Why do retail consumers buy green apparel? A knowledge-attitude-behaviour-context perspective

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ARTICLE INFO

ABSTRACT

Consumers' increased knowledge and awareness of environmental issues have not translated into a pervasive rise in purchasing green apparel, resulting in a phenomenon known as the '*attitude-behaviour gap*'. The current study seeks to explicate this gap by examining the drivers of green apparel buying behaviour. Towards this end, the study examines the association of environmental knowledge, green trust, and environmental concern with environmental attitude and green apparel buying behaviour. It further investigates the association of labelling desire and labelling satisfaction with this type of buying behaviour as well. In addition, the study uses the theoretical lens of the knowledge-attitude-behaviour model and attitude-behaviour-context theory to anchor its hypotheses. Cross-sectional data from 387 Japanese consumers analysed to test the conceptual model revealed that green trust, environmental attitude, and labelling satisfaction are positively associated with green apparel buying behaviour. Furthermore, green trust, environmental concern, and environmental attitude partially mediate the proposed associations, while age and gender moderate the association between environmental knowledge and environmental concern. The study's empirical insights thus lay the foundation for future research in this area and provide strategically relevant inferences for green apparel marketers and retailers.

1. Introduction

The apparel industry is one of the world's largest contributors to various social and environmental problems (McNeill and Venter, 2019). It produces 10% of the world's carbon emissions, making it the second most pollution-releasing sector globally (Muthukumarana et al., 2018). One possible way to counteract such negative fallout is to move away from the so-called "fast fashion" paradigm that has traditionally dominated the industry and towards green apparel instead (Khare and Sadachar, 2017). This type of apparel significantly reduces its environmental impact through a sustainable manufacturing process. Accordingly, firms producing green apparel have been trying to promote awareness about their environmentally-friendly procedures (McNeill and Moore, 2015). As a result, demand for green apparel has increased, highlighted by the shift in environmental knowledge, consumer beliefs,

and attitude (Khare and Sadachar, 2017), as well as the growing revenue generated by this sector.

Encouraging as these findings are, the fact remains that the green apparel industry is still in its nascent stage, constituting less than 10% of the total apparel market (Jacobs et al., 2018). The academic community has also acknowledged the paradoxical phenomenon of the rising popularity of green apparel on the one hand and the lagging actual purchase behaviour on the other. This resultant attitude-behaviour gap (Weiderhold and Martinex, 2018) has prompted researchers to focus on better understanding the drivers of consumer buying behaviour (McNeill and Venter, 2019) and to call for further studies that address this issue (Jacobs et al., 2018).

The current study responds to this call by examining the drivers of green apparel buying behaviour. We argue that understanding why people buy green apparel can not only provide rich insights into the

sustainability-oriented and environmentally friendly consumption behaviour of retail consumers but also potentially illuminate the causes of disparity between positive attitude and buying behaviour towards green apparel. We further note a gap in the literature regarding the variety of variables examined to explain buying behaviour in this area. For example, although scholars have investigated labelling satisfaction and labelling desire to explain green buying behaviour in general (Aitken et al., 2020), they have yet to examine these constructs in the context of green apparel. We thus address this gap by including labelling satisfaction and labelling desire as drivers of green apparel buying behaviour in our conceptual model.

In addition, there is also a gap in terms of the narrow geographical focus of past studies. The existing findings are primarily related to western societies, such as the United States and the United Kingdom (Albloushy and Hiller Connell, 2019). In comparison to this, studies examining green apparel behaviour in other contexts, such as Asian countries, are few and far between. The current study seeks to bridge this gap by investigating the green apparel buying behaviour of Japanese consumers. We chose Japan as the geography of interest as it is recognised worldwide for adopting green technologies and contributing to environmental safety (L. Zhang et al., 2018). In fact, Japanese consumers are considered environmentally conscious, with good knowledge of related issues (Thyroff and Kilbourne, 2017). In the specific context of green apparel, some sustainability initiatives have been made in the Japanese apparel industry to protect the environment (Ministry of Economy, Trade and industry (METI), 2016). Examples include the "Green Down" project, established in 2015, which uses recycled down feathers to create new items, such as down coats or jackets. Another is the launch of the organic cotton brand "Orgabits" in 2005, which was established by Toyoshima, a wholesaler specialising in fibre. The brand aims to protect the environment by expanding organic farmland in collaboration with about 130 apparel brands in Japan. Despite these measures, the actual purchase behaviour of pro-environmental products is still low in Japan (33.0%), with the purchase of ethical apparel products relatively lower compared with foods and living necessities (Consumer Affairs Agency, 2017). Japanese consumers' pro-environmental and ethical consumption behaviour thus possesses a complex nature, indicating that this context can yield several exciting insights.

As such, we propose two research questions (RQs) to address the gaps discussed above: RQ1. How does environmental awareness drive the attitude and green apparel buying behaviour of retail consumers? RQ2. How is labelling associated with the green apparel buying behaviour of retail consumers? To answer these questions, we propose a conceptual model based on the theoretical lens of the knowledge-attitude-behaviour model (Kallgren and Woods, 1986) and attitude-behaviour-context theory (Guagnano et al., 1995). Both theories discuss the attitude-behaviour gap and, therefore, are suitable for the current study. Since attitude by itself cannot fully drive pro-environmental behaviour, we use a dual theoretical lens to examine green apparel buying behaviour, in line with previous scholars' recommendations (e.g., McNeill and Moore, 2015; Wiederhold and Martinez, 2018). Our model examines the association between various aspects of environmental awareness, such as environmental knowledge, environmental concern, green trust, and environmental attitude. In addition, we also explore the associations between green apparel buying behaviour and environmental attitude, labelling satisfaction, and labelling desire. Finally, the mediating role of green trust, environmental concern, and environmental attitude, and the moderating influence of age and gender are also examined. We ultimately test our model using data collected from 387 Japanese green apparel consumers.

Our study is the first to use knowledge-attitude-behaviour and attitude-behaviour-context theory to examine the attitude-behaviour gap in the context of green apparel. It is also the first to examine the association of labelling satisfaction and labelling desire with green apparel buying behaviour. As such, we anticipate that our findings will assist marketers, policymakers, and researchers in better understanding retail consumers' green apparel buying behaviour.

2. Theoretical framework

2.1. Knowledge-attitude-behaviour model

Kallgren and Woods (1986) proposed the knowledge-attitude-behaviour (KAB) model, which posits that consumers first look for a set of knowledge, resulting in either a positive or negative attitude towards the target behaviour. The KAB model is suitable for the current study for two reasons. First, scholars have utilised KAB in varied contexts, including the pro-environmental behaviour literature. For instance, Polonsky et al. (2012) and Taufique et al. (2017) examined the relationship between environmental knowledge (eco-label and general), attitude, and pro-environmental consumer behaviour. Second, it supports the examination of the knowledge-behaviour gap, which has been acknowledged by the extant literature as under-explored in the green apparel context (Khare and Sadachar, 2017).

2.2. Attitude-behaviour-context theory

The attitude-behaviour-context (ABC) theory (Guagnano et al., 1995) suggests that consumers' behaviour can be seen as an inter-related outcome of attitude and contextual factors. It may also imply that consumers exhibit behaviour to gain certain expected benefits (Feldmann and Hamm, 2015) and that such behaviour only manifests when consumers develop a positive attitude towards it, under the strong influence of contextual factors (H. Zhang et al., 2018). Such factors make a given situation unique by increasing the predictability of an individual's behavioural action (Yadav et al., 2019). ABC theory is thus suitable for the current study because: (a) it has been used in the past to offer insights on how environmental attitudes translate into target behaviour (e.g., Goh and Balaji, 2016); (b) it helps researchers focus on specifically examining the attitude-behaviour gap, which is considered one of the key consumer research problems (Schäufele and Hamm, 2017); and (c) it focuses on contextual factors, which are strongly associated with consumers' actions and buying decisions (e.g., Grimmer et al., 2016; Ertz et al., 2016).

2.3. Extending KAB and ABC to the green apparel buying context

Since KAB postulates that consumers need a set of knowledge to develop an attitude towards the target behaviour, we have used environmental knowledge to represent this knowledge component. Drawing upon prior literature, we interpret environmental knowledge as the extent of consumers' awareness of environmental issues, which causes them to act (Yadav and Pathak, 2016; Finisterra do Paco and Raposo, 2010). Given that environmental knowledge influences consumers' decision-making at each stage (Taufique et al., 2017), it is thus an essential variable in our research.

