on the part of marketers to communicate sustainability information regarding their products using sustainable labels in emerging markets, it is important to consider this a crucial research issue. It was seen that there is a dearth of research focusing on sustainable labels and their influence in the context of developing nations, whereas there is research evidence available concerning buying intentions for organic products and especially in developed markets (de Canio et al., 2021; Dorce et al., 2021).

3 | CONSTRUCT DEFINITION AND HYPOTHESES DEVELOPMENT

3.1 | Theory of planned behaviour

The current research adapted a previously validated theory, i.e., the TPB. TPB was originally developed by Ajzen (1985) with the notion that human actions are directed by three types of beliefs, namely, normative beliefs, behavioural beliefs and control beliefs. Behavioural beliefs can be referred to as the beliefs regarding the expected outcomes and the assessment of such consequences of adopting a behaviour under consideration. These beliefs assist in shaping favourable/unfavourable attitude towards that particular behaviour. The beliefs concerning the expectations of significant others regarding adopting a specific behaviour and the motivation to conform to such expectations comprise the normative beliefs, resulting in subjective norms. Furthermore, the control beliefs are the beliefs concerning the resources and capabilities of the individuals for performing a specific behaviour and the perceived level of obstacles in acting out a behaviour under consideration, leading to the perceived behavioural control.

TPB has been established as quite beneficial in determining environmental and sustainable behaviours in general and in the context of consumption in particular. Evidence shows that TPB has fully or partially explained sustainable behaviours (Dangelico et al., 2021; Hosta & Zabkar, 2021; Taneja & Ali, 2021; Yin et al., 2022). Several scholars have tested and validated the inclusion of additional predictors to the basic TPB constructs, more specifically in explaining the sustainable behaviours, as including such external determinants have proven efficacious in improving the predictive power of this theory (Ateş, 2021; Dorce et al., 2021). Furthermore, Ajzen (1991) opines that TPB is open to including external predictors in addition to its basic variables if appropriate evidence of capturing a significant variation in the behavioural intention and/or the behaviour has been provided (Boobalan & Nachimuthu, 2020; Shumaila et al., 2010). Based on supporting literature, this study conceptualized a research framework using an extended version of TPB by adding the following constructs in the current research. Grounding on the aforementioned discussion, following hypotheses are framed:

H1. Perceived behavioural control significantly influences intention to purchase sustainable labelled products.

H2. Subjective norms significantly influence intention to purchase sustainable labelled products.

H3. Attitude towards sustainable labelled products significantly influences intention to purchase sustainable labelled products.

3.2 | Consumer effectiveness

Consumer effectiveness can be termed as the belief about the difference in achieving a solution that can be made by the consumer's efforts (Dagher & Itani, 2014; Ellen et al., 1991; Higuera-Castillo et al., 2019). In the context of sustainable behavioural research, it can be conceptualized as an individual's internal locus of control regarding his/her actions that can make a difference in addressing sustainability-related issues or protecting the environment (Cleveland et al., 2012; Dang et al., 2020). Scholars have observed that consumers' belief as to what extent they and their actions can help solve environmental issues has a significant bearing on their green behaviours (Kang et al., 2013). There is little evidence on how consumers' perception of effectiveness helps shape sustainable consumption behaviours. For example, a few of the prior research on environmentally conscious and sustainable consumer behaviour have shown that the perception of consumer effectiveness in dealing with sustainability issues is an important antecedent to green or sustainable purchase decisions (Alzubaidi et al., 2021; Jaiswal & Kant, 2018; Wang et al., 2020; Zafar et al., 2021). Consequently, the following hypothesis is framed:

H4. Consumer effectiveness significantly influences intention to purchase sustainable labelled products.

3.3 | Consumer innovativeness

Companies all around the world are finding innovative solutions to address sustainability-related issues. And therefore, the concept of sustainability is reasonably associated with innovation, and it is crucial to study sustainable purchase behaviours in concurrence with innovativeness (Jaiswal & Kant, 2018). Consumer innovativeness can be referred to as the inclination to buy new and distinct products instead of keeping up with the previous product selections or consumption patterns (Jørgensen et al., 2022; Steenkamp et al., 1999; Testa et al., 2020). By using sustainable labels and logos, the marketers use innovative methods to communicate with the consumers regarding the sustainability aspects of the product. Therefore, examining the element of perceived innovativeness can be considered important in sustainable labelling strategies. Where some of the consumers may find it innovative to purchase such products (Persaud & Schillo, 2017; van Riel et al., 2021), there can be a misalignment in the values for some consumers, i.e., hedonic values behind going for innovative items and the environmental values leading to organic products

purchasing (Cerri et al., 2018; Testa et al., 2020). Previous researchers have established a significant association between consumer innovativeness and intention to buying organic or green products (Alzubaidi et al., 2021; Biswas & Roy, 2015; Li et al., 2021), specifically organic food items (Persaud & Schillo, 2017). The discussion above leads to the following hypothesis:

H5. Consumer innovativeness significantly influences intention to purchase sustainable labelled products.

