

## Purchase intention for circular products among Vietnamese consumers: The impact of perceived factors

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### ABSTRACT

This study examines how perceived factors influence Vietnamese consumers' attitudes and purchase intentions toward circular products, drawing on the Theory of Planned Behavior, the Value-Belief-Norm Theory, and the Perceived Risk Theory. It used quantitative analysis on a survey of 1,285 consumers to assess the scale and test the model using SEM analysis. The results showed that perceived economic value, perceived norm, and perceived behavioral control positively affected attitudes toward circular products, while perceived risk had a negative effect. The study also found that attitudes directly and positively influence the purchase intention of circular products among Vietnamese consumers. These findings help stakeholders develop effective strategies to promote green and circular product consumption among Vietnamese consumers.

**Keywords:** perceived, attitude, purchase intention, circular products, Vietnam

### INTRODUCTION:

The shift to a circular economy model is strongly happening worldwide to tackle issues related to resource depletion, increasing waste, and climate change. The circular economy encourages recycling, reuse, extending product life cycles, and optimizing material flow, replacing the traditional linear model of "exploitation - production - consumption - disposal" (Geissdoerfer et al., 2017). In Vietnam, this approach is highlighted in the Law on Environmental Protection 2020 and the National Strategy for Green Growth, emphasizing the important role of consumer transformation toward circular products. However, the acceptance level and willingness of Vietnamese consumers to buy circular products remain limited, especially given the market conditions and early-stage public awareness of new circular products.

Previous studies have indicated that sustainable product consumption behavior is mainly influenced by perceived factors, including perceived environmental benefits (Toth-Peter et al., 2025), economic value (García-Granero et al., 2020), perceived risks (Hazée et al., 2017), subjective norms (Onel & Mukherjee, 2017), and perceived behavioral control according to the theory of planned behavior (Ajzen, 1991). However, most of these studies focus on green consumption in general, such as eco-friendly products, organic products, or recycling behaviors. In contrast, circular products, characterized by renewable life cycles, recycled ingredients, or remanufacturing processes, are rarely examined comprehensively. According to Camacho-Otero et al. (2018), traditional green consumption determinants cannot be directly applied to circular products, which involve concerns about quality, durability, and use value.

Additionally, much of the international research on circular consumption has been conducted in Europe, where the regulatory framework, sustainability awareness, and recycling systems have developed (Kirchherr et al., 2018). Meanwhile, consumer behavior in emerging markets like Vietnam is affected by lower levels of awareness, a lack of transparency about quality, and limited trust in recycled products that have not been thoroughly studied. Furthermore, research on circular products is very limited, mainly focusing on waste management, reverse logistics, or corporate strategy, rather than consumer behavior. Studies on consumers' intentions to purchase circular products, especially based on cognitive modeling and empirical data, have not been conducted.

This study aimed to examine how perceived factors, including perceived economic value, perceived risk, perceived norm, and perceived behavioral control, influence Vietnamese consumers' attitudes and intentions to purchase circular products. The findings are expected to contribute to the development of sustainable consumption behavior theory and offer valuable policy insights to promote the circular economy in Vietnam.

### 2. Literature Review

#### 2.1. Underlying theories

The research model is based on key theoretical foundations in sustainable consumer behavior, including the Theory of Planned Behavior (TPB), Value-Belief-Norm Theory (VBN), Perceived Risk Theory, and a framework for perceived economic value in sustainable procurement behavior. First, the TPB proposed by Ajzen (1991) is the most common basis for explaining intentional behavior, where attitudes, subjective norms, and perceived behavioral control

