

ORIGINAL ARTICLE

Exploring Ethical Purchase Behavior in Tourism Based on Circular Economy: The Mediating Role of Purchase Intention and the Impact of Awareness, Value, and Attitude

*Yazdan Shirmohammadi¹, Rabeaeh Askari²

1. Associate Professor, Department of Business Management, Payame Noor University, Tehran, Iran

2. Master, Department of Business Management, Islamic Azad University, Tehran, Iran

Correspondence:

Yazdan Shirmohammadi

Email: Y.shirmohamadi@pnu.ac.ir

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ABSTRACT

The circular economy offers a disruptive transition from the traditional linear economy through the lens of resource efficiency, waste reduction, and natural system restoration via closed-loop operations. This research presents evidence of the influence of environmental consciousness, perceived value, and moral disposition on the ethical buying intentions and behavior of European tourists in Tehran in the context of the circular business model (CBM). Furthermore, the role of individual characteristics in the interactions between them is determined. The study used an applied, descriptive-correlational design. Data collection was done through structured questionnaires, and data analysis was done via SPSS²⁶, AMOS²⁵, and PLS-SEM. The results show that awareness, value, and attitude significantly affect purchasing intent, and purchasing intent is a strong predictor of actual behavior. The study adds to the argument for sustainable tourism in the literature by recognizing the psychological aspects of ethical consumption in the context of the circular economy. To this end, it provides practical implications for tourism managers interested in designing and implementing more consumer-centric circular approaches. However, due to the use of a limited, local, and self-reported sample, the results should be interpreted with caution and generalizability should be considered.

KEYWORDS

Environmental Awareness, Perceived Value, Ethical Shopping, Environmental Behavior, Circular Tourism.



«مقاله پژوهشی»

بررسی رفتار خرید اخلاقی در گردشگری مبتنی بر اقتصاد چرخشی: نقش میانجی قصد خرید و تأثیر آگاهی، ارزش و نگرش

*یزدان شیرمحمدی^۱، رابعه عسگری^۲

چکیده

اقتصاد چرخشی یک پارادایم اقتصادی جایگزین معرفی می‌کند که بر استفاده کارآمد از منابع و کاهش ضایعات از طریق نظام‌های چرخه‌ای بسته تأکید دارد. برخلاف رویکرد خطی سنتی، هدف آن باززنده‌سازی سامانه‌های طبیعی و حفظ ارزش محصولات برای طولانی‌ترین مدت ممکن است. این مطالعه، تأثیر آگاهی زیست‌محیطی، ارزش ادراک‌شده و نگرش‌های اخلاقی را بر نیت خرید و رفتار خرید گردشگران اروپایی در تهران، در چارچوب مدل‌های کسب‌وکار چرخشی (CBM)، بررسی می‌کند. همچنین نقش تعدیل‌گر ویژگی‌های فردی مورد تحلیل قرار گرفته است. این پژوهش از نوع کاربردی و با رویکرد توصیفی-همبستگی انجام شده است. داده‌ها از طریق پرسش‌نامه‌های ساخت‌یافته گردآوری و با استفاده از نرم‌افزارها SPSS²⁶ و Amuse²⁵ و مدل‌یابی معادلات ساختاری حداقل مربعات جزئی تحلیل شده‌اند. یافته‌ها نشان می‌دهد که آگاهی، ادراک ارزش و نگرش، تأثیر قابل‌توجهی بر قصد خرید اخلاقی دارند که خود به‌صورت معناداری رفتار خرید را پیش‌بینی می‌کند. این نتایج بینش‌های ارزشمندی برای دانشگاهیان و فعالان صنعت گردشگری در راستای ترویج رفتار مصرف‌کننده پایدار از طریق راهبردهای چرخشی ارائه می‌دهد. همچنین مطالعه حاضر یافته‌های خود را با ادبیات موجود مقایسه کرده و بر اهمیت نظری و کاربردی آن‌ها تأکید می‌ورزد.

واژه‌های کلیدی

آگاهی محیط‌زیستی، ارزش ادراک‌شده، خرید اخلاقی، محیط‌زیست، گردشگری چرخشی.

۱. دانشیار، گروه مدیریت بازرگانی، دانشگاه پیام

نور، تهران، ایران

۲. کارشناسی ارشد، گروه مدیریت بازرگانی،

دانشگاه آزاد اسلامی، تهران، ایران

نویسنده مسئول:

یزدان شیرمحمدی

Y.shirmohamadi@pnu.ac.ir

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Introduction

The growing scarcity of natural resources, combined with rapid global population growth and the inherent inefficiencies of the linear economic model—which follows a “take–make–dispose” pattern—have placed unprecedented pressure on ecological systems. This unsustainable trajectory has prompted environmental organizations, researchers, and conscious consumers to advocate for systemic alternatives that can mitigate the accelerating depletion of both material and energy resources (Broken et al., 2017). The circular economy (CE), inspired by natural ecosystems in which waste does not exist and every output feeds into another process, has emerged as a compelling response. CE emphasizes resource efficiency, waste minimization, and continuous value creation. Central to its implementation are circular business models (CBMs), which require rethinking how value is produced, consumed, and regenerated. Importantly, the successful adoption of CBMs depends not only on institutional innovation but also on the active engagement of all actors—particularly consumers—within the value ecosystem. In the tourism sector, the predominance of mass tourism, driven largely by short-term economic incentives and the sector’s seasonal nature, has amplified environmental and social burdens. Recognizing these consequences, many European tourism stakeholders—including service providers and industry leaders—have acknowledged the urgent need for more sustainable approaches. This has led to increasing interest in circular tourism, a model that incorporates CE principles into tourism by encouraging responsible practices across the value chain, from hosts and tour operators to travelers and suppliers (Casas et al., 2021).