3.4 | Environmental concern

The environmentally sustainable behaviours are greatly linked to the individual's discernment of environmental issues and the urge to contribute towards safeguarding the environment and sustainability (Agrawal et al., 2021; Kumar et al., 2017). More environmentally conscious consumers depict greater concern for the environment and therefore try to adapt their buying activities according to such concerns and become more inclined to purchasing or using products having lesser impacts on the environment (Molinillo et al., 2020; Taneja & Ali, 2021). It provides an important signal to the marketers to frame different communication strategies to leverage the purchases of sustainable products using sustainable labels and logos (Taufique et al., 2017). According to Cerri et al. (2018), environmental concern can be defined as one of the beliefs leading to favourable or unfavourable attitude towards green purchase behaviour as conceptualized in the TPB. Consumer buying decisions are highly influenced by environmental knowledge and concerns, and this association has been validated in prior research (Cerri et al., 2018; de Canio et al., 2021; Sadiq, Adil, & Paul, 2021; Testa et al., 2020). Therefore, the hypotheses are proposed as follow:

H6. Environmental concern significantly influences intention to purchase sustainable labelled products.

H7. Environmental concern significantly influences attitude towards sustainable labelled products.

3.5 | Sustainable label awareness

For using sustainable labels as a method of communicating sustainability information regarding the product to the consumers, they should be aware of such labels and need to understand the meaning of these labels (Dhir et al., 2021; Taufique et al., 2017). The understanding of the information provided on the sustainable labels is vital for shaping sustainable purchase intentions (Ateş, 2021; Lee et al., 2020). Testa et al. (2021) contended that the awareness of sustainability issues makes the consumers think about purchasing such products as more socially acceptable, and eco-labels can also play a vital role of a contextual factor in this regard (Taufique et al., 2017). Previous studies have advocated that sustainable food purchase

decisions are influenced by the consumer's knowledge and understanding of sustainable labels (Scott & Vigar-Ellis, 2014; Xuan, 2021). Furthermore, sustainable label knowledge and attitude are also significantly associated in the relevant literature which further effect various sustainable purchase behaviours (Aprile & Punzo, 2022; Polonsky et al., 2012). Based on the arguments from pertinent literature, the following hypotheses are framed:

H8. Sustainable label awareness significantly influences subjective norms with respect to purchasing the sustainable labelled products.

H9. Sustainable label awareness significantly influences attitude towards sustainable labelled products.

H10. Sustainable label awareness significantly influences intention to purchase sustainable labelled products.

intention is a critical determining factor for actual purchase behaviour in various contexts (Ajzen, 2002; Testa et al., 2021; Yin et al., 2022). Regarding sustainable consumer behaviour, several researchers have established a significant association between the intention to purchase and the actual purchase behaviours in diverse domains of consumption (Jaiswal & Singh, 2018; Sultan et al., 2020). Consequently, the hypothesis has been framed as follow:

H11. Intention to purchase sustainable labelled products significantly influences purchase behaviour with respect to sustainable labelled product.

Thus, as per the above-mentioned hypotheses, the proposed model is presented in Figure 1.

3.6 | Purchase intention and behaviour

In the relevant literature, behavioural intention can be referred to as the person's readiness to execute a particular behaviour (Ajzen, 1991). In the context of current research, behavioural intention can be conceptualized as the consumer's intention to purchase sustainable labelled dairy products. TPB opines that the normative, behavioural and control beliefs concerning a particular behaviour when combined lead to shaping behavioural intention (Ajzen, 1991) (Hosta & Zabkar, 2021; Wang & Scrimgeour, 2021). Literature suggests that the intention to behave and the actual behaviour ascending from that intention are different (Sultan et al., 2020). Moreover, behavioural

4 | METHOD

The current research adopted a mixed-method approach combining the qualitative and quantitative methods. Using a mixed-method design helps get promising evidence for gaining a better understanding and cross-checking the results of different methods for more significant insights into the phenomena under study (Bryman & Bell, 2011). The qualitative methods assist in putting the research in the right direction by providing rich insights and thereby in developing theory when an instrument is to be built with a robust combination of previously established scales and newer constructs in a novel context (Morgan, 1998). And the quantitative approach helps in rigorous testing of the scales developed and the hypotheses framed (Srnrka & Koeszegi, 2017). Such a sequential research design helps the researcher generalize, evaluate and test the outcomes emerging from the qualitative

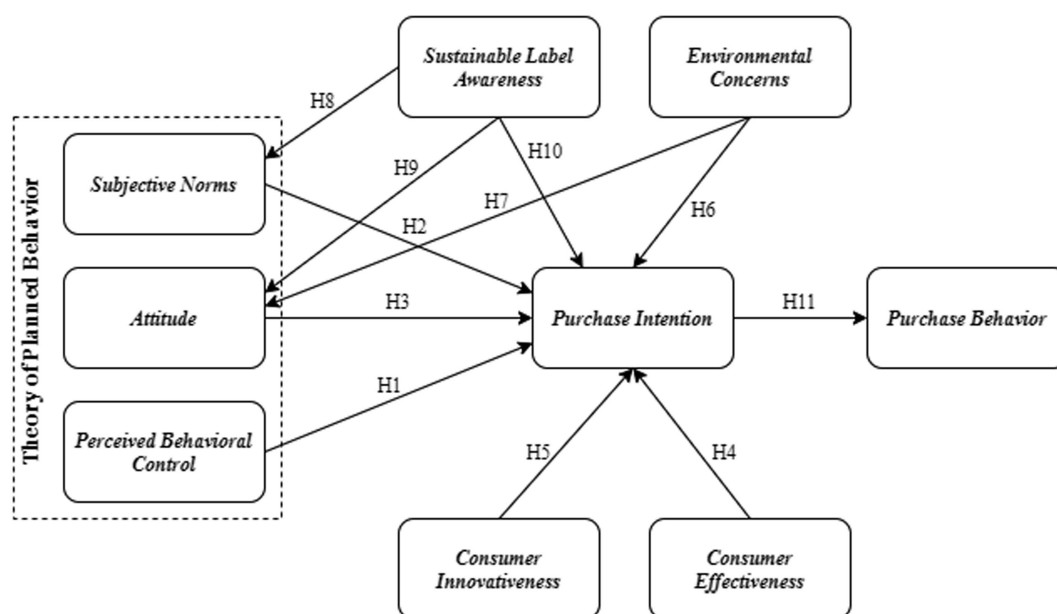


FIGURE 1 Research model

investigation in a large-sample quantitative stage (Creswell, 2011; Molina-Azorin, 2016).