Next, we have used environmental attitude to measure the attitude component of the two theories, which we interpret as a cognitive belief about saving the environment or reducing the harm done to it (Trivedi et al., 2018). The choice of this construct is rooted in extant studies that have considered environmental attitude a key factor in predicting and explaining green apparel buying behaviour (McNeill and Moore, 2015).

Finally, since the attitude-behaviour gap is dependent on contextual factors, we have used environmental concern and green trust in this capacity. Consistent with prior literature, we interpret environmental concern as consumers' degree of awareness of environmental problems and the altruistic motivation of undertaking activities to save the environment without thinking for themselves (Yadav, 2016). Similarly, green trust refers to the consumers' willingness to use green products based on confidence in their potential to protect the environment (Wang et al., 2018). The extant literature on green buying behaviour has

predominantly discussed environmental concern and green trust, making these contextual factors critical to our study. For instance, scholars have suggested that environmental concern motivates people to opt for green products over traditional ones (Yadav and Pathak, 2016). In the same vein, previous studies have established consumer trust as green trust in the environmental behaviour literature (Chen et al., 2019; Wang et al., 2018; Yadav et al., 2019) and considered it a crucial variable where uncertainty is high, as in the case of organic food (Ricci et al., 2018), green hotels (Yadav et al., 2019), and other green products (Chen and Chang, 2013).

2.4. Mapping labelling desire and satisfaction to the green apparel buying context

An extensive review of the literature suggests that the green marketing literature has focused predominantly on consumer desire and satisfaction (Aitken et al., 2020) and largely ignored labelling desire and satisfaction. Several scholars have argued the importance of labelling in varied contexts. For instance, Taufique et al. (2016) argued that labelling on consumer goods provides information about product characteristics, thereby creating awareness among consumers. Accordingly, many countries have established labelling guidelines for manufacturers, particularly throughout Europe, where manufacturers must follow specific labelling directives to increase the level of product awareness among consumers (Rousseaux et al., 2017). As consumers become more aware of the products' characteristics, they are also more likely to consume the labelled product and experience post-consumption satisfaction as a result (Aitken et al., 2020). Scholars have also argued that labels on a green product related to information about its ability to keep the environment safe subsequently enhance its consumption (Taufique et al., 2017). In consonance, we contend that labelling desire and satisfaction are important in green marketing, in general, and green apparel, in particular, because recent times have witnessed an increase in the demand for eco-labels, which explain products' efficiency in saving the environment. Due to this, in addition to the variables discussed above, we also examine the association of labelling desire and satisfaction with green apparel buying behaviour. By drawing upon the existing descriptions of consumer desire and satisfaction (e.g., Arora et al., 2020; Wang et al., 2018), we interpret labelling desire as a passionate emotion towards the labelling of products that supports consumption in a contemporary way. Similarly, we interpret labelling satisfaction as the feeling of delight that comes from consuming the labelled products that consumers were seeking. We expect that examining these variables in the context of green apparel buying behaviour will provide useful insights for designing green apparel product labels that may benefit both the retailers and manufacturers of green products.

Our investigation is quite pertinent in the specific context of Japan as well, since labels for green apparel do not seem to be functioning as should be expected in the Japanese market. One of the most famous labels for green apparel in Japan is called the "Eco-Mark", which can only be given to products that have been officially approved by the Japanese government through a strict environmental standard (Ministry of Environment, 2018). However, research conducted by the Consumer Affairs Agency (CAA) in 2017 revealed that people refrained from purchasing green apparel because they did not know how to identify them.

3. Framework and hypotheses development

Based on the theoretical lens of KAB and ABC, our research model proposes environmental knowledge, environmental concern, green trust, environmental attitude, labelling desire, and labelling satisfaction as antecedents of green apparel buying behaviour. We also propose and examine the mediating effect of environmental attitude, environmental concern, and green trust, and the moderating effect of age and gender.

3.1. Environmental attitude and green apparel buying behaviour

Many studies in the pro-environmental literature have contended that environmental attitude is one of the strongest predictors of environmental behaviour (Polonsky et al., 2012; Khare, 2015; Taufique et al., 2017). In the specific context of green apparel, environmental attitude has also been found to have a significant positive association with intentions to purchase green apparel (Nguyen et al., 2019). However, a growing body of literature has also flagged a rather worrying phenomenon, wherein a gap between attitude and behaviour has been observed (Jacobs et al., 2018; Wiederhold and Martinez, 2018), implying that positive attitude towards green apparel may not always translate to their purchase. Thus, there exists some confusion in the literature, where on the one hand, scholars have noted that improvement in consumers' environmental attitude has increased the consumption of green apparel, while on the other hand, there is a documented attitude-behaviour gap (Wiederhold and Martinez, 2018). This dichotomous observation has motivated us to better explicate this phenomenon by examining the association between environmental attitude and the green apparel buying behaviour of Japanese consumers. We anticipate a positive association between the two, based on the fact that Japanese retail consumers are known to be environmentally conscious (Thyroff and Kilbourne, 2017). Thus, we can expect these consumers to purchase green apparel to reduce the harm done to the environment, thereby acting in a pro-environmental manner. Therefore, we hypothesise:

H1. Environmental attitude has a positive association with green apparel buying behaviour

3.2. Environmental concern, environmental attitude, and green apparel buying behaviour

Environmental concern is a significant variable examined in the pro-environmental literature (Landry et al., 2018). Several studies have suggested that environmental concern significantly and positively influences environmental attitude (Trivedi et al., 2018; Yadav, 2016; Yadav and Pathak, 2016). Similarly, scholars have argued that consumers high in environmental concerns tend to buy more green products (Yadav and Pathak, 2016). However, Landry et al. (2018) argued that environmental concern does not always translate into actual environmental behaviour, while Sadiq (2019) confirmed the concern-behaviour gap in green product consumption behaviour. Based on the existing evidence, we propose to examine the association of environmental concern with environmental attitude and green apparel buying behaviour. We believe that such an examination will help us determine whether the concern-behaviour gap exists in Japanese retail consumers. Furthermore, despite the skewed findings in the existing literature, which has evidence both for and against such associations, we expect a positive relationship of environmental concern with environmental attitude and green apparel buying behaviour, given the environmentally-conscious behaviour of Japanese consumers. Hence, we posit:

H2. Environmental concern has a positive association with environmental attitude

H3. Environmental concern has a positive association with green apparel buying behaviour

3.3. Green trust, environmental attitude, green apparel buying behaviour, and environmental concern

Several recent studies have employed trust to examine consumer behaviour towards a variety of green products and services, including green hotels (Wang et al., 2018; Yadav et al., 2019) and organic vegetables (Ricci et al., 2018). In this regard, Yadav et al. (2019) suggested

that consumers who develop trust in the green facilities provided by hotels would have a positive attitude towards visiting them, a finding bolstered by Chen et al. (2019), who found this phenomenon among US consumers. Taufique et al. (2017) also observed that consumers' trust in green products results in pro-environmental consumer behaviour. Similarly, Ricci et al. (2018) found that positive trust leads to a positive attitude, which, in turn, results in higher intentions to purchase organic vegetables. In the case of green apparel, we also anticipate that consumers' trust in this apparel will have a positive effect on environmental attitude and their actual buying behaviour. Hence, we propose:

H4. Green trust has a positive association with environmental attitude

H5. Green trust has a positive association with green apparel buying behaviour

In addition, we believe that green trust is likely to be associated with environmental concerns. This assumption is based on the fact that environmental concern causes consumers to take an interest in green products over traditional ones (Yadav and Pathak, 2016). It is quite reasonable to think, then, that a consumer who makes sufficient effort to learn more about green apparel and develop trust in them would have a high environmental concern. This is also in consonance with the prior extended literature, where it has been revealed that trust in organic vegetables results in the development of concern for the safety of the environment (Ricci et al., 2018). Thus, we propose:

H6. Green trust has a positive association with environmental concern

3.4. Environmental knowledge, environmental attitude, green trust, and environmental concern

When consumers become aware of environmental issues, their knowledge is likely to change their attitude towards the environment. Prior literature also supports this expectation. For instance, Yadav and Pathak (2016) found that young consumers' environmental knowledge has a significant positive influence on their attitude towards the environment. Taufique et al. (2017) also reported that consumers' general environmental knowledge significantly influences their environmental attitude. In comparison, Polonsky et al. (2012) and Taufique et al. (2017) argued that environmental knowledge may not always cause the consumers to adopt pro-environmental behaviour, further indicating the existence of a knowledge-attitude-behaviour gap, since knowledge motivates consumers through attitude. Given the existing findings and the confounding knowledge-attitude-behaviour gap, we thus believe that it is worthwhile to explore these associations in the context of green apparel and Japanese consumers. We contend that with green apparel purchase being a pro-environmental behaviour, we can plausibly expect an association between environmental knowledge and environmental attitude. As such, we posit:

H7. Environmental knowledge has a positive association with environmental attitude.

