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Keywords

green digital interaction; perceived values; green purchase; pro-environmental behavior; structural equation modelling

Short Running Title: Green interaction and Green Purchase Intention

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The impact of social media exposure and online peer networks on green purchase behavior

Abstract

Green purchase behavior has grown significantly to promote sustainable living and minimize the environmental impacts of increasing consumption. There are limited research investigating the impact of green digital interaction influence customers' pro-environmental practices. Drawing from customer value theory, the objective of the present study is to investigate the mediating role of perceived values in the relationship between green digital interaction and green purchase intention. A total of 308 participants were recruited to complete a survey regarding green purchases in China. Structural equation modelling (SEM) was used, and the findings provided empirical evidence that emotional value is a central concept that mediates the relationship between green digital interaction and other value dimensions. The study provides significant findings for organizations and marketers to implement more effective digital marketing strategies to promote green products.

Keywords: green digital interaction; perceived values; green purchase; pro-environmental behavior; structural equation modelling

1. Introduction

Environmental pollution and climate change are two serious environmental problems worldwide. According to the World Health Organization (WHO), quite a few human diseases are brought on by air pollution, accounting for about 1 in 9 deaths worldwide (WHO, 2016). Digital media plays a crucial role in creating awareness and addressing the issues of environmental pollution and climate change (Li et al., 2023). With its wide reach and accessibility, digital media platforms have become powerful tools for raising public consciousness and mobilizing collective action. To cope with environmental issues, promoting green purchase behavior via digital media has become increasingly important (Wei et al., 2024).

Green purchase behavior is the acquisition of eco-friendly products or services with the goal of reducing negative environment impacts and achieving sustainable living (Han, 2020; Ming et al., 2022). A study by White et al. (2019) found that 65% of the people expressed a desire to purchase brands that have a purpose and strive for sustainability, while only approximately 26% can truly do it. Prior studies have examined antecedents of green purchase behavior, namely cultural values (Nguyen-Thi-Phuong et al., 2022) and natural environmental concerns (Ming et al., 2022). However, limited research has been done on how green digital interaction (social media exposure and online peer networks) influences customers' perceived value towards green purchases, which in turn exerts an impact on green purchase behavior (Hynes & Wilson, 2016). Dash et al. (2021) empirically examined the impact of brand interaction, including brand identity, brand image, brand integrity, and brand interaction on customers' purchase intention in digital age. However, the findings of Dash et al. (2021) have not addressed the impact of green digital interaction on customers' purchase intention, thus creating a research gap. Green digital interaction of green products with customers in various industries should be further explored.

To respond the research needs from Dash et al. (2021), the element of green digital interaction has been considered in this study. Many profit and non-profit organizations (NGOs) have put efforts and resources to promote green products in China (Lo & Liu, 2018; Wut et al., 2021; Wut & Ng, 2023). With significant stakeholders' green digital interaction, social media pages and online customer services are created to raise public awareness of environmental issues, and that proves the dynamic green resources appear in the Chinese society (Liu & Li, 2021). These mediums provide individuals with valuable information and resources, leading to increased awareness and understanding of the importance of environmental sustainability (Knupfer et al., 2023). Furthermore, social media allows users to stay connected with like-minded individuals, who can serve as role models for sustainable consumption (Lever & Elliot, 2022). Social media and online peer networks are effective in providing a platform for individuals to share their own green practices, and thus, promote and encourage others to do the same (Chan & Ng, 2024). Therefore, we conceptualized that green digital interaction positively influenced customers' perceived values towards green purchase, which in turn exerts an impact on customers' green purchase behavior. Both social media exposure and online peer networks are included as the attributes of green digital interaction (Wang et al., 2022b; Garg et al., 2020), which predicts customers' perceived values towards green purchase intention (Riva et al., 2022).

Nonetheless, limited research operationalizes perceived values with different components in generating green purchase attitude and intention (Luo et al., 2020a). Customers tend to consider conventional products rather than green products due to the lack of pleasant emotions in sustainable green consumption, but emotional value is an important affective state for customers towards a certain behavior. Customers with higher emotional value would expect the functions and features of green products with

standard quality and affordable prices (Han, 2020). Besides, customers with higher emotional value would prefer to share information about green products with like-minded online peer networks. Thus, it is estimated that emotional value can eliminate the dilemma in economic, functional and relation values, and boost up the mutual green digital interaction between company and customer via green digital interaction. Digital green interaction is scant in the research of pro-environmentalism (Cooke et al., 2022). Cooke et al. (2022) assessed various studies on the future of green tourism that exploit digital media to assist in protecting natural and cultural environment. However, the underlying mechanism between digital green interaction and green purchase is missing. Drawing from customer value theory, this paper investigates the relationship between green digital interaction (i.e. social media exposure, and online peer networks), components of perceived values (i.e. emotional, economic, functional and relational values), and green purchase intentions. Therefore, the objective of the current study is to investigate the mediating role of perceived values in the relationship between green digital interaction and green purchase intention.

The followings are the research questions:

RQ1. To what extent does green digital interaction influence customers' perceived values towards green purchase attitude and intention?

RQ2. What are the marketing strategies that companies would use to improve customers' perceived values towards green purchase attitude and their green purchase intentions?

We employed customer value theory to examine the mediating role of perceived values in the relationship between green digital interaction and green purchase intention. This study provides significant theoretical contributions by addressing the call from Dash et al. (2021) to examine the impact of green digital interaction on customers' green

purchase behavior, expanding the current understanding of green purchase behavior and perceived values. Additionally, by extending customer value theory and employing Partial Least Square (PLS) approach, we introduce four perceived values and demonstrate how different perceived values relate to one another, providing a detailed analysis of these dynamics. The flow of this study is as follows: First, we conducted comprehensive literature review on green digital interaction, perceived values and green purchase behavior. Second, a conceptual model has been developed that will examine the relationships between green digital interaction, the mediating role of emotional values and other perceived values, green purchase attitude and green purchase behavior. Third, the research methodology will be presented by employing Structural Equation Modeling (SEM) to process the data and test proposed hypotheses. Then, results will be shown regarding the casual relationships among constructs. Next, we discuss the results followed by theoretical and practical contributions of the study. Finally, conclusions and future research will be highlighted.