The triangulation approach was adopted, i.e., literature review, followed by qualitative method and quantitative analysis (Gilbert & Churchill, 1979). First, building on the review of extant literature, a semi-structured questionnaire with 41 items was developed. The qualitative study was conducted to make judgements about the patterns and the factors concerning the current research setting. Two focus-group discussions and six in-depth interviews helped explore, conceptualize and confirm the constructs, and as a result, an initial model was designed. The model was then validated with a consumer survey conducted in China. Based on the outcomes attained from quantitative data, the conclusions were drawn. The flow of the steps undertaken for this research has been shown in Figure 2.

4.1 | Data collection

For understanding sustainable labelling and purchase behaviour, the scale was designed by extending the traditional TPB (Ajzen, 1985). However, the content and wording of the items were modified to devise them according to current research context during in-depth interviews. The details of the constructs and their respective measurement items along with the sources are shown in Appendix A.

In order to study sustainable consumer behaviour or organic consumption patterns, the millennial generation has been considered one of the most critical segments (Molinillo et al., 2020). The millennials, also called Generation Y (born from 1982 to 2000) (Brosdahl & Carpenter, 2011), are usually characterized by more tech-savvy, more educated, greater purchasing power, high community values, more sensitivity to social values and consciousness regarding environmental and

social sustainability issues when compared to the other generations (Ivanova et al., 2018). Taking into account the importance of this generation in shaping the organic and sustainable consumption landscape, this research focussed on improving the current understanding of the role of sustainable labelling in purchase behaviour concerning food products. Since the study is one of the newer endeavours to understand the sustainable purchase behaviour from the lens of sustainable labelling of dairy products, the research conducted a qualitative investigation by approaching the target participants and presenting to them a semi-structured questionnaire before the final survey.

The measurements for TPB constructs, environmental concern, consumer effectiveness, consumer innovativeness, sustainable label awareness, purchase intention and purchase behaviour were enlisted based on the extant literature and the information acquired through focus-group discussions and interviews. The inter-judge reliability was examined by five academicians in the area of marketing and sustainability (Foroudi et al., 2018). They were requested to provide their opinions on the appropriateness of the items, the wording of questions, and the content validity of the scale (Straub et al., 2004). The final questionnaire was designed after incorporating their valuable comments following rewording some of the statements and removing redundant items from the scale.

A sample of 273 consumers participated in the research over 3 months, i.e., from June 2021 to August 2021. The data were gathered from Chinese consumers in the capital cities, namely, Zhengzhou, Wuhan and Hefei, from three provinces, i.e., Henan, Hubei and Anhui, respectively. Due to the pandemic situation, the survey was administered online using a convenience sample from the selected regions as it was convenient to reach the target respondents in these cities through peer-group contacts over there. The English version of the questionnaire was initially framed using 'Questionnaire Star' and distributed for