In the case of Japanese consumers, we also expect their environmental knowledge to be high since they are considered environmentally conscious (Thyroff and Kilbourne, 2017). It would, therefore, be interesting to see how their knowledge is associated with contextual variables in the green apparel sector. With regard to trust, a contextual variable in our model, prior scholars have found that consumers' environmental knowledge positively influences their trust in the environment (Taufique et al., 2017). Notably, although the existing literature suggests that knowledge and trust in the environmental context are positively related to pro-environmental behaviour (Daugbjerg et al., 2014), their relationship is not completely understood. Due to this, we believe that it would be worthwhile to explore the contours of such an association in the case of green apparel. Such an exploration will not only confirm the possibility of a positive relationship in the context of green apparel but also illuminate the issue in the general context of

pro-environmental behaviour, which seems to be deficient at the moment. Hence, we hypothesise:

H8. Environmental knowledge has a positive association with green trust.

With reference to the association of environmental knowledge with environmental concern, another contextual variable in our model, the previous literature has argued that consumers with knowledge about the environment are likely to have concern for it (Yoon and Chen, 2017). As in the case of the constructs discussed above, no prior empirical study has investigated such an association regarding green apparel. However, conjecturing an association between environmental knowledge and concern in this context is not difficult as the entire premise of using green apparel is of concern for the environment, which can be expected to be high in consumers who have environmental knowledge. This aligns with the findings of Jaiswal and Singh (2018), which provided the first empirical evidence of an association between consumers' knowledge and consciousness of environmental issues. Thus, we propose:

H9. Environmental knowledge has a positive association with environmental concern

3.5. Labelling desire, labelling satisfaction, and green apparel buying behaviour

Since labelling is considered an information tool, the desire for labelling may be an important variable in the context of green products (Taufique et al., 2017). The prior extended literature has argued the importance of labelling in varied contexts. For instance, de Andrade Silva et al. (2017) observed that consumers' desire for sustainability labelling influenced their intention to purchase organic chocolate. Similarly, Bray et al. (2019) suggested that consumers desire more information while ordering food at restaurants, implying the need for decision-making inputs. Although labelling desire is a less explored construct in the green context, we believe that it might play an important role in decision-making related to the purchase of green apparel. Thus, we hypothesise:

H10. Labelling desire has a positive influence on green apparel buying behaviour

Labelling satisfaction represents the consumers' views about the information made available about a given product (Aitken et al., 2020). In this context, Aitken and Watkins (2014) argued that although consumers claim they have enough knowledge about the environment, they lack product-specific knowledge. Due to this, labelling satisfaction among consumers might low. Despite this, labelling satisfaction has not been examined much in the green marketing context. As a result, we feel that it is exigent to explore the role of labelling satisfaction in the green context. Thus, we seek to examine the association of labelling satisfaction with the green apparel buying behaviour of Japanese consumers. We hypothesise:

H11. Labelling satisfaction has a significant positive influence on green apparel buying behaviour

3.6. The mediating role of environmental concern, green trust, and environmental attitude

Environmental concern is a key factor in determining consumers' pro-environmental activities (Sadiq et al., 2020). Specifically, scholars have argued that environmental concern mediates the association of environmental knowledge with environmental attitude (Jaiswal and Singh, 2018). In the present context as well, we also expect this mediating effect of environmental concern to manifest itself. Similarly, trust in green products, such as organic vegetables, has been found to result in the development of environmental concern, which, in turn, results in the formation of positive attitude towards the protection of the environment

(Ricci et al., 2018; Yadav, 2016). Thus, we believe that environmental concern may mediate the association of environmental attitude and green trust. Since this study is the first to consider environmental concern as a mediator in the relationship between green trust and environmental attitude, there are no prior findings to draw upon. Hence, we propose:

H12a-b. Environmental concern mediates the relationship of environmental knowledge and green trust, each with environmental attitude

The extant literature on environmental marketing reveals that green trust plays a significant role in influencing consumers' green purchase behaviour (Yadav et al., 2019), given that trust is associated with knowledge. For instance, Li and Tilt (2019) found that public trust in air quality depends upon the knowledge they have about it, which results in an attitude towards engagement in reducing air pollution. In a similar vein, scholars contend that the dissemination of environmental knowledge is required to instill trust in consumers, which may further enhance a pro-environmental attitude in them (Arianti and Yenita, 2020). Furthermore, Taufique et al. (2017) and Ricci et al. (2018) have suggested that trust in green products depends upon consumers' knowledge about these products' capabilities, which, in turn, results in the generation of environmental concern. This discussion leads us to explore the possibility of the mediating role of trust in the relationship of environmental knowledge with environmental attitude and environmental concern in the context of green apparel. Hence, we propose:

H13a-b. Green trust mediates the relationship of environmental knowledge with environmental attitude and environmental concern

As discussed in the preceding parts, prior studies have observed the existence of an attitude-behaviour gap in different contexts (Wiederhold and Martinez, 2018). We argue that we can explicate this gap by examining the mediating effect of environmental attitude on the association of environmental concern and trust, each with green apparel buying behaviour. The proposed investigation is rooted in the findings of prior extended literature, including Yadav (2016) and Yadav and Pathak (2016), who found that young consumers are concerned about the environment, which results in the development of a positive attitude towards their participation in environmental safety. Similarly, the recent literature has claimed that higher trust in green products, such as organic food or green hotels, results in a positive attitude (Ricci et al., 2018; Yadav et al., 2019), which, in turn, results in actual pro-environmental consumer behaviour (Taufique et al., 2017). Therefore, it is plausible to expect that environmental attitude acts as a mediator between environmental concern/green trust and green apparel buying behaviour. Hence, we posit:

H14a-b. Environmental attitude mediates the relationship of environmental concern and green trust, each with green apparel buying behaviour

3.7. The moderating role of age and gender

Scholars have argued that demographic variables, such as age and gender, have a significant moderating influence on consumers' environmental behaviour. To begin with, Finisterra do Paço and Raposo (2010) found that younger consumers were less committed to the environment compared with older ones. Accordingly, young consumers have a poor environmental attitude, low environmental concern and environmental knowledge, and less green product consumption (Finisterra do Paço and Raposo, 2010). Similarly, Wang et al. (2018) found that age moderated the relationship of green trust with intentions, with the association being stronger for older consumers. Furthermore, age was also found to influence the level of environmental concern and men's pro-environmental behaviour (Coelho et al., 2017). However, there have been contrary findings as well. For instance, Chekima et al. (2016) revealed that gender did not moderate the relationship between

attitude and intentions to purchase green products, even though it moderated the association between the information on eco-labels and purchase intentions. Against the backdrop of these studies, we expect age and gender to moderate the association of environmental knowledge with environmental concern. Thus, we hypothesise:

H15a. Age moderates the association of environmental knowledge with environmental concern such that the association is different for younger and older consumers

H15b. Gender moderates the association of environmental knowledge with environmental concern such that the association is different for males and females

The hypothesised relationships, as discussed above, are presented in Fig. 1.

4. Methods

4.1. Data collection

We utilised an online, cross-sectional survey design, using items adapted from previously validated measures in the extant literature (Table 1). The data were collected using a random sampling method by Macromill Inc, a leading internet marketing company in Japan, with over 2 million active Japanese registered members (Kumagai and Nagasawa, 2019). In addition to its popularity amongst scholars, practitioners, and government officials, the company recently provided the data collection for forthcoming studies investigating a similar, pro-environmental context (Tandon et al., 2021; Dhir et al., 2021). The survey was disseminated in February–March 2020 among Macromill members in Tokyo metropolitan area in Japan. 412 responses were collected in a single wave until the desired consumer profile was achieved, based on an initial screening question about the respondents' familiarity with green apparel. Each survey question was compulsory to ensure that the returned responses did not contain any missing values or incomplete data. Furthermore, the data collection process observed strict adherence to the ethical guidelines according to the privacy protection rules by Japanese Industrial Standards (JIS).