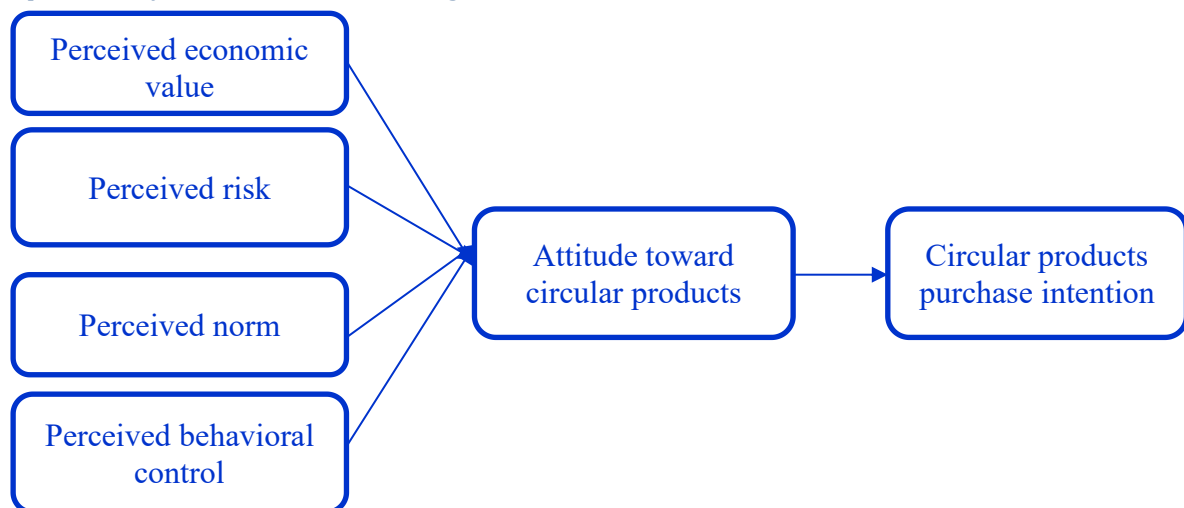
determine behavior. In the context of circular products, TPB is especially relevant because circular consumption requires consumers to evaluate benefits and costs as well as their ability to make purchases (perceived behavioral control). According to TPB, attitudes are central to forming intentions, so perceived environmental benefits or economic value can strongly influence attitudes toward circular products.

Besides TPB, the Value-Belief-Norm Theory introduced by Stern (2000) provides a theoretical foundation for explaining the role of personal values and subjective norms in sustainable behavior. VBN holds that environmentally responsible behavior arises from beliefs about environmental consequences, perceptions of ethical responsibility, and personal norms. This is especially important in the context of circular products, as consumers may view choosing recycled or reused products as an ethical act that benefits the environment. Recent studies have also shown that perceived norms play an important role in predicting attitudes toward product lifecycle behavior (Onel & Mukherjee, 2017).

Additionally, Perceived Risk Theory (Bauer, 1960) explains how consumers evaluate potential risks during the purchasing process. For recycled products, perceived risk is especially important because consumers may worry about the quality, durability, hygiene, or safety of the recycled or remanufactured item. Hazée et al. (2017) point out that perceived risk is a major obstacle to using reusable products and circular services, as information about the recycling process is often unclear and hard to verify.

In addition to risk factors, perceived economic value also plays a key role in sustainable consumer behavior, especially in emerging markets, where cost-benefit factors heavily influence purchasing decisions. According to the theory of consumer value (Zeithaml, 1988), consumers assess value based on the balance between benefits received and costs incurred. With circular products, economic benefits can include lower costs, increased durability, or reusability. Therefore, perceived economic value is considered a factor that fosters positive attitudes and boosts purchasing intentions (García-Granero et al., 2020).

The proposed study model is illustrated in Figure 1 below:



**Figure 1: Research model**

Source: Proposed by the author

## 2.2. Hypothesis development

Perceived economic value is a key factor influencing attitudes towards circular products, especially in emerging markets where purchasing decisions are heavily driven by cost-benefit considerations. According to the theory of consumer value (Zeithaml, 1988), consumers assess a product based on the balance between the costs they pay and the benefits they receive. For circular products, this economic value is demonstrated through a fair price, durability that exceeds expectations, or the ability to be reused, all of which foster positive feelings about the product. Recent research also indicates that when consumers see a circular product as providing financial advantages or long-term value, they are more likely to develop a positive attitude and support sustainable consumption behaviors (García-Granero et al., 2020). Based on the above arguments, the research hypothesis is proposed as follows:

H1: Perceived economic value has a positive effect on attitude toward circular products.