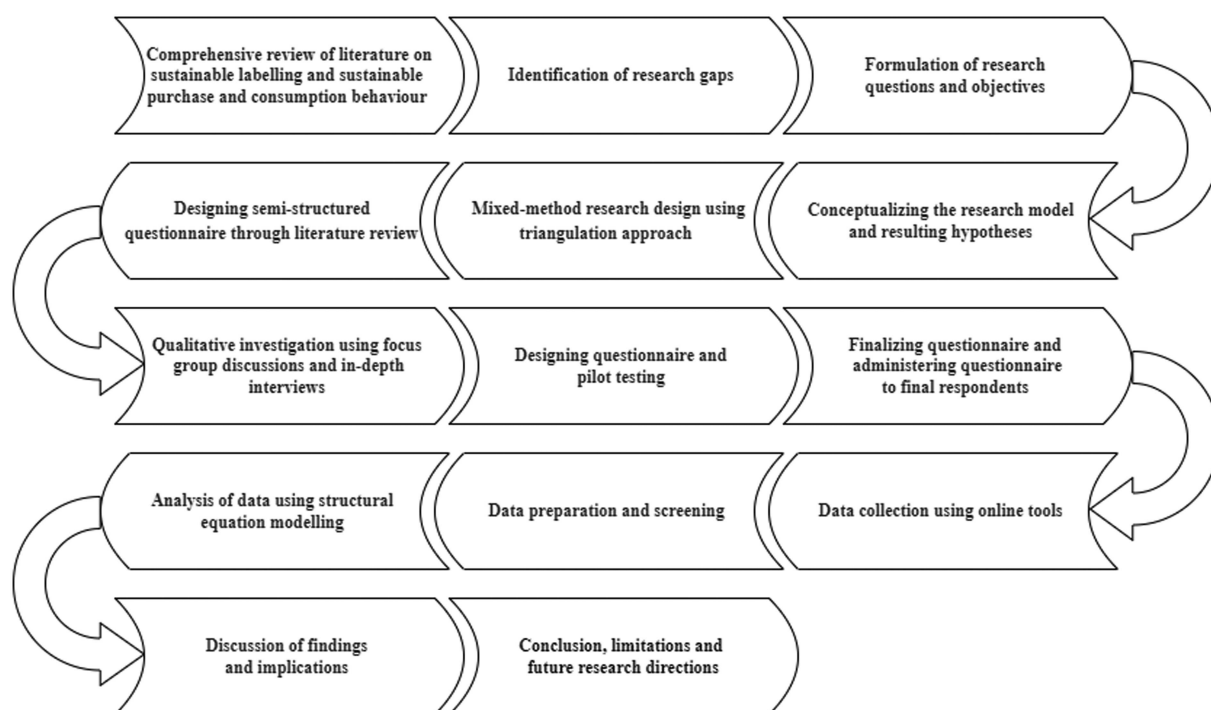


FIGURE 2 Research process flowchart

pilot testing. As a result, it appeared that due to the language barrier, the Chinese consumers were unable to understand the questionnaire content completely. Therefore, as per their convenience and for getting thorough responses from the respondents, the questionnaire was translated into the Chinese language (Brislin, 1970) with the help of Chinese fellow researchers and distributed among the target respondents (Siraj et al., 2020). In total, 350 questionnaires were circulated, and 273 usable responses were attained after excluding incomplete and incorrect responses; thereby, a response rate of 78.28% was attained. Table 1 depicts the summary of the sample profile.

5 | RESULTS

5.1 | Exploratory findings

The qualitative study was mainly conducted to discover consumers' perceptions concerning sustainable labelling and purchasing sustainable labelled dairy food items in the context of China when compared to the concepts of focal latent variables in the prior studies. The participants for the focus group discussion and interviews were nominated using a blend of convenient and purposive sampling techniques. The thorough discussions were conducted using the video-conferencing feature of Zoom and WeChat web platforms. Each discussion lasted for an average of 45 min in length. The qualitative research included three sections: an introduction to the research topic, a semi-structured questionnaire and an open discussion with the participants. The primary criteria for selection were consumption of dairy products (Do you consume dairy products?), purchase of packaged dairy products (Do you purchase packaged dairy products?) and awareness of sustainable labelling (Are you aware of sustainable labelling?). During the discussion and interviews, the respondents were asked the questions as follow:

- What do you understand by sustainable/green labelling?
- Do you consult labels while making food purchases?
- What factors do you perceive as important to adopt and use sustainable labelled food products?

Based on the information attained, the participants were found to be quite aware of the sustainable labels and their importance in

promoting sustainability. The discussions led to preparing a list of all the constructs. Therefore, to examine the information attained, the following steps were followed: understanding the information collected, directing to the analysis of the data, the grouping of the information, identification of the interrelationships between the items as well as constructs, and conceptualization of the themes together (Taylor-Powell & Renner, 2003). Each focus group was initiated with the discussion of general awareness of the respondents of sustainable labels. The participants were allowed to discuss the importance of various latent constructs structured in the initial model for shaping sustainable purchase behaviour. Based on the discussion, some of the items were reworded; i.e., "In our country, we are not doing enough to encourage waste recycling" was reworded as "The citizens in our country are not doing enough to encourage environment protection"; "I feel I can help solve natural resource problems by conserving water and energy" was reframed as "By adopting sustainable routine actions, I can help solve environmental problems." In addition, two statements, i.e., one from 'Perceived Behavioural Control' and one from 'Attitude', were removed as per the insights gained from the qualitative study and expert opinion. The initial research model was modified for the final survey based on the findings.

5.2 | Quantitative analysis

In this research, the partial least square (PLS)-based structural equation modelling (SEM) using SmartPLS 2.0 M3 (Ringle, 2005) is employed. The technique was chosen because it is a variance-based SEM technique considered appropriate in cases when not much theoretical knowledge exists in the field of research (Petter et al., 2007). In addition, this technique is known to have lesser restrictions regarding sample size and residual distributions than other SEM techniques such as covariance-based SEM (Chin, 1998). The two-step approach (Anderson & Gerbing, 1988) was adopted to perform the analysis using SEM.

5.2.1 | Measurement model

The measurement model was specified to test the reliability, i.e., construct reliability and indicator reliability and validity, i.e., convergent validity, and discriminant validity of the scales

TABLE 1 Sample profile

Variable	Categories	Frequency	Percentage
Gender	Male	123	45.1
	Female	150	54.9
Education	Higher secondary or below	11.0	4.0
	Senior secondary	39.0	14.3
	Graduate	120.0	44.0
	Post-graduate	103.0	37.7
Geographical status	Rural area	23	8.4
	Semi-urban area	73	26.7
	Urban area	177	64.8

developed for the current research. Table 2 lists the various measures of reliability and validity, namely, average variance explained (AVE) scores, factor loadings, composite reliability, and Cronbach's alpha scores. The scores for composite reliability and internal consistency (α) were greater than 0.7 as a requirement for construct reliability (Straub, 1989). The scales were found to be having sound

indicator reliability with all the loadings exceeding 0.7 (Hair et al., 2017).