4.2. Data analysis

We employed the two-step approach adopted by many recent studies (Talwar et al., 2020a, b) to analyse the data, using SPSS 25.0 and AMOS 25.0. This process involved examining the measurement model using confirmatory factor analysis (CFA), followed by structural equation modeling, as discussed in the next section. First, the data was cleaned and checked for missing data, unengaged responses, multicollinearity, skewness, and kurtosis. As a result, nearly 25 responses were excluded after the Z-score determined them to be outliers. Our final dataset thus included 387 responses to be carried forward for further analysis. Next, the results confirmed that the data were normally distributed since the skewness and kurtosis for the measurement items were within the prescribed threshold limit (Hair et al., 2010). Furthermore, the tolerance values were greater than 0.1, and the variance inflation factors were less
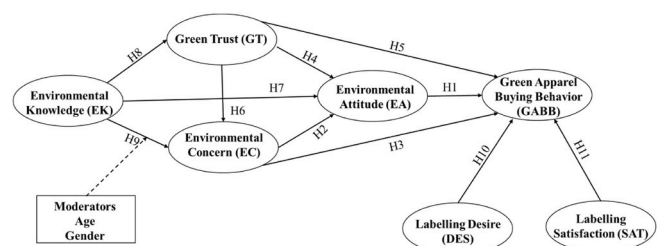

Fig. 1. Hypothesised research model.

Table 1
Measurement of study variables.

Study Measures (Source)	Measurement items	CFA	SEM
Environmental Knowledge (EK) Kumar et al. (2017)	EK1: Using environmentally sustainable products is a substantial way to reduce the wasteful use of natural resources	.84	.82
	EK2: Using environmentally sustainable products is a great way to conserve natural resources	.81	.80
Environmental Concern (EC)	EC1: Human beings are severely abusing the environment	.63	.64
	EC2: Humans must maintain a balance with nature in order to survive	.85	.83
Green Trust (GT) Wang et al. (2018)	GT1: I feel that sustainable fashion products' environmental performance is generally believable	.86	.87
	GT2: I feel that sustainable fashion products' environmental argument is generally trustworthy	.77	.76
Environmental Attitude (EA) Kumar et al. (2017)	EA1: I believe that the use of environmentally sustainable products by me will help in reducing pollution and also help in improving the environment	.75	.75
	EA2: I believe that the use of environmentally sustainable products by me will help in reducing the wasteful use of natural resources	.81	.81
	EA3: I believe that the use of environmentally sustainable products by me will help in conserving natural resources	.75	.75
Green Apparel Buying Behavior (GABB) Khare & Sadachar (2017)	GABB1: I buy clothing made of organically-grown natural fibers	.77	.77
	GABB2: I buy fashion products with low impact or no dye processing	.70	.70
	GABB3: I buy fashion products with environmentally-friendly labelling or packaging techniques	.69	.69
Labelling Desire (DES) Aitken et al. (2020)	DES1: I would like specific information on labelling explaining the ethical impacts of sustainable fashion products on the environment	.81	.75
	DES2: I would like to see a national standard for sustainable fashion product labelling	.69	.74
Labelling Satisfaction (SAT) Aitken et al. (2020)	SAT1: When shopping, I can easily distinguish between sustainable fashion products and non-sustainable fashion products	.92	.86
	SAT2: It is easy to identify sustainable fashion product labels	.70	.75

than 5, confirming the absence of multicollinearity in the data, as discussed by recent studies (e.g., Talwar et al., 2019; Talwar et al., 2021). Table 2 presents the demographic profile of the respondents.

5. Results

5.1. Common method bias

Following these initial checks, the relevant study constructs were evaluated for common method bias using Harman's single factor test in SPSS. The results reported that a single factor explained 33.38% of the total variance, which is within the recommended threshold value of 50%, thus proving that the data does not have any problem of common method bias. However, in line with recent studies (e.g., Talwar et al., 2020c), we also used the marker-variable technique to examine the issue of CMB. The results reaffirmed that CMB-related issues were not present in our data.

Table 2
Demographic profile.

Demographic measures	Category	Percentage (Frequency)
Age	20–25 years	21.7 (84)
	26–30 years	26.9 (104)
	31–35 years	15.2 (59)
	36–40 years	14.2 (55)
	41–45 years	22 (85)
Gender	Female	52.2 (202)
	Male	47.8 (185)
Marital status	Married	58.1 (225)
	Unmarried	41.9 (162)
Economic background	Less than 2 million (m) JPY	4.9 (19)
	2–4 m JPY	11.6 (45)
	4–6 m JPY	18.9 (73)
	6–8 m JPY	11.1 (43)
	8–10 m JPY	10.9 (42)
	10–12 m JPY	6.5 (25)
	12–15 m JPY	4.7 (18)
	15–20 m JPY	2.3 (9)
	20 m + JPY	0.5 (3)
	I don't know	11.4 (44)
	Not reported	17.3 (67)

JPY = Japanese Yen.

5.2. Measurement model

The measurement model was evaluated via confirmatory factor analysis, which returned a good model fit ($\chi/df = 2.02$, *CFI* = 0.96, *TLI* = 0.95, *RMSEA* = 0.05) (Tabachnick and Fidell, 2007). As shown in Table 3, composite reliability (CR) values for the study constructs were above 0.70. This confirmed both internal reliability and convergent validity. Moreover, convergent validity was confirmed since the average variance explained (AVE) for the study measures was greater than 0.50. Similarly, discriminant validity was also confirmed since the AVE values of the study constructs were found to be greater than the corresponding values for the maximum shared variance and average shared variance. Furthermore, the AVE values' square root for each construct was more than the intercorrelations among the different constructs. The details of the validity and reliability are reported in Table 3. Item loadings were also above the recommended cut-off value of 0.5 (Table 2).

5.3. Structural model

Similar to the measurement model, the structural model was also found to possess satisfactory model fit indices ($\chi/df = 2.56$, *CFI* = 0.94, *TLI* = 0.92, *RMSEA* = 0.06). With regard to the antecedents of green buying behaviour, environmental attitude (H1: $\beta = 0.22$, $p < .01$), green trust (H5: $\beta = 0.25$, $p < .001$), and labelling satisfaction (H11: $\beta = 0.30$, $p < .001$) were significant, but environmental concern (H3: $\beta = 0.06$, $p > .05$) and labelling desire (H10: $\beta = 0.09$, $p > .05$) were not associated with it. Regarding the antecedents of environmental attitude, environmental concern (H2: $\beta = 0.12$, $p > .05$) and green trust (H4: $\beta = -0.02$, $p > .05$) had no association with this construct. In comparison, environmental knowledge was strongly and positively correlated with environmental attitude (H7: $\beta = 0.65$, $p < .001$). Furthermore, environmental knowledge was positively associated with green trust (H8: $\beta = 0.65$, $p < .001$) and environmental concern (H9: $\beta = 0.68$, $p < .001$). Finally, green trust had no association with environmental concern (H6: $\beta = 0.05$, $p > .05$). Thus, hypotheses H1, H5, H7, H8, H9, and H11 were supported, while H2, H3, H4, H6 and H10 were not. The model explained 41.8% variance in green trust, 49.9% variance in environmental concern, 52.2% variance in environmental attitude, and 35.1% variance in green apparel buying behaviour (Table 4 and Fig. 2).

5.4. Mediation analysis

Mediation analysis was conducted using Model 4 in the PROCESS

Table 3
Validity and reliability analysis.

	Mean	SD	CR	AVE	MSV	ASV	SAT	EK	GT	EC	EA	GABB	DES
SAT	2.61	.84	.80	.67	.12	.04	**.82**						
EK	3.55	.71	.81	.69	.48	.30	.10	**.83**					
GT	3.15	.74	.80	.66	.37	.24	.32	.61	**.81**				
EC	3.93	.73	.71	.56	.44	.23	-.01	.66	.48	**.75**			
EA	3.64	.67	.81	.59	.48	.23	.04	.70	.46	.56	**.77**		
GABB	3.06	.70	.77	.52	.24	.16	.35	.48	.49	.33	.40	**.72**	
DES	3.41	.76	.72	.56	.31	.19	.07	.49	.52	.55	.45	.33	**.75**

Note: Composite reliability = CR, Average variance extracted = AVE, Maximum shared variance = MSV, Average shared variance = ASV, Labelling desire = DES, Environmental knowledge = EK, Green trust = GT, Environmental concern = EC, Environmental attitude = EA, Green apparel buying behavior = GABB, Labelling satisfaction = SAT.

Table 4
Results of hypotheses testing.