Perceived risk significantly hinders the adoption of circular products. Bauer's (1960) Perceived Risk Theory states that when consumers believe a product may involve risks related to quality, durability, or safety, they develop negative attitudes and are less likely to purchase. For recycled products that are recyclable, reusable, or remanufactured, consumers tend to doubt the hygiene, input materials, or reliability of the recycling process (Hazée et al., 2017). This concern is especially prevalent in the Vietnamese market, where transparency throughout the circular value chain is limited. As a result, risk perception is likely to worsen attitudes toward circular products. Based on the above arguments, the research hypothesis is proposed as follows:

H2: Perceived risk has a negative effect on attitude toward circular products.

Perceived norms originate from the Theory of Planned Behavior (TPB), which reflects social pressure or standards perceived from friends, family, and the community. Ajzen (1991) argues that social norms can indirectly influence behavior through personal attitudes and beliefs. In the context of sustainable consumption, many studies show that when consumers perceive that purchasing circular products is positively viewed by society, they tend to develop more favorable attitudes (Onel & Mukherjee, 2017). In Vietnam, communalism and social group influence are particularly strong, increasing the likelihood that perceived norms significantly shape attitudes toward sustainable consumption behavior. Based on the above arguments, the research hypothesis is proposed as follows:

H3: Perceived norm has a positive effect on attitude toward circular products.

Perceived behavioral control (PBC) is a key part of TPB, showing how much consumers feel they have the ability, resources, and conditions to make a purchase. Ajzen (1991) states that PBC both impacts attitudes and directly influences behavioral intentions. In the context of circular products, PBC relates to access to information, product availability, proper pricing, or consumer understanding of the recycling process. When consumers believe they can identify, evaluate, and purchase a circular product, they develop a more positive attitude toward it. Based on the above arguments, the research hypothesis is proposed as follows:

**Table 1: Measurement scales**

Scale	Sign	Items	Source
Perceived economic value	PEV1	I believe that circular products are reasonably priced.	García-Granero et al. (2020)
	PEV2	I believe that the circular product provides good value for the price.	
	PEV3	Using a circular product helps me save money over time.	
	PEV4	I believe that circular products hold greater economic value than traditional products.	
Perceived risk	PR1	I am worried that the quality of the circulating product is not assured.	Hazée et al. (2017)
	PR2	I'm concerned that the recirculating product isn't as durable as the new one.	
	PR3	I feel uneasy using a recirculating product because of its unknown origin.	
	PR4	I am worried that the recirculating product may not be safe to use.	
Perceived norm	PN1	The people around me support buying circular products.	Wongsaichia et al. (2022)
	PN2	Friends and family expect me to support sustainable products.	
	PN3	I feel social pressure to consume more sustainably.	
	PN4	People important to me value the act of buying circular products.	
Perceived behavioral control	PBC1	I find it easy to access information about circular products.	Zhuang et al. (2021)
	PBC2	I know enough to assess the quality of circular products.	
	PBC3	I feel capable of purchasing a circular product whenever I want.	
	PBC4	The conditions around me make it easy to buy circular products.	
Attitude toward circular	AT1	I believe purchasing circular products is the right choice.	Toth-Peter et al.

H4: Perceived behavioral control has a positive effect on attitude toward circular products.