The AVE scores for all the variables were recorded at values exceeding the benchmark of 0.5 (Fornell & Larcker, 1981) in order to confirm the convergent validity of the scale. Further, the discriminant validity was ensured by comparative analysis of the square root of the

TABLE 2 Loadings, AVE and reliability scores

Constructs	Items	Loadings	AVE	Composite reliability	Cronbach's alpha	Communality
Attitude	AT1	0.795	0.617	0.906	0.876	0.617
	AT2	0.787				
	AT3	0.772				
	AT4	0.792				
	AT5	0.781				
	AT6	0.786				
Consumer effectiveness	CE1	0.889	0.696	0.901	0.854	0.696
	CE2	0.788				
	CE3	0.808				
	CE4	0.849				
Consumer innovativeness	CI1	0.838	0.620	0.891	0.846	0.620
	CI2	0.789				
	CI3	0.751				
	CI4	0.785				
	CI5	0.771				
Environmental concerns	EC1	0.750	0.611	0.887	0.840	0.611
	EC2	0.782				
	EC3	0.737				
	EC4	0.773				
	EC5	0.859				
Purchase behaviour	PB1	0.841	0.640	0.8764	0.8114	0.640
	PB2	0.805				
	PB3	0.826				
	PB4	0.723				
Perceived Behavioural control	PBC1	0.850	0.668	0.857	0.747	0.668
	PBC2	0.712				
	PBC3	0.880				
Purchase intention	PI1	0.826	0.661	0.886	0.829	0.661
	PI2	0.819				
	PI3	0.827				
	PI4	0.779				
Sustainable label awareness	SLA1	0.871	0.602	0.857	0.777	0.602
	SLA2	0.796				
	SLA3	0.709				
	SLA4	0.718				
Subjective norms	SN1	0.731	0.589	0.851	0.770	0.589
	SN2	0.806				
	SN3	0.732				
	SN4	0.798				

TABLE 3 Inter-construct correlations

	AT	CE	CI	EC	PB	PBC	PI	SLA	SN
AT	0.785								
CE	0.641	0.834							
CI	0.622	0.718	0.787						
EC	0.667	0.798	0.764	0.781					
PB	0.633	0.570	0.542	0.565	0.800				
PBC	0.667	0.523	0.542	0.545	0.575	0.817			
PI	0.766	0.680	0.623	0.717	0.791	0.636	0.813		
SLA	0.661	0.576	0.583	0.619	0.614	0.501	0.651	0.776	
SN	0.550	0.395	0.433	0.376	0.584	0.594	0.547	0.453	0.768

Note: Diagonal elements are the square root of the AVE scores for respective constructs and the off-diagonals depict the correlation between the respective two constructs.

Abbreviations: AT, attitude; CE, consumer effectiveness; CI, consumer innovativeness; EC, environmental concerns; PB, purchase behaviour; PBC, perceived behavioural control; PI, purchase intention; SLA, sustainable label awareness; SN, subjective norms.

AVE scores for all constructs, i.e., the diagonal scores in the inter-construct correlation matrix with the off-diagonal ones, where the former were found to be greater than the latter ones to confirm the validity based on the Fornell and Larcker (1981) criteria (see Table 3). In addition, each construct item yields higher loading on its own construct in comparison to the cross-loadings on other constructs, as one of the two requirements for discriminant validity (Fornell & Larcker, 1981). Further, the data were diagnosed for potential common method bias using Harman's single factor test (Harman, 1976). With the first factor explaining 41.6% of the variance in the model using the exploratory factor analysis in SPSS 21.0, which is less than the cut-off of 50%, the data were found to be free of common method bias (Podsakoff et al., 2003).

Based on the above discussion, the scales were reliable and valid. Therefore, the constructs can be used to test the structural model specifying the interrelationships among the latent constructs.

5.2.2 | Structural model

The hypotheses testing was undertaken using path analysis; and the bootstrap resampling method with 5,000 resamples (Hair et al., 2017) was employed to assess the path significance levels. The theoretical model explained 70.3% variance in purchase intention and 62.5% in purchase behaviour. In addition, 54.4% variance in attitude was explained by the current model.

The path analysis supported all the hypotheses framed in this study (see Table 4 and Figure 3). More particularly, environmental concern and sustainable label awareness were statistically significant in explaining the attitude towards sustainable labelled products, both at $p < 0.01$, thereby accepting H7 and H9. The effects of TPB constructs namely perceived behavioural control, subjective norms, and attitude, in addition to the external variables, i.e. consumer effectiveness, environmental concerns, and sustainable label awareness were statistically significant in predicting purchase intention, supporting H1, H2, H3, H4, H6 and H10 respectively. Conversely, consumer

innovativeness was found to have a negative and significant influence on purchase intention, which supports H5. Furthermore, purchase intention was found to exert a statistically and highly significant effect on purchase behaviour; thereby, H11 was supported in the current research. Moreover, the sustainable label awareness was also found as a statistically significant antecedent to subjective norms proving H8 to be true with $p < 0.01$.

6 | DISCUSSION AND IMPLICATIONS

6.1 | Discussion

This research examined the role of sustainable labelling in shaping consumer purchase behaviour using a structural equation model. Specifically, the research studied the relational linkages among the selected behavioural dimensions comprising an extended version of TPB, purchase intention and behaviour and found some important implications for promoting sustainable purchasing among the consumers. The results of the statistical investigation exhibit the significance of TPB constructs in shaping sustainable purchase intention. In other words, subjective norms, perceived behavioural control and attitude were established as significant determining factors of purchase intention. The notion is that the more control a consumer perceives in purchasing a sustainable labelled product in terms of time, money and resources, the higher will be his/her purchase intention which is in line with the findings of (Paul et al., 2016; Yadav & Pathak, 2017). The study underlines the role of consumer's perception of social group influence, in addition to having a favourable attitude in building sustainable purchase intentions. These outcomes align with the prior studies on sustainable intentions (i.e., Taneja & Ali, 2021; Verma & Chandra, 2018). A stronger influence of purchase intention on purchase behaviour with respect to sustainable labelled products was spotted with a highly significant statistical value. Previous researchers have also established this association in the relevant literature (Jaiswal & Singh, 2018; Sultan et al., 2020).