2. Literature review

2.1. *Green Digital interaction*

Green digital interaction includes social media exposure and online peer networks and promotes perceived values and drive green purchasing intentions (Nekmahmud et al., 2022a). Green digital engagement creates effective marketing tactics, as well as the triple bottom line (TBL) and the Sustainable Development Goals (SDGs) (Singh & Rahman, 2021). Individuals are exposed to content on social media platforms that promotes the environmental benefits and ethical concerns of green products. Online peer networks create a supportive community in which people can share their sustainable choices and inspire others to follow suit. Digital media platforms generate incentives and desire to make green

purchasing decisions by highlighting perceived values linked with green living, such as environmental stewardship and social responsibility (Zafar et al., 2021). In other way round, this drives the need for eco-friendly products, contributing to a more sustainable future.

2.1.1 Social media exposure

Social media exposure refers to how frequently people were exposed to material regarding green behavior and sustainability on social media (Zafar et al., 2021; Anjum & Katarya, 2024). This exposure is expected to have a significant impact on people's perceived values and willingness to make green purchases. Studies showed that frequent exposure to environmental content on social media platforms improves people's perceptions of the importance of sustainability, resulting in a stronger alignment of their own beliefs with environmentally friendly activities (Yang et al., 2021b; Gupta & Katarya, 2020). Furthermore, social media is a valuable source of knowledge and social influence, highlighting sustainable products, initiatives, and peer testimonials. Such exposure promotes a sense of social responsibility and increases individuals' willingness to actively seek out and support green items, so fostering sustainable purchasing patterns.

2.1.2 Online peer networks

Gong et al. (2022) emphasized that peers are the most important and the first socialization agent that influence green purchase behavior. Many aspects of sustainable green consumption can be relevant to peers. Marketers can stimulate more environmental communications to make sustainable green consumption habits more visible regarding the causes of environmental problems (Ng et al., 2024). Young people may be more likely to develop cognitions and consciousness to supplement their

sustainable green behaviors, such as green purchases (Ford et al., 2023).

2.2. *Customer value theory*

Customer value theory proposes that value perception is a crucial determinant influencing customer attitude (Zhang & Zhang, 2022). Customer value theory is often used to evaluate a variety of customer behaviors, including purchase behavior (Ng & Cheung, 2022), shop membership and trust (Lee et al., 2020), and green brand attachment with green integrity (Song & Kim, 2022). Customer perceived value is defined as customers' total judgment of the net usefulness of the product/service based on perceptions of what is provided and obtained. Perceived advantages add favorably on perceived values, while perceived expenses have a negative impact on customers' purchase attitudes. In a study from Chen and Keng (2018), perceived price is positively connected to relative usefulness and compromise. Then, Solakis et al. (2022) build upon the ideas of relative usefulness and compromise from Chen & Keng's (2018) model. Relative usefulness is determined by a combination of extrinsic (e.g., trademark and recognition) and intrinsic (e.g., material and taste) factors, while compromise encompasses both monetary and nonmonetary aspects of pricing. Across research, the type of relative usefulness and compromise varies, including monetary factors or method components (Salem & Alanadoly, 2022).

2.2.1 *Emotional value*

Emotional value is associated with good sentiments received when using items or services, such as delight, pleasure, and contentment (Loureiro et al., 2020). The emotional value of customers is embedded in their green-consuming experience

acquired in daily life, and their degree of pleasure during the information acquisition process through green digital interaction. The emotional value of customers is also positively connected with the pleasure and amusement gained from the green digital interaction and green purchase experiences, as well as engagement with inspired peers on green purchase themes (Tan et al., 2022). Therefore, emotional value is defined as the good sentiments acquired by customers through social media. Green purchase experiences including green grocery shopping, buying green gadgets, and purchasing electric cars with family could create hedonic emotions and further create emotional value that benefits to the planet (Nekmahmud et al., 2022b). Also, media exposure allows customers to acquire information related to green products and environmental issues (Bedard & Tolmie, 2018). It further advocates that the level of customer emotional richness towards green products, reflects how the customer is affected by the social media to become a loyal customer towards a green brand. Their hedonic emotions acquired from family and media can also generate functional value, economic value, relational value related to sustainable behavior (Zhang & Zhang, 2022, Gupta & Katarya, 2022).

Customers with emotional value in green purchases are more likely to notice the information about the functional features of green products and take action to purchasing green products (Tan et al., 2022; Kwong et al., 2023; Lau et al., 2024). Besides, customers with emotional value would perceive more relational value since they would be more likely to introduce green products to their peers. Eventually, green products could bring out the message of importance of green value and image. Therefore, this study estimates that customers' emotional value creates functional value, economic value, and relational value.

2.2.2 *Economic value*

Economic value is the perceived utility arising from the benefit and cost results. Such value relates to the concept and value of money that can be generated from green digital interaction and induce and suppress purchase attitudes and intentions (Akram et al., 2021). Customers are especially interested in determining the return on investment associated with their strong participation in green purchases (Bedard & Tolmie, 2018). For the same reason, relatively fewer business owners produce and sell green products. This makes green products difficult to be reached by customers. In light of this, to generate better returns of profits, companies have to predict the perceived value that customers may want. Likewise, customers always perceive green products as more expensive than the alternatives (Wei et al., 2018). They would automatically choose other substitute products without acquiring any green digital interaction about green products. According to the TBL, it is noteworthy that customers who have a positive perception of the economic value of green products are more receptive to learning about the benefits of such products and purchasing them. In fact, purchasing green products in the long run generates a higher economic return individually and socially, as well as achieving United Nations Sustainable Development Goals (Currás-Pérez et al., 2018). Green marketing can assist businesses in lowering costs and increasing efficiency by implementing sustainable practices. Also, fewer eco-unfriendly products purchased can probably switch the trend and production to green products (Kim & Oh, 2022). Therefore, customers with economic value are expected to have a higher green purchase attitude.

2.2.3 *Functional value*

Functional value refers to customer's perceptions of product' or service's functional

and physical usefulness, such as qualities, traits or utilitarian aspects (Jang et al., 2021). In this regard, it is worth noting that the functional value of any item may be assessed by both practical and aesthetic benefits obtained by customers through physical performance (Jin et al., 2021). Furthermore, functional differentiating features of any products or services may influence the development of human society and should include the responsibility to society, especially with respect to sustainable development. Therefore, green companies should realize the economic return of green products that bring positive impacts and functions toward the ultimate goal of lowering global pollution. A snowball effect can be created once customers emotionally perceive the value of green products through green digital interaction, and in turn generates functional value. Functional value is profoundly discussed to interpret attitude (Nekmahmud et al., 2022b) but little research has explained the factors that constitute it, especially not explained by other values (Moise et al., 2021).