Attitude is one of the strongest predictors of behavioral intention according to TPB by Ajzen (1991). In the field of sustainable consumption, studies have shown that positive attitudes towards green products, recycled products, or sustainable alternatives greatly influence purchase intentions (Toth-Peter et al., 2025). When consumers perceive circular products as good, useful, reliable, and value-based, they are more likely to turn that belief into actual shopping behavior. In Vietnam, where awareness of the circular economy is growing but application remains limited, attitudes are crucial in shaping buying decisions. Based on the above arguments, the research hypothesis is proposed as follows:

H5: Attitude has a positive effect on circular products purchase intention.

**3. Methodology**

**3.1. Measurement scale**

The measurement scales are adapted from previous studies by Zhuang et al. (2021), Wongsaichia et al. (2022), García-Granero et al. (2020), Hazée et al. (2017), and Toth-Peter et al. (2025). The original English scale was translated into Vietnamese and reviewed with two academic experts and marketing professionals to ensure the meaning is accurately conveyed in the industry. The study used a 5-point Likert scale to design the survey questionnaire. Table 1 shows the scales used in this study.

Scale	Sign	Items	Source
products	AT2	I feel confident about using the recirculating product.	(2025)
	AT3	I believe that the circular product provides many advantages.	
	AT4	I have a positive impression of the circular products.	
Circular products purchase intention	PI1	I'm planning to buy a circular product soon.	Toth-Peter et al. (2025)
	PI2	I am committed to prioritizing circular products when I shop.	
	PI3	I would probably choose a circular product instead of a traditional one.	
	PI4	I would recommend the circulating product to others.	

Source: Compiled by the author

**3.2. Data collection**

The research sample was collected using a non-probabilistic method (convenience sampling), combining face-to-face and online surveys. For the online survey, the questionnaire was created on Google Forms and distributed through popular social networking platforms in Vietnam such as Facebook, Zalo, and community groups interested in the environment and sustainable consumption. For the in-person survey, the author collected data at shopping malls, supermarkets, and retail stores in Hanoi, Ho Chi Minh City, and Da Nang to ensure a diverse range of respondents and enhance the sample's representativeness. The author obtained permission from the managers of shops, supermarkets, and shopping malls to conduct the survey, and customers who agreed to participate in the study were given paper questionnaires.

The survey participants are Vietnamese consumers aged 18 and older who have heard of or been exposed to circular products. This serves as a screening criterion to ensure respondents possess at least basic awareness of the circular product for accurate assessment. With 24 observed variables, the minimum sample size should be 5 times the number of variables (Bollen, 1989), yielding 120 questionnaires. However, the author surveyed a total of 1,500 consumers; 1,320 responses were collected, 35 responses were disqualified due to unsatisfactory quality, and ultimately, 1,285 responses were used for analysis.

**3.3. Data analysis**

Data were analyzed using SPSS 26 and AMOS 24 software. First, the scales were evaluated for reliability using Cronbach's Alpha coefficient, which considers a scale reliable when the coefficient exceeds 0.7 and the observed variables have a Corrected Item-Total Correlation greater than 0.3 (Nunnally & Bernstein, 1994). Next, exploratory factor analysis (EFA) was performed using the Principal Axis Factoring method with Promax rotation, stopping when the Eigenvalue for a factor was greater than 1.0 and the total variance explained exceeded 50% (Anderson & Gerbing, 1988). An observed variable was retained if its factor loading was greater than 0.5 (Hair et al., 2010) and the difference between its largest factor loading and other factor loadings was more than 0.3. Next, confirmatory factor analysis (CFA) is used to evaluate how well the model fits the data and other related values. According

to Anderson and Gerbing (1988), a factor achieves a convergence value if the normalized weights are greater than 0.5 and are statistically significant. Additionally, the two factors will demonstrate differentiation if the correlation coefficient is different from 1 and is statistically significant (Steenkamp & Van Trijp, 1991). The model is considered consistent with the data when the indicators meet certain criteria:

2/df (Chi-square/Degrees of Freedom) is less than 3 (Carmines & McIver, 1981), TLI (Tucker Lewis Index) and CFI (Comparative Fit Index) are greater than 0.9 (Tabachnick & Fidell, 2007), and RMSEA (Root Mean Square Error of Approximation) is less than 0.08 (Hu & Bentler, 2007). Finally, to test the research hypotheses, the SEM (structural equation model) is used, ensuring the model meets the above standards.