TABLE 4 Hypothesis testing results

Label	Hypothesis	Path coefficient	Standard deviation (STDEV)	Standard error (STERR)	T statistics (O/STERR)	Result
H1	PBC → PI	0.10**	0.02	0.02	6.35	Supported
H2	SN → PI	0.13**	0.01	0.01	8.84	Supported
H3	AT → PI	0.32**	0.02	0.02	19.08	Supported
H4	CE → PI	0.13**	0.01	0.01	9.76	Supported
H5	CI → PI	-0.05**	0.01	0.01	3.48	Supported
H6	EC → PI	0.25**	0.01	0.01	18.46	Supported
H7	EC → AT	0.42**	0.02	0.02	27.37	Supported
H8	SLA → SN	0.45**	0.02	0.02	28.88	Supported
H9	SLA → AT	0.40**	0.02	0.02	23.45	Supported
H10	SLA → PI	0.12**	0.01	0.01	8.76	Supported
H11	PI → PB	0.79**	0.01	0.01	100.89	Supported

Abbreviations: AT, attitude; CE, consumer effectiveness; CI, consumer innovativeness; EC, environmental concerns; PB, purchase behaviour; PBC, perceived behavioural control; PI, purchase intention; SLA, sustainable label awareness; SN, subjective norms.

** $p < 0.01$. * $p < 0.05$.

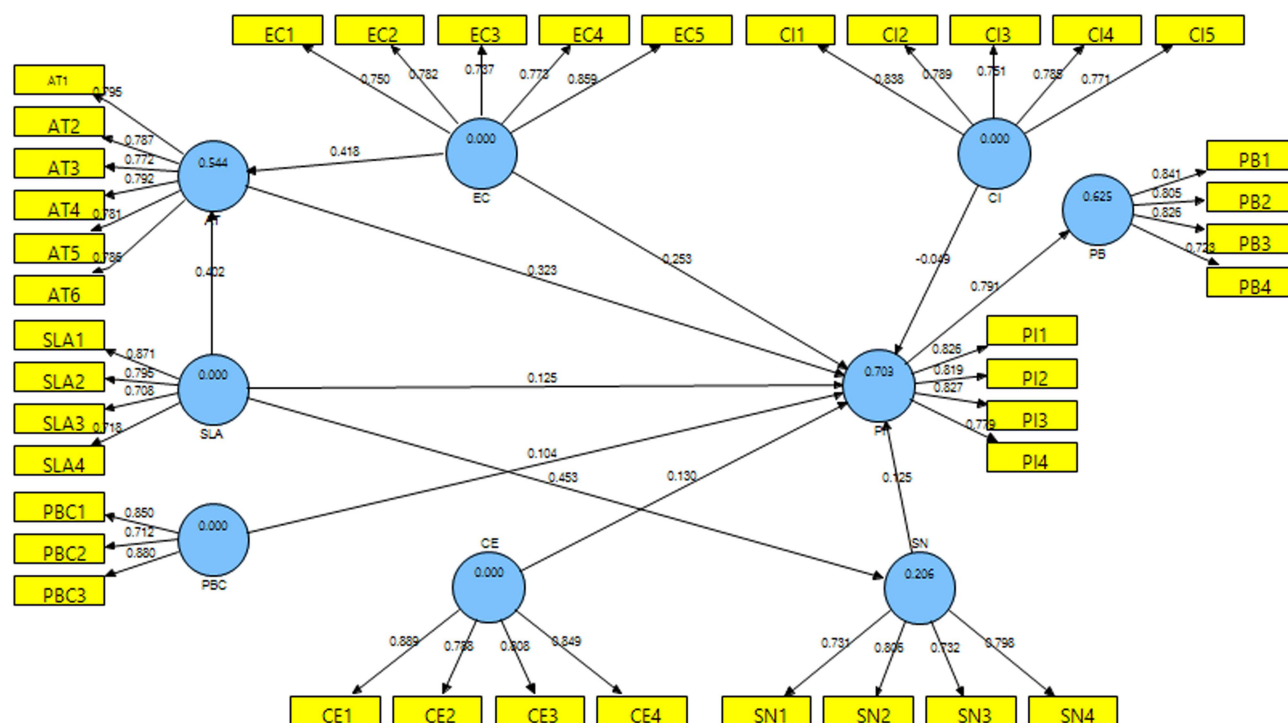


FIGURE 3 Structural model

The effects of other contextual factors are also analysed. The findings indicated a direct effect of environmental concerns on purchase intention, which confers that the consumer's concerns for environmental protection and sustainability get translated into purchase intentions, sustained by the findings of Cerri et al. (2018) and Testa et al. (2020). The perception of environmental concerns also exhibits significant influence on the attitude, in congruence with Cerri et al. (2018) and Alzubaidi et al. (2021), which is a significant predecessor to the purchase intention. Therefore, it can be established that the consumer's concern for environmental sustainability help shapes

favourable attitude and intention towards sustainable labelled products. The perception of effectiveness in helping and supporting maintain environmental sustainability was found to influence purchase intention. To put it differently, a consumer is more inclined to purchase sustainable labelled products if he/she perceives himself/herself to be effective in helping solve environmental issues, which is consistent with earlier studies in the field (Jaiswal & Kant, 2018; Vermeir & Verbeke, 2006).