2.2.4 Relational value

Customers gain interactions and partnership value through contacts with companies or inspired peers (Ki & Kim, 2019). Exchanges between customers on social media that promote continuing and durable connections, quick replies, and prompt green digital interaction, provide relational value (Itani et al., 2020; Massoudi & Katarya, 2021). When customers' relational value is tied to interaction with peers at school or at work, such value is increased when continuing ties are formed. These ties are strengthened by information exchange in real-time encounters with inspired peers, including the exchange of news related to environmental issues (Gong et al., 2022). In this study, relational value is defined as the advantages gained by customers through connections with inspired peers on media and result in continuing and lasting relational experiences.

Previous research suggests that peers play a significant role in the creation of identity in sustainable consumption, influencing their companions' purchase intentions of organic products (Wang et al., 2022a). To summarize, the evidence largely confirms the greater impact of consensus reference groups on individuals' sustainable consumption patterns, the greater vision of sustainable goals can be promoted. Therefore, this study suggests that relational value would be induced by green digital interaction and generate green purchase attitude.

2.2.5 Mediation effect of emotional value

As a mediating variable, emotional value has a positive impact on consumers' green purchase behavior (Dörnyei & Lunardo, 2021; Ravi et al., 2022). Ng & Cheung (2022) mentioned that a high degree of emotional values makes customer more inclined to trigger green purchase tendency. When customers perceive high emotional value while reading social media post or interacting with online peers, they are highly satisfied with other perceived values, such as economic, functional and relational values so as to purchase green products.

2.3 Green purchase attitude

Customer attitudes created by pleasant sensations and favorable perceptions of certain items or brands eventually lead to a green purchase intention (Hamzah & Tanwir, 2021). Customers who have a positive experience of such green items will believe that their purchase is useful, satisfying, and desirable. As a result, green purchase attitude refers to an individual's personal views and attitudes toward ecologically sustainable items and services (Joshi et al., 2021). Green marketers believe that green integrity is critical for businesses to develop credibility and confidence with customers who are

more conscious of environmental issues. For instance, research has indicated that people who have a perceived green mindset and good sentiments regarding hybrid and electric cars, are more likely to have favorable intentions toward purchasing electric cars (Jena, 2020). Thus, the most important element of green purchase intention is a favorable attitude toward green products.

2.4 *Green purchase intention*

Green purchase intention is the propensity and desire to consume a sustainable product (Joshi et al., 2021). Rausch and Kopplin (2021) suggested that green purchase intention is the likelihood of customers purchasing green items and is determined by their environmental demands. Customers are conscious that their actions and behaviors may impact the environment. Green customers purchase green items to protect the environment from further degradation (Tan et al., 2018). Thoo et al. (2021) also emphasized that one sustainable behavior would gradually encourage other sustainable behaviors. In the long run, green purchase intention can be established by companies because green digital interaction between stakeholders is increasing, which simultaneously shapes the practice of environmental, social and governance (ESG). A better business strategy can be set up for outcome-based marketing implementation. In addition, ESG indicates how green products and customer behavior sustain. Other than purchase decisions (i.e. green purchase), routines such as energy and water-saving, and recycling are all contributed to green behavior. It is worth mentioning that green behavior can be categorized into several aspects, with green consumption being one of them, so green purchase of ecological friendly items can contribute to lessening the negative environmental consequences (Wei et al., 2018). With a favorable perception and attitude of green purchases, green purchase intention is induced.

2.5 *Conceptual framework*

Emotional value has been used to explain behavioral attitude for years (Joshi, Uniyal & Sangroya, 2021) but has not been discussed comprehensively (Ng & Cheung, 2022). In this study, green digital interaction is used to explain the interrelated factors constituting emotional value. The purchase habits of online peer networks' influence reinforce the value of individuals in purchasing green products (Hamzah & Tanwir, 2021). More importantly, online peer networks are powerful in the digital world, and they can share benefits of green products to their friends and followers, which can enable them to make well-informed decisions when having green purchases (Jonhstone & Lindh, 2022). Customers are more intended to behave responsibly in protecting the environment when they are receiving social media promotions of the green attributes of items (Lin & Niu, 2018). Hence, customers' perceived values can be cultivated when they are exposed to the growing influence of social media and online peer networks, and further induce emotional, economic, functional, and relational values (Savin, 2023). With adequate perceived values created, customers are more likely to establish green purchase attitude and purchase green products. Based on the prior literature regarding perceived values in relation to green purchase intention, a conceptual model of this study (See Fig. 1.) was shown below, with the following hypothesized relationships:

H1. Social media exposure has a positive direct relationship with (a) emotional value, (b) economic value, (c) functional value, and (d) relational value.

H2. Online peer networks have a positive direct relationship with (a) emotional value, (b) economic value, (c) functional value, and (d) relational value.

H3. Emotional value has a positive direct relationship with (a) economic value, (b) functional value and (c) relational value.

H4. Emotional value mediates the relationship between social media exposure and (a) economic value, (b) functional value and (c) relational value.

H5. Emotional value mediates the relationship between online peer networks and (a) economic value, (b) functional value and (c) relational value.

H6. There is a positive direct relationship between (a) economic value, (b) functional value and (c) relational value and green purchase attitude.

H7. Green purchase attitude has a positive direct relationship with green purchase intention.

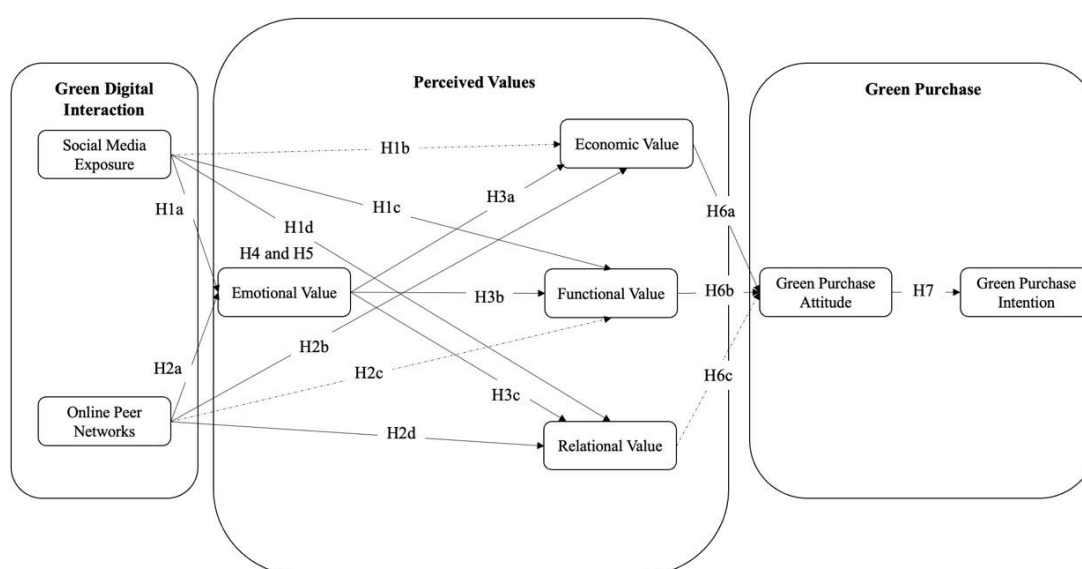


Fig. 1. Conceptual framework.