**4. Results**

**4.1. Descriptive Statistics**

Statistical results indicate that the study sample has a relatively balanced distribution, with women comprising 56.4% and men 43.6%. This ratio aligns with research showing that women tend to have a greater interest in everyday consumer products and environmental issues. Regarding age groups, the sample mainly consisted of young workers: 40.5% were aged 18-25, 35.2% were 26-35, and 14.7% were 36-45. Older groups (over 45 years old) made up 9.6%. This ratio reflects the current trend of circular consumption, where young people exhibit higher interest and acceptance of sustainable products compared to other age groups. Concerning educational attainment, 8.7% of participants had a high school diploma, 54.6% held a college or university degree, and 36.7% possessed a postgraduate degree. This is an important characteristic indicating that most respondents have a relatively strong understanding base, which helps improve the reliability of circular product reviews because it is a product with complex information that requires high awareness. In terms of occupation, office workers made up the largest group at 40.2%, followed by students at 28.3%, freelancers at 13.7%, small business owners at 9.4%, and other groups such as homemakers, retirees, or the unemployed at 8.4%. This distribution reflects the diversity of income and access to information within the sample and aligns with the research goal of exploring universal consumption behaviors in society. Regarding income, 32.4% of participants earn less than

10 million VND per month, 44.1% earn between 10 and 20 million VND, 18.2% earn between 20 and 30 million VND, and 5.3% earn over 30 million VND per month. This result indicates that the sample includes low, middle, and high-income groups, aiding in analyzing circular consumption behavior within a diverse range of affordability. Regarding awareness and experience with circular products, 72.7% of respondents reported having purchased or used at least one type of circular product before, while 27.3% have never bought one but are aware of circular products through media or social

media. This suggests that awareness of circular products in Vietnam is gradually growing but is still not widespread across the population. Overall, demographic characteristics show significant diversity and representation among Vietnamese consumers, especially among younger, highly educated, and well-informed age groups. This provides a strong foundation for studying consumer behavior related to circular products and supports the reliability of the subsequent results in the research.

**4.2. Scale testing**

The test results for the scales are satisfactory, with Cronbach’s Alpha coefficient above 0.7 and the Corrected Item-Total Correlation above 0.3. The overall results are shown in Table 2.

**Table 2: The results of Cronbach’s Alpha**

Scale	Cronbach’s Alpha	Corrected Item - Total Correlation
Perceived economic value	0.825	0.543 – 0.675
Perceived risk	0.810	0.567 – 0.646
Perceived norm	0.831	0.548 – 0.654
Perceived behavioral control	0.820	0.564 – 0.676
Attitude toward circular products	0.815	0.572 – 0.682
Circular products purchase intention	0.804	0.555 – 0.637

Source: Analysis results from SPSS 26

**4.3. EFA and CFA**

The EFA results with KMO were 0.836, with an eigenvalue of 1.453 at the stopping point and a total variance of 68.568%, extracting six factors that represent the six research concepts. Bartlett’s test is significant at a level of 0.000. Therefore, this research dataset is suitable for performing EFA analysis. The factor rotation matrix indicates that the observed variables are not disturbed and are grouped according to each factor as per the theoretical scale. The factor loading coefficients for the observed variables are greater than 0.5, ensuring the convergent validity of each factor. Additionally, statistical tests were performed to assess overall methodological bias. As a result, the scale demonstrates both convergent and discriminant validity.

The CFA analysis results indicated that the value  $\chi^2/df = 2.362$  ( $p = 0.000$ ), along with TLI = 0.932, CFI = 0.955, GFI = 0.924, and RMSEA = 0.035, suggest that the proposed research model fits the data well. The detailed results are shown in Table 3.