In the opposite direction, consumer innovativeness was found to negatively influence purchase intention, which states that consumers

with higher levels of innovativeness are less inclined to purchase a sustainable labelled product. This can be owing to the fact that the consumers who assign greater importance to newness and hedonic or functional values may not be much influenced by environmental values (Testa et al., 2020). The analysis results indicated that consumer's awareness of sustainable labels exerts a significant effect on attitude and purchase intention concerning sustainable labelled products. These outcomes are in line with Ateş (2021), Lee et al. (2020) and Polonsky et al. (2012). In addition, the awareness of sustainable label awareness was found to be a significant determinant of subjective norms, which depicts that the consumers with greater awareness of sustainable products will perceive higher social pressure for purchasing these products, as argued by Taufique et al. (2017) and Testa et al. (2021).

6.2 | Theoretical implications

The findings of this study foster critical theoretical insights on shaping consumer behaviour concerning sustainable labelled products. From the statistical investigation of various factors extracted from the extant literature, the research confirms the applicability and robustness of the TPB in understanding sustainable consumer behaviour and patterns. This study supports previous evidence of the usability of TPB in environmental behaviour and marketing literature (Hosta & Zabkar, 2021; Taneja & Ali, 2021; Taufique & Vaithianathan, 2018). Therefore, the current research adds to the theoretical advancement concerning TPB by emphasizing its usability and validity in assessing sustainable purchase behaviour as the consequence of sustainable labelling strategies. In addition, the role of other cognitive and environmental factors, namely, environmental concerns, consumer effectiveness, consumer innovativeness and sustainable label awareness, was analysed and confirmed. The findings stress the importance of including contextual and environment-specific variables in addition to TPB to assess sustainable behaviours. Further, this study fills the attitude–intention–behaviour gap existing in the relevant literature by conceptualizing purchase behaviour as the endogenous construct, instead of purchase intention as mostly examined in prior studies on sustainable purchase and consumption behaviour (Lee et al., 2020; Li et al., 2021).

The current research joined the prior researchers emphasizing the necessity of incorporating novel understandings in the field of sustainable development through promoting sustainable consumption (Dhir et al., 2021; Lim, 2022). Previous studies have established the importance of environmental concerns in promoting sustainable/organic consumption (de Canio et al., 2021; Testa et al., 2021); we extend the literature by examining it in the context of sustainable labelled food products. The other elements that emerged as the key drivers of sustainable purchase behaviour are consumer effectiveness and the awareness of sustainable labels. The study provides empirical support to the earlier researchers highlighting the role of consumer perception of self-effectiveness (Jaiswal & Singh, 2018) and awareness of sustainable labels (Grunert et al., 2014; van Loo et al., 2015). Further, our

research makes significant contribution to the existing body of literature by directing to address the attitude–intention–behaviour gap as evident in the previous research (Franco & Cicatiello, 2018; Kumar et al., 2017) by leveraging the identified factors. By presenting a comprehensive model, the study also extends the opportunity to academic researchers for its further testing and validation in different contexts.

6.3 | Practical implications

Our findings also deliberate important insights for marketing practice and policymaking. Following the calls for delivering environmentally and socially sustainable products and services, the businesses are increasingly integrating sustainable practices into their offerings; and it is vital to balance the demand and supply-side perspectives for the successful implementation of such practices (Hunka et al., 2021; Luthra et al., 2017; Shao, 2016). Organizations/practitioners need to gain insights into consumer perspectives of sustainable purchase behaviour. For this purpose, they attempt to communicate the sustainability information with the consumers using labels and logos. In order to evaluate the efficacy and effectiveness of these labelling strategies, the marketers seek guidance on what factors concerning sustainable labels influence their purchase decisions that can be targeted by the marketers to lead the change towards sustainable consumer behaviour. Making the consumers, particularly the youth, aware of these labels is quite important for attaining the effectiveness of labelling strategies since a lower level of understanding of sustainable labels has also been discovered in prior evidence (Annunziata et al., 2019). Therefore, the marketers must address the consistent gap between the consciousness and actions concerning sustainable consumption, as also depicted in international and national research reports (UN Environment, 2019; Yan Li, 2017). The policymakers also need to initiate campaigns for consumer awareness and education regarding sustainable/eco-labels and their benefits for sustainability in this regard.

Given the importance of the factors highlighted in the current research, marketers can design appropriate strategies by taking the leverage from these determinants. They can adopt effective communication strategies to convey the sustainability information through labels depicting how their product helps save the environment as environmental concerns were found to be an important lever for attitude and purchase behaviour for sustainable labelled dairy products or food products in general. For instance, putting labels on food packaging that tell that the material used is recyclable and animal-friendly or includes an element of sustainability (socio-economic and environmental) can be targeted to the environmentally-conscious consumer segment (Janßen & Langen, 2017). As the perception of effectiveness leads to purchase intention (Zafar et al., 2021), the consumers should adopt sustainable consumption in their lifestyles in order to promote environmental sustainability. Moreover, promoting sustainable purchase behaviour as not only a convenient act but also a socially acceptable behaviour is required, due to the significance of perceived behavioural control and subjective norms in explaining such behaviour

as per the outcomes of our research. Noting the findings of this research, the managers and policymakers can encourage environmentally sustainable purchase behaviours using effective labelling strategies keeping in mind the essential factors underlined here.