3. Methodology

3.1 Data collection and procedures

A professional online survey company in China, SoJump (<https://www.wjx.cn/>) was employed to distribute the questionnaires. Judgmental sampling method was adopted in this study, assisting in selecting valid samples and minimizing non-response bias (Rowley, 2014). Both Nekmahmud et al. (2022a) and Jaini et al. (2020) have applied a similar method when examining customers' green purchase behavior in the social media context. To ensure the suitability of potential participants, two pre-screening questions were included as selection criteria for our sampling frame. The first question assessed whether participants had subscribed to at least one social media platform, such

as WeChat, Weibo, Douyin, or Xiaohongshu. The second question inquired whether participants had purchased green products (e.g. recycled toilet tissue, recycled plastic toothbrushes, reusable shopping bags, and any other green products) in the previous three months. Participants who met the inclusion criteria were asked to fill in an online survey. Thus, individuals who did not meet the aforementioned criteria were excluded from the study. There was a total of 308 respondents participated in the survey. Table 1 shows the descriptive statistics of respondents.

Table 1

Descriptive Statistics of Respondents.

	Research sample	
	<i>N</i>	%
Sex		
Female	166	53.9%
Male	142	46.1%
Age		
20-29	115	37.3%
30-39	134	43.5%
40-50	59	19.2%
Education level		
Secondary school graduation or below	92	29.9%
Bachelor's degree	192	62.3%
Master's degree	17	5.5%
Doctoral degree	7	2.3%
Purchase Frequency in the past 3 months		
Once	65	21.1%
Twice	104	33.8%
Three times	83	26.9%
Four times or more	56	18.2%

3.2 Instruments and measures

All constructs used in this research were adopted from prior literature related to our research context, As the survey was conducted in China, forward-back translation was

used to translate the original measurement items (i.e. English) into Chinese to ensure the accuracy (Beaton et al., 2000). In addition, two language lecturers were invited to examine whether the questionnaire items reflect the constructs being measured. Before distributing the questionnaire through SoJump, a pre-test was conducted with 10 individuals who subscribed at least one social media platform as well as purchased green products in the last three months to ensure the reliability and validity of all measurement items in the questionnaire. The results of the pre-test showed that the Cronbach's coefficients of all constructs in exploratory factor analysis are larger than 0.7, affirming all proposed items of constructs in the questionnaire are valid and reliable (Hair et al., 2020). The questionnaire contained two sections. In section one, demographic data of respondents' sex, age, and educational level, purchase frequency were collected. In section two, measurement items of each construct were collected, including green digital interaction (social media exposure and online peer networks), perceived values (emotional value, economic value, functional value and relational value), green purchase attitude and intention.

For green digital interaction, three items on social media exposure modified from Sun and Wang (2020); three items on online peer networks modified from Yang et al. (2021a). For perceived values, three items on emotional value (e.g. "I think purchasing green product is fun"), four items on economic value (e.g. "green products are good products for the price"), three items on functional value (e.g. "I think purchasing green products is helpful for me") and three items on relational value (e.g. "purchasing green products help me build a better relationship with peers") were adapted from Carlson et al. (2019). In addition, four items on green purchase attitude (e.g. "purchasing green products makes me feel good") were adapted from Su et al., (2021) and three items on green purchase intention (e.g. "in future, I will consider buying products because they are less polluting") were adapted from Joshi et al. (2021). Participants were provided

examples of green products, e.g. recycled toilet tissue, recycled plastic toothbrushes, reusable shopping bags and any other green products. The measurement items of media exposure were rated on seven-point Likert scales from “not at all” to “always” while the rest of the measurement items were rated in seven-point Likert scales from “strongly disagree” to “strongly agree”.

3.3 Data analysis

This study analyzed the conceptual model using Partial Least Square Structural Equation Modeling (PLS-SEM) in SmartPLS 3.0. The SEM method outperforms competing approaches such as regression analysis. SEM examines all model variables concurrently rather than individually, resulting in a more accurate assessment (Ringle et al., 2015). PLS-SEM also uses covariance-based approaches for the following reasons. First, normal distribution is not necessary. Second, PLS-SEM can handle complicated models with many indicators. Third, 10 times the maximum number of inner or outer model linkages of all the latent variables are used for the minimum sample size in the proposed model as suggested by (Hair et al., 2021). The conceptual model had a total of 15 linkages. Hence, 308 respondents in this study were adequate.

According to Hair et al. (2021), there are two-step approaches to analyze the proposed model using PLS-SEM. The first step requires examining a measurement model to test the reliability and validity of the constructs. For the second step, it comprises of assessing the hypothesized connections between constructs. The indirect effects (mediating effects) are assessed by bootstrapping with 5000 samples.

3.4 Results

3.4.1 Common Method Bias (CMB)

To assess common method bias, Harman’s single-factor test and full collinearity test were adopted. According to Harman’s single-factor test, the results indicated

that the variance explained by the first factor was 34.28%, which is less than 40%, suggesting that there is no CMB issue (Fuller et al., 2016). In addition, variance inflation factor (VIF) values were determined. It is found that the VIF values ranges from 1.366 and 2.655, which is below 3.33 (Hair et al., 2021). Both tests suggested that there is no CMB in this study.

3.4.2 Measurement model

The measurement model was evaluated in three steps according to Hair et al. (2021). First, composite dependability (i.e. internal consistency) of the proposed model was examined. The composite reliability's threshold level should be more than 0.7. As shown in Table 2, all the latent variables were within the permissible range of 0.70 or above. Second, convergent validity was used to identify the degree to which a questionnaire item relates to other items of the same construct, and it was measured by the latent variable's average variances extracted (AVE) value. Hair et al. (2021) proposed that an AVE level of 0.5 or higher is satisfactory, and the findings of this investigation revealed that the AVE values of all latent variables fall within this range. Third, Heterotrait-monotrait (HTMT) ratio approach was adopted to ensure that the measure of one construct is not connected to other constructs, suggesting an HTMT ratio smaller than 0.90 (Henseler et al., 2015). The results of the current study demonstrated that all the HTMT values of less than 0.90, meeting the threshold level (see Table 3).