Hypothesis	Path	β	p	Support
H1	EA → GABB	.22	<0.01	Yes
H2	EC → EA	.12	>0.05	No
H3	EC → GABB	.06	>0.05	No
H4	GT → EA	-.02	>0.05	No
H5	GT → GABB	.25	<0.001	Yes
H6	GT → EC	.05	>0.05	No
H7	EK → EA	.65	<0.001	Yes
H8	EK → GT	.65	<0.001	Yes
H9	EK → EC	.68	<0.001	Yes
H10	DES → GABB	.09	>0.05	No
H11	SAT → GABB	.30	<0.001	Yes

Labelling desire = DES, Environmental knowledge = EK, Green trust = GT, Environmental concern = EC, Environmental attitude = EA, Green apparel buying behavior = GABB, Labelling satisfaction = SAT.
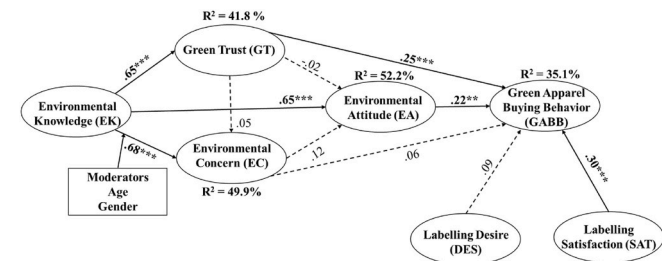

Fig. 2. Results of hypotheses testing.

Table 5
Mediation analysis.

EK → GT → EC

	β	se	t	p	LLCI	ULCI
EK → GT	.51	.05	10.85	.00	.4151	.5988
EK → EC	.44	.05	8.60	.00	.3396	.5408
GT → EC	.15	.05	3.15	.00	.0576	.2496
The total effect of EK → EC	.52	.05	11.44	.00	.4290	.6071

EK → GT/EC → EA

	β	se	t	p	LLCI	ULCI
EK → GT	.51	.05	10.85	.00	.4151	.5988
EK → EC	.52	.05	11.44	.00	.4290	.6071
EK →EA	.40	.05	8.31	.00	.3043	.4930
GT → EA	.09	.04	2.10	.04	.0058	.1728
EC → EA	.17	.04	3.94	.00	.0866	.2589
The total effect of EK → EA	.53	.04	13.51	.00	.4558	.6111

GT → EC → EA

	β	se	t	p	LLCI	ULCI
GT → EC	.36	.05	7.66	.00	.2652	.4485
GT → EA	.22	.04	5.18	.00	.1372	.3052
EC → EA	.32	.04	7.33	.00	.2335	.4047
The total effect of GT → EA	.34	.04	7.89	.00	.2516	.4185

GT → EA → GABB

	β	se	t	p	LLCI	ULCI
GT → EA	.34	.04	7.89	.00	.2516	.4185
GT → GABB	.30	.05	6.34	.00	.2052	.3896
EA → GABB	.20	.05	3.91	.00	.1016	.3069
The total effect of GT → GABB	.37	.04	8.26	.00	.2787	.4530

EC → EA → GABB

	β	se	t	p	LLCI	ULCI
EC → EA	.40	.04	9.57	.00	.3187	.4834
EC → GABB	.14	.05	2.67	.01	.0360	.2379
EA → GABB	.26	.06	4.67	.00	.1518	.3726
The total effect of EC → GABB	.24	.05	5.11	.00	.1490	.3353

Environmental knowledge = EK, Green trust = GT, Environmental concern = EC, Environmental attitude = EA, Green apparel buying behavior = GABB.

Table 6
Indirect effects between dependent and independent variable.

	Effect	se	LLCI	ULCI
EK → GT → EC	.08	.03	.0239	.1351
EK → GT → EA	.05	.03	-.0054	.0961
EK → EC → EA	.09	.02	.0437	.1415
GT → EC → EA	.11	.02	.0730	.1617
GT → EA → GABB	.07	.02	.0291	.1161
EC → EA → GABB	.11	.03	.0534	.1658

Environmental knowledge = EK, Green trust = GT, Environmental concern = EC, Environmental attitude = EA, Green apparel buying behavior = GABB.

macro in SPSS. The results showed that all mediators, i.e., green trust, environmental concern, and environmental attitude, partially mediated the proposed associations. The details of the direct, total, and indirect associations among the relevant study constructs are reported in Tables 5 and 6. Hence, hypotheses H12a, H12b, H13a, H13b, H14a, and H14b were supported.

5.5. Moderation analysis

Moderation analysis was performed using Model 1 in the PROCESS macro in SPSS to examine the moderating influence of age and gender on the association of environmental knowledge and environmental concern. The results reported that both age and gender positively moderated the relationship between environmental knowledge and environmental concern. Specifically, the moderation results showed that older users with high and medium intensity of environmental knowledge exhibited high environmental concern (Fig. 3), while younger users displayed higher environmental concern when they had low environmental knowledge. With regard to gender, females were found to have a high environmental concern at different intensities of environmental knowledge (Fig. 4). In general, males and females exhibited a similar kind of association of environmental concern and environmental knowledge. Thus, hypotheses H15a and H15b were supported.

6. Discussion

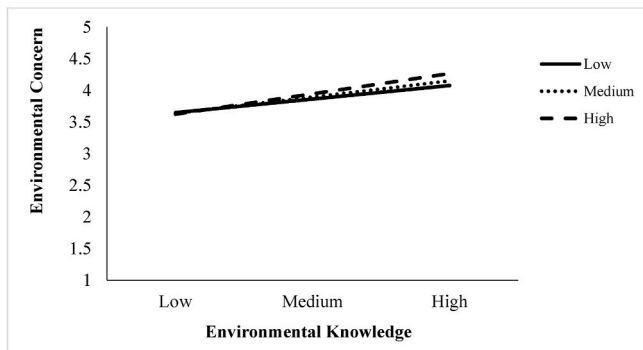With respect to the influence of environmental attitude on green

Fig. 3. Moderating influence of age on the association between Environmental Knowledge and Environmental Concern.
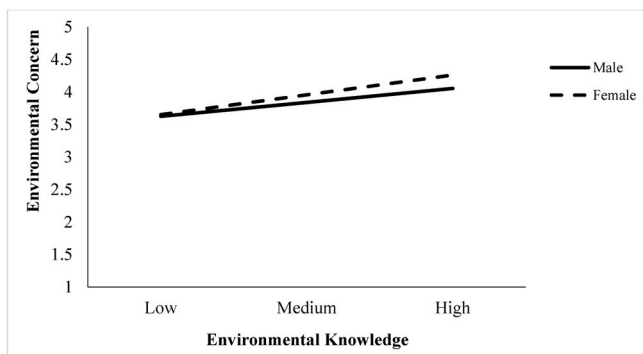

Fig. 4. Moderating influence of gender on the association between Environmental Knowledge and Environmental Concern.

apparel buying behaviour (H1), our finding aligns with past literature (e. g., Khare, 2015; Taufique and Vaithianathan, 2018; Taufique et al., 2017). These studies revealed the existence of the attitude-behaviour gap, representing a divergence in consumers' words and deeds (Sadiq, 2019).

With respect to the contextual factors employed in the study, namely, environmental concern and green trust, we tested five different hypotheses (H2-H6). Of these, H5 was supported, while the other four (H2, H3, H4, and H6) were not. H2 and H3 proposed the influence of environmental concern on environmental attitude and green apparel buying behaviour, respectively. The findings related to H2 contradicted those of past studies (e.g., Jaiswal and Kant, 2018). A probable reason for this contradictory finding could be that consumers do not connect their awareness of severe abuse of the environment and the human response required to maintain a balance with nature with the need to have a positive environmental attitude. This implies that the consumers' environmental concern does not manifest in their belief that the use of environmentally sustainable products can help in reducing pollution, improving the environment, decreasing the wasteful use of natural resources, and conserving natural resources. There could also be other influences that might cause consumers to disassociate environmental concerns from environmental attitudes. One of them could be the feeling that 'I alone am not responsible for everything'. However, to make more conclusive comments, this association needs to be tested further with a sample drawn from different socio-demographic settings. Although the lack of support for H3 contradicts our anticipation, it is in line with the extant literature (e.g., Coelho et al., 2017), confirming the existence of a concern-behaviour gap. This is quite illuminating as it indicates that even in the case of environmentally aware consumers, such as the Japanese, concern for the environment does not always translate into actual purchase behaviours.