**Table 3: The results of CFA**

Indicator	$\chi^2/df$	GFI	TLI	CFI	RMSEA	p_value	Conclusion
CFA	2.362	0.924	0.932	0.955	0.035	0.000	Accepted

Source: Analysis results from AMOS 24

**4.4. Model and hypothesis testing**

The SEM analysis results indicated that the model fit the market data well, with  $\chi^2/df = 2.578$  and indices GFI = 0.930, TLI = 0.941, CFI = 0.962, and RMSEA = 0.041. The relationships examined are shown in Table 4.

**Table 4: The results of SEM**

Hypothesis	Relationship	Estimate	S.E	C.R	p-value	Conclusion
H1	PEV → AT	0.472	0.047	2.749	0.001	Accepted
H2	PR → AT	-0.127	0.049	3.278	0.005	Accepted
H3	PN → AT	0.388	0.046	2.893	0.010	Accepted
H4	PBC → AT	0.415	0.045	2.981	0.000	Accepted
H5	AT → PI	0.483	0.048	3.072	0.003	Accepted

*Notes: PEV = Perceived economic value, PR = Perceived risk, PN = Perceived norm, PBC = Perceived behavioral control, AT = Attitude toward circular products, PI = Circular products purchase intention*

Source: Analysis results from AMOS 24

The results in Table 4 indicate a significance level below 0.05, so the original research hypotheses are accepted.

**5. Discussion and Implications**

**5.1. Discussion**

First, the results indicate that perceived economic value has the strongest and most positive influence on

attitudes toward circular products ( $\beta = 0.472$ ,  $p = 0.001$ ). This demonstrates that Vietnamese consumers value the economic advantages of choosing circular products, which aligns with the emerging market

context where the cost-benefit factor significantly influences consumption decisions. This finding supports previous conclusions by Zeithaml (1988) and García-Granero et al. (2020), highlighting that economic value is a key driver of sustainable consumption behavior.

In contrast, perceived risk has a statistically significant adverse effect on attitudes toward circular products ( $\beta = -0.127$ ,  $p = 0.005$ ). This result indicates that consumer concerns about the quality, durability, or safety of recycled products, concerns that initially arise from the recyclable or reusable nature of the product, play a role. This finding aligns with Hazée et al. (2017), who demonstrated that perceived risk is a significant barrier to adopting circular consumption patterns. In Vietnam, where information about the remanufacturing process remains unclear, the level of perceived risk is even higher.

Furthermore, the perceived norm also showed a significant positive impact on attitudes toward the circular product ( $\beta = 0.388$ ,  $p = 0.010$ ). It indicates that social pressure, community approval, and the expectations of those around you play a key role in shaping a positive attitude toward the circular product. This finding aligns with the Theory of Planned Behavior (Ajzen, 1991) and research on sustainable consumption within Asian cultures, where community and collectivism strongly influence individual actions (Onel & Mukherjee, 2017). This result suggests that community outreach and social group involvement can encourage positive attitudes in a contagious way.

Furthermore, perceived behavioral control also had a strong influence on attitude ( $\beta = 0.415$ ,  $p = 0.000$ ). This indicates that when consumers feel they possess the qualifications, ability, and resources to purchase circular products, such as easily finding information, convenient access to the point of sale, and securing the right price, they develop a more positive attitude. This finding supports Ajzen's (1991) argument that PBC not only directly impacts intention but also influences consumer perceptions and attitudes.

Finally, attitude was confirmed as an important predictor of circular products purchase intention ( $\beta = 0.483$ ,  $p = 0.003$ ). This result indicates that consumers are more likely to purchase when they have a positive attitude, which aligns with the TPB theoretical framework and previous studies on sustainable consumption behavior (Toth-Peter et al., 2025). This emphasizes the significant role of attitudes in the model, enhancing the explanation of circular consumption behavior in Vietnam.