7 | CONCLUSION, LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

With the escalating environmental challenges, the general focus of global community is extensively being shifted towards promoting sustainable production and consumption practices. It is worth mentioning here that private consumption contributes significantly to rising carbon emissions, leading to environmental degradation and increasing risks for social sustainability. To achieve the goals of sustainable development, there is a dire need to improve the consumption practices while taking into account the adverse effects of unsustainable consumption for environmental sustainability.

Considering the calls to examine sustainable and pro-environmental consumption, this research attempted to investigate how sustainable labels can help promote sustainable purchase behaviours of consumers from an emerging economy context. Moreover, noting the paucity in the research concerning attitude–intention–behaviour gap with respect to purchase behaviour for sustainable labelled products, the paper proposed and tested a behavioural model based on TPB and the constructs identified from the literature, namely, environmental concerns, sustainable label awareness, consumer effectiveness and innovativeness. Through this investigation, we highlighted the variables central to facilitating the consumption of sustainable labelled food products. The findings of our research can be taken into consideration by marketers and policymakers for framing strategies concerning sustainable labels to be used for the focal products. This research expects to add to the understanding of sustainable labelling strategies from the practitioners' as well as researchers' points of view.

Though our research offered detailed insights into the topic, certain limitations are acknowledged and deliberated to provide future directions for research. First, the survey was administered online due to the pandemic situation, which could have hindered the sincere response on the part of respondents. The geographical boundaries of the research were limited to the capital cities of the selected provinces. Further research can be undertaken by expanding the scope and including other provinces to improve the generalizability of the results. In addition, cross-cultural examination of the selected factors can be helpful for global marketers to gain deeper insights into the phenomena. We suggest investigating the role of additional important contextual aspects such as trust, personal norms and self-identity, which can be relevant to sustainable purchase behaviour. Furthermore, an experimental analysis of the impact of sustainable labels on purchase behaviour can prove to be fruitful to capture how consumers behave in an actual situation.

ORCID

Ahsan Siraj  <https://orcid.org/0000-0002-9232-4752>

Shilpa Taneja  <https://orcid.org/0000-0003-3878-3971>

Sunil Luthra  <https://orcid.org/0000-0001-7571-1331>

Anil Kumar  <https://orcid.org/0000-0002-1691-0098>

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APPENDIX A: SCALE CONSTRUCTS

Constructs	Measurement items	Source
Attitude	I think that purchasing sustainable labelled dairy products is interesting. I think that purchasing sustainable labelled dairy products is a good idea for the environment. I think that purchasing sustainable labelled dairy products is important for the environment. I think that purchasing sustainable labelled dairy products is beneficial for the environment. I think that purchasing sustainable labelled dairy products is wise. I think that purchasing sustainable labelled dairy products is favourable for the environment.	Ajzen (1985); Ateş (2021)
Subjective norms	My family thinks I should purchase sustainable labelled dairy products rather than those without a sustainable label. Most people I value would purchase sustainable labelled dairy products rather than those without a sustainable label. People I value (such as my colleagues) think I should purchase sustainable labelled dairy products. My close friends, whose opinions are important to me, think I should purchase sustainable labelled dairy products.	Ajzen (1985); Arvola et al. (2008); Ateş (2021); Chan and Lau (2002)
Perceived Behavioural control	If I wanted to, I could purchase sustainable labelled dairy products instead of those without eco-label. I think it is easy for me to purchase sustainable labelled dairy products. It is mostly up to me whether or not to purchase sustainable labelled dairy products.	Ajzen (1985); Ateş (2021); Arvola et al. (2008); Chen and Chang (2012); Yazdanpanah and Forouzani (2015)
Environmental concern	I am concerned about the consumption of natural resources and the consequences for future generations Waste of resources is a serious problem The citizens in our country are not doing enough to encourage environmental protection Protecting the natural environment is one of the most important issues the world is facing Increasing the useful life of the products we use should be a priority to preserve the balance of nature	Jaiswal and Kant (2018); Testa et al. (2020); Trivedi et al. (2018)

(Continues)

Constructs	Measurement items	Source
Consumer innovativeness	If I discover a new product that is more functional for my needs, I am very likely to buy it If a new product makes my work easier, then it is a “must” for me If a new time-saving product is launched, I will buy it right away Using innovative products to solve the complications of everyday life gives me satisfaction I buy innovative products because they stimulate my desire to learn and be at the forefront	Testa et al. (2020); Vandecasteele and Geuens (2010)
Consumer effectiveness	Each person's behaviour can have a positive effect on society by making efforts in support of promoting the environment. I feel capable of helping solve environmental problems. I can protect the environment by buying products that are friendly to the environment. By adopting sustainable routine actions, I can help solve environmental problems	Kim and Chung (2011); Kim and Choi (2005); Jaiswal and Singh (2018)
Sustainable label awareness	I know the meaning of the term sustainable dairy products. I know the meaning of the term sustainable labelled dairy product. I know the meaning of the term organic dairy products. I usually pay attention to information about sustainable labelled dairy products.	Taufique et al. (2017)
Purchase intention	I would consider buying sustainable labelled dairy products because they are less polluting. I would consider switching to other brands for ecological reasons. I intend to switch to a sustainable version of a product. I would patronize and recommend the use of sustainable labelled dairy products to others.	Chan and Lau (2000); Jaiswal and Singh (2018); Taneja and Ali (2021)
Purchase behaviour	When I want to buy a product, I look at the ingredients label to see if it contains environmentally damaging things. I prefer sustainable labelled dairy products over other regular products when their product qualities are similar. I choose to buy environmentally friendly dairy products. I buy sustainable labelled dairy products even if they are more expensive than the regular ones.	Jaiswal and Singh (2018)