Similarly, green trust did not influence environmental attitude (H4)

and environmental concern (H6). Although H4's finding contradicted prior studies (e.g., Yadav et al., 2019), a potential reason can be drawn from Ricci et al. (2018), who argued that confusing messages shared by firms about the environmental merits of their products fail to be effective in inspiring trust in consumers. This implies that consumers may not find sustainable fashion producers' environmental performance believable or their environmental argument trustworthy. Even if they do trust these producers, however, it may not always manifest in a positive environmental attitude. In addition, this is the first time that scholars have explored such an association in this context. More investigations are thus required to offer concrete evidence about the lack of association between green trust and environmental attitude. Similarly, no support for H6 was found, which is against the findings of prior studies (e.g., Ricci et al., 2018) and our expectations. This finding implies that trust in green apparel manufactures' sustainability claims does not impact concern for abuse of the environment. Although this result was not anticipated, this trust-concern gap could serve as the basis for us to contextualise the concern-behaviour (H3) gap better, which is one of the key findings of our study.

In comparison, H5 was supported, which is in line with prior studies (e.g., Taufique et al., 2017), implying that belief in green apparel manufacturers, as well as marketers' pro-environmental claims, can induce consumers to actually buy this apparel. The association of environmental knowledge with environmental attitude (H7) was also supported, in consonance with the past literature (e.g., Kumar et al., 2017). As there have been contradictory findings in the past (Jaiswal and Kant, 2018), our finding thus adds clarity to the accumulated knowledge. This association implies that consumers are well aware that environmentally sustainable products help in conserving natural resources, which leads to the formation of an attitude that the use of environmentally sustainable products can reduce pollution and conserving natural resources. An important implication is that environmental knowledge can reduce the attitude-behaviour gap in the green apparel context. Similarly, H8 and H9 were also supported. In concurrence with previous studies (e.g., Taufique et al., 2017), the support for H8 indicates that environmental knowledge is positively associated with green trust. This finding effectively implies that knowledge about the efficacy of environmentally sustainable products in conserving natural resources leads to an increase in trust in the sustainable fashion products' environment argument. In addition, the result supporting H9 is also in line with prior observations (e.g., Jaiswal and Singh, 2018). Confirming the positive association of environmental knowledge with environmental concern, this finding implies that environmental knowledge regarding the use of sustainable products is an effective way to protect natural resources from depletion results in heightened concern about the environment and a feeling that instead of severely abusing the environment, humans should live in harmony with nature.

In addition to the KAB and ABC constructs, we also examined the association of labelling desire and labelling satisfaction with green apparel buying behaviour (H10 and H11). H11 was supported by the findings, as anticipated, indicating that labelling satisfaction, which is derived from consumers easily identifying sustainable apparel through their labels, motivates them to buy these products. In comparison, H10 was not supported by the results, which is against our expectations. The probable reason behind this outcome is the lack of product-specific knowledge for green apparel, which might cause a low desire for green products' labels (Aitken and Watkins, 2014).

Apart from the hypothesised direct associations, the study also examined six mediation relationships, which were all supported by the results (H12a,b to H14a,b). H12a and H12b proposed the mediating effect of environmental concern on the association of environmental knowledge and green trust, each with environmental attitude. Both hypotheses were supported, implying that concern for environmental abuse and the belief in the need to maintain a balance with nature acts positively in transmitting the effect of environmental knowledge and

green trust on environmental attitude. KAB also suggests that sufficient environmental knowledge helps in building environmental concern and trust, which, in turn, results in a positive attitude (e.g., Taufique et al., 2017; Jaiswal and Singh, 2018). Next, H13a and H13b were also supported by the study results, confirming the mediating role of green trust in the association of environmental knowledge with environmental attitude and environmental concern. As argued by Ricci et al. (2018) and Taufique et al. (2017), a probable reason for this finding could be that consumers' knowledge leads to the development of trust, which enhances their environmental attitude and environmental concern. Lastly, H14a and H14b, proposing the mediating role of environmental attitude in the association of the two contextual factors (environmental concern and green trust) with green apparel buying behaviour, were also supported by the results of our mediation analysis. This is in consonance with the findings of Yadav et al. (2019) and Yadav and Pathak (2016), indicating that consumers' trust and concern for the environment stimulate their environmental attitude, which helps in reducing the attitude-behaviour gap.

Regarding the moderating influences, both H15a and H15b were supported, implying that age and gender positively moderate the relationship between environmental knowledge and environmental concern. This is in line with the prior literature, which has noted significant individual differences in consumers' environmental knowledge and environmental concern (Finisterra do Paço and Raposo, 2010). The finding suggests that older consumers with environmental knowledge have a greater environmental concern than their younger counterparts. This reinforces prior findings, which argued that older consumers are more environmentally-friendly and aware of environmental issues than young consumers (Finisterra do Paço and Raposo, 2010; Wang et al., 2018). Furthermore, the confirmation of the moderating effect of gender indicates that females display higher environmental concern than males, which could be explained by female consumers being more oriented towards environmental safety generally (Sadiq, 2019).

7. Conclusion

Green apparel buying behaviour is a reflection of a healthy yet fashionable lifestyle. However, green apparel is far from earning mass acceptance, as evidenced by the attitude-behaviour gap, which implies that a positive attitude towards green apparel does not translate into actual purchases. Recent studies have called for a better understanding of this much-debated gap in consumer research, specifically in green consumer research (e.g., McNeill and Moore, 2015; Wiederhold and Martinez, 2018). Our study furthers this understanding of green apparel buying behaviour and its antecedents to reduce the attitude-behaviour gap. We proposed two research questions to achieve the objectives of this study and analysed data collected from 387 Japanese retail consumers to address them. In response to RQ1, we examined the association of environmental knowledge with green trust, environmental concern, and environmental attitude, as well as the association of green trust, environmental concern, and environmental attitude with the green apparel buying behaviour of Japanese retail consumers. The findings confirmed the positive association of the three outcomes with environmental knowledge. The results also confirmed the positive association of green trust and environmental attitude with green apparel buying behaviour, indicating that the probable reason behind the attitude-behaviour gap is the insignificant relationship of green trust with environmental attitude and environmental concern. To answer RQ2, we analysed the collected data to measure the association of labelling desire and labelling satisfaction with the green apparel buying behaviour of Japanese retail consumers. The results supported a positive association of labelling satisfaction with buying behaviour.

Furthermore, to deeply diagnose the attitude-behaviour gap, we also examined the mediating role of green trust, environmental concern, and environmental attitude, all of which were significant but exhibited a weak influence on reducing the attitude-behaviour gap. We also

examined and confirmed the moderating effect of age (young versus old) and gender (male versus female) on the association of environmental knowledge and environmental concern. Our study offers interesting and useful implications for fashion retailers, researchers, and green apparel marketers, as discussed below.

7.1. Theoretical implications

This study offers three primary contributions to the theoretical knowledge in this field. First, prior studies have majorly focused on the role of the theory of planned behaviour to study green apparel buying behaviour (Nguyen et al., 2019). However, the current study derives its research model from the KAB and ABC theoretical frameworks, which have not yet been used in the context of green apparel. By doing so, the study contributes to broadening the theory-based insights available in this area.

Second, prior literature related to green apparel has suggested that researchers have largely focused on self-identity (Khare and Sadachar, 2017), past behaviour (Khare and Sadachar, 2017), intentions to purchase organic clothing (Tong and Su, 2018), and environmental knowledge (Khare, 2019). This study extends the accumulated learnings by revealing the significance of environmental knowledge, green trust, environmental attitude, and labelling satisfaction in the context of green apparel buying behaviour. Notably, labelling satisfaction and labelling desire are two variables that have rarely been examined in the green consumer behaviour literature, with no study examining them in the context of green apparel specifically. In addition, we offer a new perspective by revealing that environmental concern has an indirect effect on green apparel buying behaviour via environmental attitude, implying that concern about the environment by itself does not drive the consumers to adopt green apparel consumption.

Finally, the study highlights the green apparel buying behaviour of Japanese consumers, thereby bridging the gap in the extant literature related to the need for broader geographic insights in this area. In addition, it provides in-depth insights regarding the green apparel buying behaviour of consumers in a developed Asian country, which can improve the researchers' understanding of consumers' approach to green apparel in two key segments of interest: developed economies and Asia. An understanding of Japanese consumers' behaviour is quite important since they represent a group that is culturally different from western consumers. This is in concurrence with prior findings, which argue that Japan has a collectivist culture, whereas the UK and the USA have individualist ones (Sun et al., 2004). Understanding this cultural distinction is vital from the perspective of researchers, green apparel manufacturers, and marketers as scholars have uncovered culture-specific drivers of pro-environmental behaviour. For instance, Eom et al. (2016) found that environmental concern was associated with environmentally-friendly decisions among Europeans and Americans but not among the Japanese. Furthermore, Japanese consumers show a tendency to avoid risk and uncertainty in decision-making and give importance to health-related benefits (Min Kong and Ko, 2017), which can also be expected to impact their green apparel buying behaviour.