Table 2

Assessment of measurement model on reliability, validity and collinearity.

Scale and items	Loadings	Composite reliability	AVE	VIF
Social media exposure		0.920	0.743	
SME1 How much information have you seen about environmental issues on Instagram, Facebook, WhatsApp, Twitter, YouTube, etc?	0.911			2.566
SME2 How much information have you seen/heard about environmental issues on other media types (TV, radio, press, Internet news)?	0.885			2.312

SME3 How much information have you heard about environmental problems from relatives, friends, neighbors, and others?	0.843			1.989
Online peer networks		0.921	0.796	
OP1 I often learn about environmental issues from my online peers.	0.887			2.367
OP2I often discuss the environmental issues/products with my online peers.	0.903			2.595
OP3 I often share with my online peers about green product experiences and information.	0.886			2.133
Emotional value		0.928	0.810	
EmV1 I think purchasing green products is fun.	0.895			2.401
EmV2 I believe purchasing green products is exciting.	0.922			2.921
EmV3 I think purchasing green products is entertaining.	0.882			2.344
Economic value		0.886	0.661	
EcV1 Green products are good products for the price.	0.830			2.230
EcV2 Green products are economical for the attributes they offer	.0.873			2.478
EcV3 Green products have an expectable standard quality.	0.836			1.927
EcV4 Green products are made from non-hazardous substances	.0.704			1.501
Functional value		0.937	0.833	
FV1 I think purchasing green products is helpful for me.	0.910			2.732
FV2 I believe purchasing green products is useful for me.	0.908			2.735
FV3 I think purchasing green products is functional for me.	0.921			2.967
Relational value		0.961	0.891	
RV1 Purchasing green products help me build a better relationship with my peers.	0.937			2.801
RV2 Purchasing green products could enable me to build a greater connection with my peers.	0.949			2.591
RV3 Purchasing green products could help me maintain a long-term relationship with my peers.	0.945			2.358
Green purchase attitude		0.928	0.763	
GPA1 Purchasing green products makes me feel good.	0.897			1.802
GPA2 Purchasing green products makes me feel satisfied.	0.896			2.135
GPA3 Purchasing green products makes me feel reliable.	0.900			2.142
GPA4 Purchasing green products makes me feel environmentally responsible.	0.795			2.105
Green purchase intention		0.892	0.735	
GPI1 In future, I will consider buying products because they are less polluting.	0.911			1.923
GPI2 In future, I will consider switching to other brands for ecological reasons.	0.758			2.103
GPI3 In future, I plan to switch to a green version of a product.	0.896			2.225

Table 3
Assessment of the discriminant validity using HTMT.

Construct	Social media exposure	Online peer network	Emotional value	Economic value	Functional value	Relational value	Green purchase attitude	Green purchase intention
Social media exposure								
Online peer network	0.714							
Emotional value	0.767	0.744						
Economic value	0.695	0.684	0.883					
Functional value	0.717	0.663	0.896	0.874				
Relational value	0.720	0.742	0.867	0.793	0.764			
Green purchase attitude	0.645	0.634	0.881	0.882	0.823	0.722		
Green purchase intention	0.677	0.626	0.803	0.870	0.854	0.663	0.900	

3.4.3 Structural model

The path coefficients and t-values were obtained using the PLS bootstrap approach. As Table 5 indicated, there was a positive relationship between social media exposure and emotional value ($\beta = 0.44, p < .001$), functional value ($\beta = 0.16, p < .05$) and relational value ($\beta = 0.15, p < .05$), but not significant on economic value ($\beta = 0.11, n.s.$). Hence, H1a, H1c and H1d were supported, except for H1b. Online peer networks were positively related to emotional value ($\beta = 0.38, p < .001$), economic value ($\beta = 0.12, p < .05$), and relational value ($\beta = 0.23, p < .001$) but not significant on functional value ($\beta = 0.06, n.s.$). Thus, H2a, H2b and H2d were supported, except for H2c. Besides, emotional value was positively related to economic value ($\beta = 0.60, p < .001$), functional value ($\beta = 0.66, p < .001$), and relational value ($\beta = 0.54, p < .001$). Therefore, H3a, H3b and H3c were supported.

Green purchase attitude was significantly predicted by economic value ($\beta = 0.30, p < .001$) and functional value ($\beta = 0.52, p < .001$), but not significant from relational value ($\beta = -0.06, n.s.$). Thus, H6a and H6b were supported, except for H6c. Lastly, green purchase attitude was positively related to green purchase intention ($\beta = 0.78, p$

< .001). Thus, H7 was supported. Regarding the effect size (f^2), only H1a ($f^2 = 0.262$), H3a ($f^2 = 0.413$), H3b ($f^2 = 0.574$), H3c ($f^2 = 0.631$) and H6b ($f^2 = 0.601$) showed a large effect. The paths hypothesized in H2a ($f^2 = 0.189$), H6a ($f^2 = 0.201$) and H7 ($f^2 = 0.156$) showed a medium effect. Other paths, such as H1b ($f^2 = 0.115$), H1c ($f^2 = 0.135$), H1d ($f^2 = 0.132$), H2b ($f^2 = 0.118$), H2c ($f^2 = 0.106$), H2d ($f^2 = 0.122$). Overall, the proposed model explains 54.7% of the variance for emotional value, 59.9% for economic value, 66.1% for functional value, 66.5% for relational value, 78.6% for green purchase attitude, and 60.9% for green purchase intention.

3.4.4 Mediation analysis

To analyze the proposed mediation role of perceived values, this study followed the recommended procedure suggested by Cheah et al. (2021). Notably, emotional value was significant as a full and partial mediator. Emotional value was a significant full mediator for the relationship between social media exposure and economic value ($\beta = 0.267, p < .001$) and between online peer networks and functional value ($\beta = 0.246, p < .05$). In addition, emotional value was a significant partial mediator for the relationship between social media exposure and functional value ($\beta = 0.290, p < .001$), and relational value ($\beta = 0.269, p < .001$) and between online peer networks and economic value ($\beta = 0.227, p < .001$), and relational value ($\beta = 0.20, p < .001$). Therefore, H4a, H4b, H4c and H5a, H5b, H5c were all supported. The effect sizes of indirect paths were calculated using the standardized v effects. The standardized v effects were determined which ranged from 0.178 to 0.283, demonstrating a medium to large effect by using the rule of thumb (i.e. 0.01 for small, 0.09 for medium and 0.25 for large effects) suggested by Bakker et al. (2019). The medium effect size demonstrates an important role of emotional value in mediating the link between green digital interaction and perceived values in purchasing green products. The mediation

analysis was summarized in Table 4 while the PLS results of the structural model are presented in **Fig. 2**.