The escalating depletion of natural resources, driven by the inefficiencies of the linear economic model and unsustainable consumption patterns, has intensified global interest in alternative systems such as the circular economy (Kirchherr et al., 2018; Geissdoerfer et al., 2017). Within this context, circular tourism has emerged as a promising extension of circular economy principles, aiming to integrate waste reduction, resource efficiency, and value regeneration across the

tourism value chain (Casas et al., 2021). Yet, despite growing theoretical discourse, there remains a notable gap in empirical research—especially in non-European urban settings where sustainable practices are still emerging. Tehran, as a rapidly developing metropolitan city facing substantial environmental challenges—including air pollution, waste mismanagement, and overconsumption of energy—offers a compelling context for investigating sustainable tourism behaviors (Rahmati Kachomesghali et al., 2024). Exploring how environmentally aware tourists behave in such an environment can provide valuable insights for operationalizing circular tourism strategies in emerging destinations. European tourists have been selected as the focal population for this study due to their demonstrated environmental awareness and ethical consumption patterns. Numerous studies have highlighted that European travelers are more likely to engage in eco-conscious behaviors, influenced by long-standing environmental education, cultural norms, and stringent policy frameworks in their countries of origin (European Commission, 2024). Recent surveys also show an increasing inclination among European tourists to purchase green products, support ethically driven brands, and prioritize sustainability in their travel decisions (Nekmahmud et al., 2024). This research draws on a conceptual framework that focuses on specific environmental behavior dimensions, including: environmental awareness, ethical product awareness, brand awareness, and perceived value (social, functional, and epistemic). These constructs are examined in relation to tourists’ attitudes—such as willingness to pay more for green products and support circular business models—and their eventual green purchase intentions. Furthermore, personal characteristics such as age, income, and education level are considered as moderating factors within the model. By focusing on a well-defined group of environmentally engaged tourists in a distinct urban context, this study aims to contribute to the theoretical and practical understanding of circular tourism. It offers data-driven insights to help urban tourism stakeholders implement sustainable practices tailored to both the local environment

and evolving consumer expectations.

In recent years, circular business models (CBMs) have received growing attention as practical frameworks for operationalizing the principles of the circular economy (CE). Moving beyond the extract-produce-dispose logic of linear systems, CBMs aim to extend product lifecycles, reduce waste, and foster sustainable value creation. However, their implementation is not solely a technical or organizational challenge—it fundamentally depends on consumer engagement. Scholars such as Mentink (2017) emphasize that the transition to circularity cannot succeed without active participation from customers, who must perceive value, trust in the process, and adapt their behaviors accordingly. Urbinati et al. (2017) argue that this transition involves deeper changes in the interaction dynamics between businesses and consumers. Companies must rethink how they communicate, co-create, and sustain relationships in a circular context. Moreover, successful adoption of circular solutions requires more than environmental awareness—it hinges on how customers evaluate value, form attitudes, and make ethical consumption choices. In this regard, factors such as environmental awareness, perceived value (social, functional, cognitive), attitude (e.g., willingness to pay a premium), and ethical purchase intention have been identified as core drivers of circular consumption. These variables not only influence the intention to adopt but also shape actual behaviors. Additionally, individual traits, including cultural orientation, lifestyle, and previous experience, play a moderating role in how these factors translate into decision-making.

While existing studies have extensively explored these dynamics in Western and European markets, there remains a notable gap in understanding how environmentally conscious tourists behave in non-European urban destinations. This study addresses that gap by focusing on European tourists visiting Tehran—a context where cultural, infrastructural, and behavioral dimensions of circularity intersect uniquely. Given their typically higher environmental awareness and stronger ethical consumption norms, European tourists provide a valuable lens through which

to examine the psychological and behavioral mechanisms underpinning circular tourism. By integrating key constructs from consumer behavior literature with a context-specific application of CBMs in tourism, this study aims to illuminate how awareness, value perception, and attitude influence purchase intention and actual ethical behavior, moderated by personal traits. The resulting insights are intended to inform tourism managers and policymakers in shaping more effective, visitor-responsive circular tourism. In domestic studies, several researchers have explored the role of innovation, digital technologies, and individual factors in shaping consumer behavior in service and tourism sectors (Shirmohammadi & Bostanmanesh, 2021). Some of these studies emphasize the significance of personal strategies and individual mindsets in influencing behavioral decisions within tourism activities (Shirmohammadi & Choobdar, 2023).