## **5.2. Implications**

Theoretically, the results of the study make an important contribution to the theoretical foundation of consumer behavior within the circular economy context. First, the study broadens the Theory of Planned Behavior (TPB) by incorporating specific cognitive factors of circular products, such as perceived economic value, perceived risk, and perceived norm. While traditional TPBs mainly focus on attitudes, subjective norms, and perceived behavioral control,

this research shows that adding these cognitive factors can more effectively explain attitudes toward circular products—a form of consumption behavior that is more complex than conventional green consumption. Additionally, this study offers new empirical evidence for research on the circular economy in emerging markets, where consumers are both concerned about sustainability and sensitive to costs. Furthermore, it enhances and broadens the theory of risk perception in the context of circular products, where risks related to quality, durability, or origin are particularly significant. Practically, the study results provide valuable information for stakeholders such as businesses, policymakers, and organizations within Vietnam's sustainable consumer ecosystem. First, the strong influence of perceived economic value indicates that businesses should design pricing strategies and communicate economic benefits more clearly, such as highlighting the long lifespan, lower costs, or reusability of circular products. Marketing campaigns should emphasize financial advantages to persuade cost-sensitive consumers.

Second, perceived risk is a major obstacle, so businesses must reduce it by providing transparent information, offering quality certification, showing the recycling process clearly, and improving real reviews from users. Showing the circular manufacturing process (like a video explaining the recycling steps) can help lower customer doubts.

Third, the results show that perceived norms strongly influence attitudes, reflecting the communal nature of sustainable consumption behavior in Vietnam. Therefore, businesses and environmental organizations should develop community-based communication campaigns, mobilize KOLs/KOCs, social groups, and green consumer communities to create positive social effects. Leveraging social influence can change perceptions and generate widespread momentum within the community.

Finally, perceived behavioral control significantly influences attitudes, indicating that increasing access to circular products can directly affect purchase intentions. Therefore, businesses should expand point-of-sale coverage, provide easily accessible information, simplify the buying process, and develop online sales channels for circular products to help consumers feel capable and confident in their ability to purchase these products. This will promote positive attitudes and behavioral intentions.

## **6. Conclusion**

This study examines the influence of perceptual factors on consumer attitudes and intentions to buy circular products in emerging economies like Vietnam. The results demonstrate the significant role of perceived factors in shaping attitudes toward circular products, thereby increasing purchase intentions. The study highlights the central role of perceived factors in guiding circular consumption behavior and clarifies the psychosocial mechanisms that influence the acceptance of circular products in emerging markets such as Vietnam.

Despite many important contributions, research still has some limitations. Firstly, the method of convenient sampling can lead to sample bias and restrict the ability to generalize findings to the entire Vietnamese population, especially for groups with limited access to information about circular products. Second, the study employed a cross-sectional design, making it impossible to evaluate behavioral changes over time or to establish causal relationships adequately. Third, the data was collected through self-reports, which can introduce social desirability bias, as respondents may tend to present themselves in a more positive light than they actually are. Finally, the research model focuses solely on a few key perceived factors, while other elements such as emotions, environmental beliefs, circular knowledge, or the impact of green marketing have not been considered.

Therefore, future research can explore several directions. First, subsequent studies should use probabilistic sample selection methods or expand data collection to multiple regions to ensure better representation. Second, longitudinal or experimental studies can be conducted to examine the causal relationships between perceptions, attitudes, and intentions over time. Third, expanding the model to include positive psychological variables, such as perceived environmental responsibility, environmental concern, product knowledge, or green trust, could provide a more comprehensive explanation of circular consumption behavior. Additionally, future research may analyze differences based on demographic groups (gender, age, income), green consumption behavior, or understanding of the circular economy. Lastly, in the era of digital transformation, new methods like eye-tracking, machine learning, or social media data analysis can be used to gain deeper insights into how consumers perceive and evaluate circular products.

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