Table 4
Mediation analysis.

Total effects			Direct effect			Indirect effect							
β	t -value	p values	Beta	t -value	p values	Hypothesis	β	STDEV	t -value	p values	Confidence interval		Result
											Upper	Lower	
0.382	5.766	0.000***	0.115	1.827	0.068	H4a: SME \rightarrow EV \rightarrow EcV	0.267	0.045	5.971	0.000***	0.321	0.517	Supported
0.447	6.911	0.000***	0.157	2.631	0.009**	H4b: SME \rightarrow EV \rightarrow FV	0.290	0.050	5.764	0.000***	0.351	0.572	Supported
0.442	6.786	0.000***	0.173	5.786	0.003**	H4c: SME \rightarrow EV \rightarrow RV	0.269	0.047	5.786	0.000***	0.396	0.655	Supported
0.347	5.375	0.000***	0.120	2.101	0.036*	H5a: OP \rightarrow EV \rightarrow EcV	0.227	0.047	4.830	0.000***	0.282	0.443	Supported
0.308	4.292	0.000***	0.061	1.106	0.269	H5b: OP \rightarrow EV \rightarrow FV	0.246	0.047	5.222	0.000***	0.342	0.512	Supported
0.505	10.182	0.000***	0.276	5.067	0.000***	H5c: OP \rightarrow EV \rightarrow RV	0.229	0.046	4.969	0.000***	0.330	0.545	Supported

Note(s):* Significant at 0.05, ** Significant at 0.01, *** Significant at 0.001, 10,000 sample bootstrap

SME: social media exposure, EV: emotional value, EcV: economic value, FV: functional value, RV: relational value, OP: online peer networks

Source(s): Author-generated table from survey data utilizing Smart PLS 4

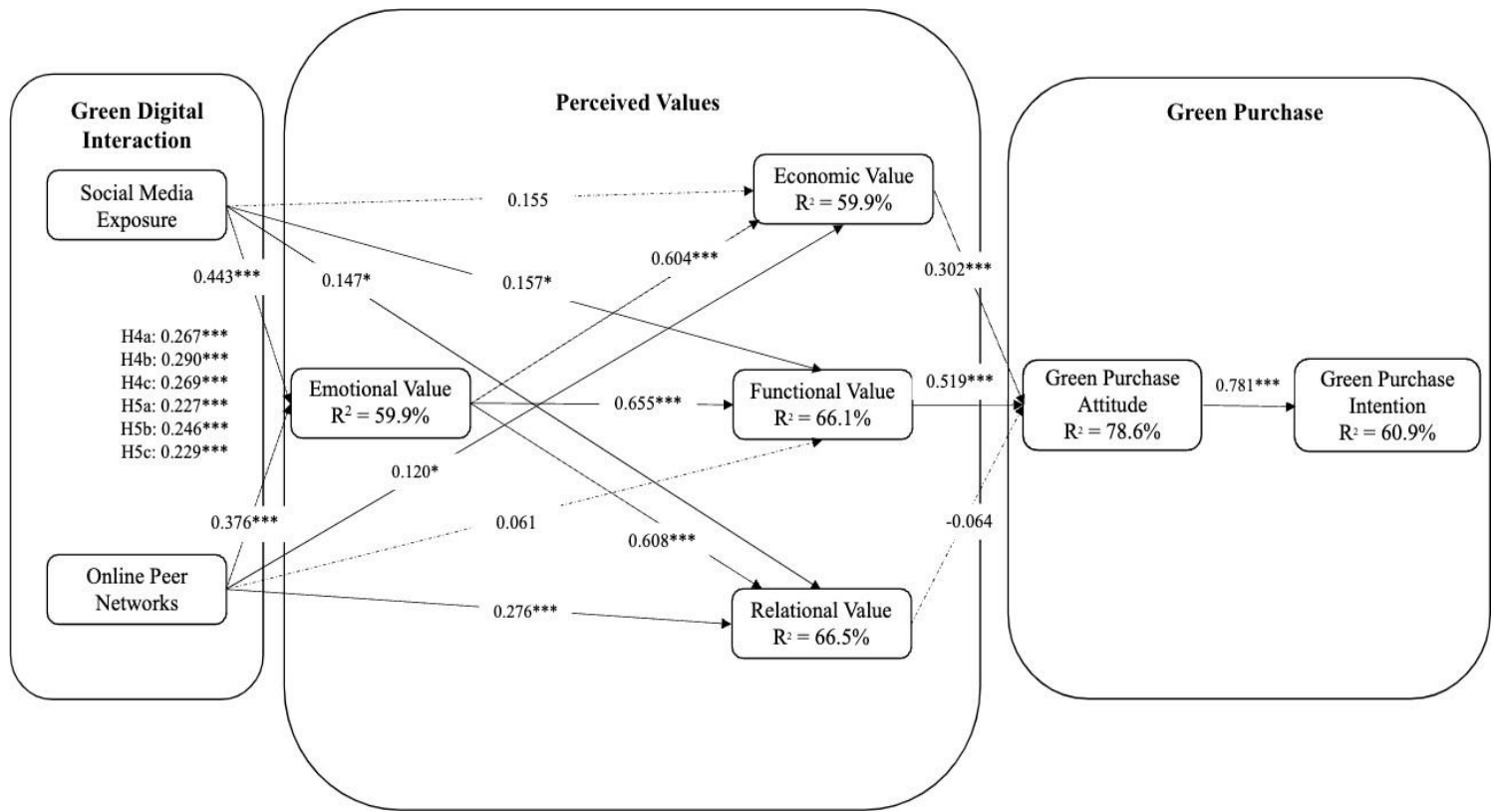


Fig. 2 PLS results of the structural model

3.4.5 Model Fit

Standardized Root Mean Square Residual (SRMR) and the Normed Fit Index (NFI) were used to assess the model fit of the model. According to Hu & Bentler (1999), the threshold values for both SRMR and NFI should be below 0.08 and exceed 0.90, respectively. In this study, the SRMR values were 0.051 and 0.070 for saturated and estimated models. Additionally, NFI values were 0.950 and 0.942 for saturated and estimated models. The results indicated that the proposed model is a good model fit to explain green purchase behaviour in social media context by using customer value theory.

Table 5
Summary of PLS-SEM path analysis.