7.2. Practical implications

The study offers four key inputs for policymakers, marketers, manufacturers, and retailers. First, the study reveals that environmental knowledge stimulates consumers' attitude and trust, which translate into green apparel buying behaviour. This indicates that pro-environmental behaviour aimed at conserving natural resources can be enhanced through an increase in environmental knowledge. As such, this would be beneficial for society as a whole. We thus suggest that policymakers focus on enhancing the environmental knowledge of consumers so that the attitude-behaviour gap can be reduced. Towards this end, specific measures, such as social media messages, can be shared by governments from time to time to educate consumers and increase

their awareness about environmental issues.

Second, since trust is revealed to have a positive influence on buying behaviour, we suggest that manufacturers introduce several trust-building measures to increase the purchase of their products. One way to do this is to seek endorsements from experts confirming that their firm follows an environmentally responsible manufacturing process. Another way could be to occasionally invite consumers to their manufacturing facilities to let them observe the process in person. Such consumers can then spread positive word of mouth to others if they trust what they see.

Third, marketers can make efforts to develop trust and positive environmental attitudes towards their green apparel products by sponsoring various pro-environmental initiatives that can reinforce firms' environmental claims, thereby enhancing consumers' green apparel buying behaviour. This could also be achieved through the development of effective communication strategies focused on improving consumers' knowledge and trust about how green apparel consumption can conserve the environment and preserve it for future generations.

Lastly, labelling satisfaction emerged as a significant predictor of the green apparel buying behaviour of Japanese consumers. As highlighted in the literature, labelling satisfaction depends on information about particular products' green characteristics. Therefore, to showcase the superiority of green apparel over conventional apparel, manufacturers can eco-label their products to present their green characteristics. Displaying information about their products' green characteristics can thus be expected to enhance labelling satisfaction and promote green apparel buying behaviour.

7.3. Limitations and future scope

Although the study has offered new insights into why consumers buy green apparel, it does have certain limitations: first, the study was conducted in Japan, which is a developed nation with a unique culture. As such, the findings cannot be generalised to other developed nations, as well as other Asian nations that are still categorised as developing. Second, the current study collected data using a self-report questionnaire, which raises the issue of socially desirable responses that may not correctly reflect the actual situation. Lastly, the current study collected data using a cross-sectional approach at a single point in time. This may limit the understanding of the findings related to the attitude-behaviour gap as consumer behaviour changes with time.

Future researchers can overcome the limitations mentioned above in the following ways: first, our study can be replicated, and the model can be examined in different geographical settings to confirm the robustness of our findings. Second, we recommend the use of a longitudinal research design to collect data to diagnose the changing attitude-behaviour gap. Furthermore, our model can be expanded by considering the influence of variables such as price sensitivity, style, design, consumer innovativeness, and brand love that may influence the attitude-behaviour gap in the context of green apparel.

References

Aitken, R., Watkins, L., 2014. Sustainability, silence and social responsibility. In: T He Fourth Annual Asian Conference on Sustainability. Energy and the Environment, Osaka, Japan.

Aitken, R., Watkins, L., Williams, J., Kean, A., 2020. The positive role of labelling on consumers' perceived behavioural control and intention to purchase organic food. J. Clean. Prod. 255, 120334.

Alblousy, H., Hiller Connell, K.Y., 2019. Purchasing environmentally sustainable apparel: the attitudes and intentions of female Kuwaiti consumers. Int. J. Consum. Stud. 43 (4), 390–401.

Arianti, S.P., Yenita, 2020. Knowledge as predictor for visit behavioral intention with attitude and trust as mediator (study of green tourism destination in west sumatra). Talent Development & Excellence 12.

Arora, S., Parida, R.R., Sahney, S., 2020. Understanding consumers' showrooming behaviour: a stimulus–organism–response (SOR) perspective. Int. J. Retail Distrib. Manag. 48 (11), 1157–1176.

Bray, J., Hartwell, H., Price, S., Viglia, G., Kapuściński, G., Appleton, K., Saulais, L., Perez-Cueto, F.J.A., Mavridis, I., 2019. Food information presentation: consumer preferences when eating out. Br. Food J. 121 (8), 1744–1762.

Chekima, B., Wafa, S.A.W.S.K., Igau, O.A., Chekima, S., Sondoh Jr., S.L., 2016. Examining green consumerism motivational drivers: does premium price and demographics matter to green purchasing? J. Clean. Prod. 112, 3436–3450.

Chen, H., Bernard, S., Rahman, I., 2019. Greenwashing in hotels: a structural model of trust and behavioral intentions. J. Clean. Prod. 206, 326–335.

Chen, Y.S., Chang, C.H., 2013. Greenwash and green trust: the mediation effects of green consumer confusion and green perceived risk. J. Bus. Ethics 114 (3), 489–500.

Coelho, F., Pereira, M.C., Cruz, L., Simões, P., Barata, E., 2017. Affect and the adoption of pro-environmental behaviour: a structural model. J. Environ. Psychol. 54, 127–138.

Consumer Affairs Agency, 2017. Report of Ethical Consumption in Japan. https://www.caa.go.jp/policies/policy/consumer_education/consumer_education/ethical_s tudy_group/pdf/region_index13_170419_0002.pdf. (Accessed 13 October 2020).

Daugbjerg, C., Smed, S., Andersen, L.M., Schvartzman, Y., 2014. Improving eco-labelling as an environmental policy instrument: knowledge, trust and organic consumption. J. Environ. Pol. Plann. 16 (4), 559–575.

de Andrade Silva, A.R., Bioto, A.S., Efraim, P., de Castilho Queiroz, G., 2017. Impact of sustainability labeling in the perception of sensory quality and purchase intention of chocolate consumers. J. Clean. Prod. 141, 11–21.

Dhir, A., Koshta, N., Goyal, R.K., Sakashita, M., Almotairi, M., 2021. Behavioral reasoning theory (BRT) perspectives on E-waste recycling and management. J. Clean. Prod. 280 (1), 24269.

Eom, K., Kim, H.S., Sherman, D.K., Ishii, K., 2016. Cultural variability in the link between environmental concern and support for environmental action. Psychol. Sci. 27 (10), 1331–1339.

Ertz, M., Karakas, F., Sarigöllü, E., 2016. Exploring pro-environmental behaviors of consumers: an analysis of contextual factors, attitude, and behaviors. J. Bus. Res. 69 (10), 3971–3980.

Feldmann, C., Hamm, U., 2015. Consumers' perceptions and preferences for local food: a review. Food Qual. Prefer. 40, 152–164.

Finisterra do Paço, A.M., Raposo, M.L.B., 2010. Green consumer market segmentation: empirical findings from Portugal. Int. J. Consum. Stud. 34 (4), 429–436.

Goh, S.K., Balaji, M.S., 2016. Linking green skepticism to green purchase behavior. J. Clean. Prod. 131, 629–638.

Grimmer, M., Kilburn, A.P., Miles, M.P., 2016. The effect of purchase situation on realized pro-environmental consumer behavior. J. Bus. Res. 69 (5), 1582–1586.

Guagnano, G.A., Stern, P.C., Dietz, T., 1995. Influences on attitude-behavior relationships: a natural experiment with curbside recycling. Environ. Behav. 27 (5), 699–718.

Jacobs, K., Petersen, L., Hörisch, J., Battenfeld, D., 2018. Green thinking but thoughtless buying? An empirical extension of the value-attitude-behaviour hierarchy in sustainable clothing. J. Clean. Prod. 203, 1155–1169.

Jaiswal, D., Kant, R., 2018. Green purchasing behaviour: a conceptual framework and empirical investigation of Indian consumers. J. Retailing Consum. Serv. 41, 60–69.

Jaiswal, D., Singh, B., 2018. Toward sustainable consumption: investigating the determinants of green buying behaviour of Indian consumers. Business Strategy & Development 1 (1), 64–73.

Kallgren, C.A., Wood, W., 1986. Access to attitude-relevant information in memory as a determinant of attitude-behavior consistency. J. Exp. Soc. Psychol. 22 (4), 328–338.

Khare, A., 2015. Antecedents to green buying behaviour: a study on consumers in an emerging economy. Market. Intell. Plann. 33 (3), 309–329.