Path	Hypothesis	Path coefficients	t-statistics	p-values	ν	f^2	R^2
Social media exposure → emotional value	H1a	0.443	6.912	0.000***		0.262	
Social media exposure → economic value	H1b	0.155	1.827	0.068		0.115	
Social media exposure → functional value	H1c	0.157	2.631	0.009*		0.135	
Social media exposure → relational value	H1d	0.147	2.349	0.019*		0.132	
Online peer networks → emotional value	H2a	0.376	5.573	0.000***		0.189	
Online peer networks → economic value	H2b	0.120	2.101	0.036*		0.118	
Online peer networks → functional value	H2c	0.061	1.106	0.269		0.106	
Online peer networks → relational value	H2d	0.276	5.067	0.000***		0.122	0.599
Emotional value → economic value	H3a	0.604	10.342	0.000***		0.413	
Emotional value → functional value	H3b	0.655	11.665	0.000***		0.574	
Emotional value → relational value	H3c	0.608	11.680	0.000***		0.631	
Social media exposure → emotional value → economic value	H4a	0.267	5.971	0.000***	0.283		
Social media exposure → emotional value → functional value	H4b	0.290	5.764	0.000***	0.265		
Social media exposure → emotional value → relational value	H4c	0.269	5.786	0.000***	0.186		
Online peer networks → emotional value → economic value	H5a	0.227	4.830	0.000***	0.178		0.599
Online peer networks → emotional value → functional value	H5b	0.246	5.222	0.000***	0.208		0.661
Online peer networks → emotional value → relational value	H5c	0.229	4.969	0.000***	0.186		0.665
Economic value → green purchase attitude	H6a	0.302	4.447	0.000***		0.201	
Functional value → green purchase attitude	H6b	0.519	7.707	0.000***		0.601	
Relational value → green purchase attitude	H6c	-0.064	1.184	0.237			0.786
Green purchase attitude → green purchase intention	H7	0.781	27.401	0.000***		0.156	0.609

*p < 0.05; ***p < 0.001

4. Discussion

This paper sought to address two research questions in green purchase context. First, “to what extent does green digital interaction influence customers’ perceived values towards green purchase attitude and intention?” Results from this study reveal a significant and positive relationship between green digital interaction (i.e. social media exposure and online peer networks) and emotional value. The results are consistent with Tan et al. (2022) and Nekomahmud et al. (2022a) that through social media exposure and online peer networks, hedonistic feelings learned from friends and social media can potentially produce economic, functional, and relational benefits from sustainable behavior. This study examined the underlying mechanism of perceived values between green digital interaction and green purchases. Interestingly, there is a full mediating effect between social media exposure and economic value, as well as between online peer networks and functional value via emotional value. These outcomes reconfirm that the green digital interaction is crucial to developing pro-environmental behavior. Besides, there are partial mediating effects between social media exposure and functional value, and relational value via emotional value. There are also partial mediating effects between online peer networks and economic value, and relational value via emotional value. Economic value and functional value could establish stronger association with green purchase attitude than relational value. This is because customers pay more attention to the perceived worth of a green product in relation to its cost (i.e. economic value), as well as the perceived usefulness and intended purpose of a green product during the green purchase process (Zhang et al., 2020). Thus, functional and emotional values are significant perceived values in this study. Accordingly, attitude towards green purchase is positively related to green purchase intention.

Surprisingly, there is a non-significant relationship between social media exposure and economic value. One possible reason is that social media discussions in green products tend to emphasize environmental benefits, impacts, and sustainability rather than economic value (Nazish et al., 2024). Users of these social media platforms may be more aware of the environmental issues and may often express skepticism on marketing claims about the cost effectiveness of green products (Chen & Cheng, 2023). Another possible reason is that the face-paced nature of information on social media may prevent users from considering thoroughly the economic benefits of green products (Shahbaznezhad et al., 2021).

In addition, there is also a non-significant association between relational value and green purchase attitudes. Consumers typically prioritize perceived values, such as product functions and features, in shaping their green purchase attitudes towards green purchase (Ahmad & Zhang, 2020). Furthermore, when making purchase decisions, consumers tend to consider accessibility of green products and their brand loyalty rather than relational value (Watson et al., 2024). This suggest that relational value derived from social interactions may not be a primary driver of green purchase attitudes, leading to the non-significant results.

Additionally, the non-significant relationship was found between online peer networks and functional value. This may be due to the fact that online peer networks emphasize social interactions and opinions (i.e. relational value) over product functions (i.e. functional value) (Suki & Suki, 2019). Consequently, online peers may share experiences of green products and environmental issues within their network, such that paying less attention on functional aspects of these products.

Second, what are the marketing strategies that companies would use to improve customers' perceived values towards green purchase attitude and their green purchase intentions? The growth of social media along with increased exposure and the increasing influence of online peer networks have significantly impacted customers' green purchase behavior. The findings align with Sun and Wang (2020) that social media platforms have become crucial channels for promoting sustainable living. In addition, consistent with Johnstone and Lindh (2022), online peer networks can foster online communities, providing a platform for all online peer networks to share green experiences, exchange ideas about green purchases, thereby inspiring online members to adopt green purchase behavior. Marketers can use social media to raise awareness about the benefits of green products and provide essential information on green brands, helping customers understand and make more sustainable choices. Companies can also consider implementing social media advertising aimed at potential online peer networks interested in green products (Luo et al., 2020b).

To successfully implement effective digital marketing, businesses can develop actionable strategies using social media platforms. First, companies can generate engaging posts, reels, and videos that highlight environmental benefits of green products so as to attract customers with the informative content. Using storytelling techniques can make this content even more compelling and further enhance customers' engagement in green products. Second, companies can identify their target customers through Search Engine Optimization (SEO) practices. By incorporating relevant keywords into their social media profiles, companies can improve their search rankings. When potential customers search for information related to green products or sustainable consumption, their company profiles could be appeared in the search results, effectively reaching the target audience interested in their products (Erdmann et al.,

2022). Third, collaborating with influencers can be an effective marketing strategy. This approach can be further enhanced by incorporating live streaming that allows influencers to engage directly with their audience and followers (Wang et al., 2024). Influencers can promote the features of green product and answer questions in real-time, creating an interactive experience and encouraging green purchase decision.

Additionally, there are successful case studies of companies that have effectively used storytelling to promote sustainable consumption. One notable example is Patagonia, a company that produce outdoor apparels and it is well accredited due to its acknowledgment of environmentalisms and social justices. This company has demonstrated how storytelling can engage audiences on deeper levels by connecting their values towards environmental issues. Patagonia has successfully shared the story of people and animals living in harmony and launched multiple campaigns related to regenerative agriculture through social media and newsletters (Chow & Li, 2018).

Another successful example is Sustaination, a company in Indonesia that effectively utilizes storytelling on social media platforms such as Instagram to market their green products (Kirana et al., 2022). Sustaination used green storytelling to give wonderful experiences to its customers, promoting local and sustainable products which have social and environmental impacts, with the ultimate goal of making Indonesia a sustainable nation.

4.1. Theoretical implication

This study provides significant theoretical contributions. First, it addresses the research call by Dash et al. (2021) to examine the impact of green digital interaction on customers' green purchase intention, hence expanding the current understanding of

green purchase behavior and perceived values. A research model is developed in the context of social media to explore the role of social media exposure and online peer networks in establishing perceived values and their effects on customers' green purchase behavior. Although green purchase behavior has gained scholarly attention, researchers have not yet explored how green digital interaction – specifically the dual effect of social media exposure and online peer networks – triggers green purchase decisions by evoking perceived values. Recent studies suggest that the effectiveness of social media relies on how frequently customers are exposed to the content regarding green behavior and sustainability, as well as and the engagement with their online peers (Yang et al., 2021b; Gong et al., 2022). These digital interactions enable customers to develop perceived values that ultimately influence their green purchase decisions. Therefore, it is crucial to investigate how social media exposure and online peer networks influence customer perceived values, which in turn affect their green purchase decisions. To address this gap, this study adopts customer value theory to examine the role of perceived values in the relationship between green digital interaction and green purchase intentions.

Second, this study extends customer value theory into the realm of green social media interaction. We introduce four perceived values and demonstrate how different perceived values relate to one another. The current study reveals that emotional value is a central concept that mediates the relationship between green digital interaction and other value dimensions in making green purchase decision. The findings contribute to the literature on green purchase behavior by demonstrating that green digital interaction, a combined effects of social media exposure and online peer networks, exerts an impact on green purchase behavior, especially when the link between emotional value and other perceived values, as well as customers' attitude towards green purchase (Shimul et al., 2022). The extant literature provides empirical evidence regarding the adoption

of both social media exposure and online peer networks that influence perceived values of customers in shaping green purchase decisions. These digital interactions not only enhance environmental awareness but also shape customers' perceived values, which are critical for motivating their green purchase decisions. Thus, the investigation of perceived values is an essential step in understanding how green digital interaction influences customers' perceived values, which in turn, affects their green purchase decisions. Third, from a methodological perspective, this study adopts Partial Least Squares

Structural Equations Modelling (PLS-SEM), a sophisticated analytical technique, allowing for a detailed and accurate analysis of the relationships between green digital interaction and various perceived values. More, PLS-SEM is well-suited for exploring complex models with multiple variables, allowing researchers to assess both direct and indirect relationships simultaneously. In this study, we specifically focus on the mediating effects of emotional value between green digital interaction and other perceived values (Asl & Khoddami, 2022). With the application of PLS, we provide a comprehensive understanding of how emotional connections influence customers' green purchase decision in the context of sustainability, enriching existing research.

This research not only contributes to the existing knowledge of social media use and customer perceived values in relation to green purchase behavior but also offer practical implications for organizations and marketers aiming to implement more effective digital strategies to promote green products.

4.2. *Practical implication*

This study offers significant findings for organizations and marketers seeking to implement more effective strategies to promote green products through social media exposure and online peer networks. Marketers should deliver promotional messages and contents that can enhance customers' emotional values and other perceived values in innovative ways, and in turn, fostering sustainability that benefits the company and the external environment (Lever & Elliot, 2022). For example, using stories and reels that highlight positive environmental impact of using green products can connect deeply with consumers. In addition, the content of these stories and reels can be customized to reflect the values and preferences of local communities, ensuring greater alignment with target audience. Marketers can then effectively utilize social media to drive awareness and encourage the adoption of sustainable practices.

On the other hand, online peer networks play a critical role in encouraging green purchase behaviour. When online peers share their sustainable practices, such as using eco-friendly products or purchasing green products on social media platforms like Facebook, WeChat, Instagram, other online peers are likely to perceive emotional value alongside other perceived values. This sharing fosters a sense of belonging to a community that values sustainability. Furthermore, online peers can engage in online discussion and experience sharing regarding the benefits from purchasing green products on social media platforms (Setianan et al., 2022). Once emotional value is enhanced, functional value and economic values can also develop, shaping individuals' toward green purchase attitude (Joshi et al., 2021). Companies can also consider promoting SDG via social media campaigns. For instance, marketers can create social media campaigns that raise the importance of SDG 3 (Ensure healthy lives and promote

well-being for all ages). By developing engaging hashtags and challenges, they can promote green products and encourage their follower to take action toward achieving SDG 3. Regarding the importance of SDG 12 (Ensure sustainable consumption and production patterns), marketers can promote the concept of 3R (Reuse, recycle, reduce) by collaborating with social media influencers who are passionate about sustainable consumption. These influencers can share their own sustainable consumption behavior on social media, attracting online communities with similar values and beliefs to follow, like and share their content.

4.3. Limitations and directions for future research

Although this study has comprehensive findings, it has some limitations. First, most of our respondents are adults. Sustainable behavior should be started in childhood to consolidate knowledge, habits, and perceived values (Vaipoulou et al., 2021). Further study could consider examining the influence of green digital interaction on green purchase attitude and intention. Second, respondents are from China, and the results would be solely applicable and limited to Asian culture. Further study could investigate respondents in western countries, where there is more about individualism. Multi-group analysis (MGA) can be considerably conducted to compare the difference of green purchase intention in individualistic culture and collectivistic culture (Alavi et al., 2020). Third, the use of self-reported data can be considered to address social desirability bias that can be conducted in a longitudinal study. Finally, we should consider collecting data from the respondents under 18 as the green consumption behavior should be promoted from early childhood.

5. Conclusion

This study examined the potential minimization of the environmental impacts of green consumption. This research revealed that the customer's pro-environmental practices are significantly influenced by the strategies and enhance the connection between social media exposure and online peer networks on customers' green purchase intention (Koay et al., 2023). While the literature has examined CVT of customers, the results further contributed to examine and prove the perceived values are the centered forces to shape customer's purchase intention. As demonstrated in the current study, the underlying mechanism of green digital interaction and CVT on green purchase intention was discussed. The findings had theoretically contributed to the literature on green digital interaction and green purchase intention. Practical implications were provided to organizations and marketers to implement more effective digital strategies to promote green products.

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