Khare, A., 2019. Green apparel buying: role of past behavior, knowledge and peer influence in the assessment of green apparel perceived benefits. J. Int. Consum. Market. 1–17.

Khare, A., Sadachar, A., 2017. Green apparel buying behaviour: a study on Indian youth. Int. J. Consum. Stud. 41 (5), 558–569.

Kumagai, K., Nagasawa, S.Y., 2019. Psychological switching mechanism of consumers' luxury and non-luxury brand attitude formation: the effect of store location prestige and self-congruity. Heliyon 5 (5), e01581.

Kumar, B., Manrai, A.K., Manrai, L.A., 2017. Purchasing behaviour for environmentally sustainable products: a conceptual framework and empirical study. J. Retailing Consum. Serv. 34, 1–9.

Landry, N., Gifford, R., Milfont, T.L., Weeks, A., Arnocky, S., 2018. Learned helplessness moderates the relationship between environmental concern and behavior. J. Environ. Psychol. 55, 18–22.

Li, X., Tilt, B., 2019. Public engagements with smog in urban China: knowledge, trust, and action. Environ. Sci. Pol. 92, 220–227.

McNeill, L., Moore, R., 2015. Sustainable fashion consumption and the fast fashion conundrum: fashionable consumers and attitudes to sustainability in clothing choice. Int. J. Consum. Stud. 39 (3), 212–222.

McNeill, L., Venter, B., 2019. Identity, self-concept and young women's engagement with collaborative, sustainable fashion consumption models. Int. J. Consum. Stud. 43 (4), 368–378.

Ministry of Economy, Trade and Industry (METI), 2016. Report of Apparel and Supply Chain Research. https://www.meti.go.jp/committee/kenkyukai/seizou/apparel_supply/pdf/report01_02_00.pdf.

Ministry of the Environment, 2018. Annual Report on the Environment. the Sound Material-Cycle Society and Biodiversity in Japan. https://www.env.go.jp/policy/hakusyo/h30/html/hj18010301.html.

Min Kong, H., Ko, E., 2017. Why do consumers choose sustainable fashion? A cross-cultural study of South Korean, Chinese, and Japanese consumers. Journal of Global Fashion Marketing 8 (3), 220–234.

Muthukumarana, T.T., Karunathilake, H.P., Punchihewa, H.K.G., Manthilake, M.M.I.D., Hewage, K.N., 2018. Life cycle environmental impacts of the apparel industry in Sri Lanka: analysis of the energy sources. J. Clean. Prod. 172, 1346–1357.

Nguyen, M.T.T., Nguyen, L.H., Nguyen, H.V., 2019. Materialistic values and green apparel purchase intention among young Vietnamese consumers. Young Consum. 20 (4), 246–263.

Polonsky, M.J., Vocino, A., Grau, S.L., Garma, R., Ferdous, A.S., 2012. The impact of general and carbon-related environmental knowledge on attitudes and behaviour of US consumers. J. Market. Manag. 28 (3–4), 238–263.

Ricci, E.C., Banterle, A., Stranieri, S., 2018. Trust to go green: an exploration of consumer intentions for eco-friendly convenience food. Ecol. Econ. 148, 54–65.

Rousseaux, P., Gremy-Gros, C., Bonnin, M., Henriel-Ricordel, C., Bernard, P., Floury, L., Staigre, G., Vincent, P., 2017. "Eco-tool-seeker": a new and unique business guide for choosing ecodesign tools. J. Clean. Prod. 151, 546–577.

Sadiq, M., 2019. Impact of Consumer Optimism and Consumer Pessimism on the Adoption of Pro-environmental Consumption Behaviour. Doctoral dissertation, University of Otago).

Sadiq, M., Paul, J., Bharti, K., 2020. Dispositional traits and organic food consumption. J. Clean. Prod., 121961

Schäufele, I., Hamm, U., 2017. Consumers' perceptions, preferences and willingness-to-pay for wine with sustainability characteristics: a review. J. Clean. Prod. 147, 379–394.

Sun, T., Horn, M., Merritt, D., 2004. Values and lifestyles of individualists and collectivists: a study on Chinese, Japanese, British and US consumers. J. Consum. Market. 21 (5), 318–331.

Tabachnick, B.G., Fidell, L.S., Ullman, J.B., 2007. Using Multivariate Statistics, vol. 5. Pearson, Boston, MA, pp. 481–498.

Talwar, S., Dhir, A., Kaur, P., Mäntymäki, M., 2020a. Why do people purchase from online travel agencies (OTAs)? A consumption values perspective. Int. J. Hospit. Manag. 88, 102534.

Talwar, S., Dhir, A., Kaur, P., Mäntymäki, M., 2020b. Barriers toward purchasing from online travel agencies. Int. J. Hospit. Manag. 89, 102593.

Talwar, S., Dhir, A., Kaur, P., Zafar, N., Alrasheedy, M., 2019. Why do people share fake news? Associations between the dark side of social media use and fake news sharing behavior. J. Retailing Consum. Serv. 51, 72–82.

Talwar, S., Dhir, A., Khalil, A., Mohan, G., Islam, A.N., 2020c. Point of adoption and beyond. Initial trust and mobile-payment continuation intention. J. Retailing Consum. Serv. 55, 102086.

Talwar, M., Talwar, S., Kaur, P., Tripathy, N., Dhir, A., 2021. Has financial attitude impacted the trading activity of retail investors during the COVID-19 pandemic? J. Retailing Consum. Serv., 102341

Tandon, A., Jabeen, F., Talwar, S., Sakashita, M., Dhir, A., 2021. Facilitators and inhibitors of organic food buying behavior. Food Qual. Prefer. 88, 104077.

Taufique, K.M.R., Siwar, C., Chamhuri, N., Sarah, F.H., 2016. Integrating general environmental knowledge and eco-label knowledge in understanding ecologically conscious consumer behavior. Procedia Economics and Finance 37, 39–45.

Taufique, K.M.R., Vaithianathan, S., 2018. A fresh look at understanding Green consumer behavior among young urban Indian consumers through the lens of Theory of Planned Behavior. J. Clean. Prod. 183, 46–55.

Taufique, K.M.R., Vocino, A., Polonsky, M.J., 2017. The influence of eco-label knowledge and trust on pro-environmental consumer behaviour in an emerging market. J. Strat. Market. 25 (7), 511–529.

Thyroff, A.E., Kilbourne, W.E., 2017. Understanding pro-environmental intentions through growth, competitiveness, and concern. Australas. Mark. J. 25 (2), 97–105.

Tong, X., Su, J., 2018. Exploring young consumers' trust and purchase intention of organic cotton apparel. J. Consum. Market. 35 (5), 522–532.

Trivedi, R.H., Patel, J.D., Acharya, N., 2018. Causality analysis of media influence on environmental attitude, intention and behaviors leading to green purchasing. J. Clean. Prod. 196, 11–22.

Wang, J., Wang, S., Xue, H., Wang, Y., Li, J., 2018. Green image and consumers' word-of-mouth intention in the green hotel industry: the moderating effect of Millennials. J. Clean. Prod. 181, 426–436.

Wiederhold, M., Martinez, L.F., 2018. Ethical consumer behaviour in Germany: the attitude-behaviour gap in the green apparel industry. Int. J. Consum. Stud. 42 (4), 419–429.

Yadav, R., 2016. Altruistic or egoistic: which value promotes organic food consumption among young consumers? A study in the context of a developing nation. J. Retailing Consum. Serv. 33, 92–97.

Yadav, R., Balaji, M.S., Jebarajakirthy, C., 2019. How psychological and contextual factors contribute to travelers' propensity to choose green hotels? Int. J. Hospit. Manag. 77, 385–395.

Yadav, R., Pathak, G.S., 2016. Young consumers' intention towards buying green products in a developing nation: extending the theory of planned behavior. J. Clean. Prod. 135, 732–739.

Yoon, D., Chen, R.J., 2017. A green shadow: the influence of hotel customers' environmental knowledge and concern on green marketing skepticism and behavioral intentions. Tourism Anal. 22 (3), 281–293.

Zhang, L., Li, D., Cao, C., Huang, S., 2018. The influence of greenwashing perception on green purchasing intentions: the mediating role of green word-of-mouth and moderating role of green concern. J. Clean. Prod. 187, 740–750.

Zhang, H., Song, X., Xia, T., Yuan, M., Fan, Z., Shibasaki, R., Liang, Y., 2018. Battery electric vehicles in Japan: human mobile behavior based adoption potential analysis and policy target response. Appl. Energy 220, 527–535.