Theoretical Framework:

The conceptual framework utilized in this study draws upon the systematic model proposed by Mostaghel & Chirumalla (2021) which synthesized existing literature on circular business models (CBMs) and ethical consumer behavior. To define the study's analytical scope, an initial exploratory search was conducted—focusing on key terms such as “purchase intention” and “circular economy”—which yielded 242 documents in the SCOPUS database. To further refine the review toward more applicable consumer contexts, the keyword “retail” was added, resulting in a filtered set of 61 articles. A title-level review showed that fewer than ten of these works directly addressed core concepts such as circularity, CBMs, or CE implementation. Therefore, using snowball sampling from seminal studies in the green economy literature, 14 high-quality scholarly articles were selected for in-depth analysis. In the next phase, key variables were systematically extracted and compiled into a structured database. Each variable was accompanied by operational definitions and measurement items, organized under broader conceptual dimensions. For example, sub-variables such as environmental awareness, ethical product knowledge, and

brand familiarity were grouped under the broader construct of “awareness.” This process enabled the categorization of related constructs into five primary domains: awareness, perceived value, attitude, purchase intention, and purchase behavior. To establish a coherent theoretical model, these grouped variables were conceptually linked through logical reasoning and grounded in previous empirical findings. The resulting framework posits directional relationships among the five main constructs and outlines nine research propositions that explain how ethical purchase behavior toward CBMs may unfold over time. Notably, a temporal element was introduced using two analytical time points (t_0 and t_1), reflecting the progression from attitudinal and cognitive drivers to actual behavior. While the foundation of this model was informed by prior research conducted largely in retail contexts, its structure and constructs have been adapted in the current study to examine European tourists visiting Tehran. This adaptation reflects both contextual differences and the need to explore circular consumption behaviors in under-researched tourism destinations. The following section elaborates on each dimension of the model and its relevance to sustainable tourist behavior within the scope of circular tourism.

Ethical Purchase Intention

Ethical shopping intention reflects a consumer's conscious decision to choose products and services that align with moral, environmental, or social values. Rather than being a spontaneous act, this form of intention is rooted in the desire to minimize negative impacts on people, ecosystems, and future generations (Mostaghel, R., & Chirumalla, 2021). The growing prominence of ethical consumerism has prompted scholars to explore not just what individuals buy, but why they are motivated to support ethical options in the marketplace. Research has consistently shown that ethical intentions are powerful predictors of actual behavior, particularly when supported by a strong internal value system and perceived consumer efficacy. As Sun (2020) highlights, the formation of ethical purchase intention is a critical step in moral decision-making, acting as a cognitive bridge between values and behavior. Understanding how these intentions are shaped—and under what conditions they

translate into action—is therefore essential for promoting sustainable and responsible consumption patterns. In the context of this study, ethical shopping intention is considered a key mediating variable that links awareness, perceived value, and attitude with actual behavior. By examining how this intention manifests among European tourists engaging with circular tourism models, the research aims to uncover the psychological mechanisms underlying sustainable travel choices in an emerging urban context.

Attitude to Ethical Purchase Intention

Attitudes are psychological constructs comprising a combination of beliefs and emotions that shape an individual's perspective toward people, objects, and groups, influencing them positively or negatively. They serve as summaries of one's evaluations of various elements and subsequently influence or predict future behaviors and actions. Understanding attitudes is fundamental to analyzing human behavior, as they directly impact actions; thus, altering attitudes could potentially predict or even regulate behavior (Ajzen, 2005). Dual-process theories, such as the Elaboration Likelihood Model (ELM) and the Heuristic-Systematic Model (HSM), have been introduced to explain the cognitive mechanisms shaping human attitudes. These models suggest that attitude formation is governed by both rational (systematic) and experiential (heuristic) processing systems (Petty & Cacioppo, 1986; Chaiken et al., 1989). Within the framework of circular business models (CBMs), rational processing is driven by cognitive assessments of cost-benefit trade-offs and ethical considerations, while experiential processing is rooted in past experiences, often guided by affective responses or heuristic judgments (Fu et al., 2025). Consequently, two primary precursors of consumer attitudes emerge: perceived value, derived from belief systems, and awareness, shaped by knowledge and personal experience (Ajzen, 2005).

Perceived value influences ethical purchase intention

Marketing professionals continually strive to shape consumers' perceptions of product value by emphasizing distinctive attributes that set their offerings apart from competitors. This

perceived value often manifests in the price consumers are willing to pay, influenced not only by tangible features but also by emotional and symbolic associations. As highlighted by Shirmohammadi et al. (2020), innovations in product and marketing approaches not only support market expansion but also encourage more reflective and value-driven consumer behavior, especially when perceived value transcends utilitarian benefit. Recent studies further confirm that strategic marketing practices aimed at enhancing perceived value can influence ethical purchasing decisions and brand loyalty (Husain et al., 2022). In practice, marketers elevate a brand's perceived value by crafting narratives that amplify its emotional and social resonance. Consequently, pricing strategies often reflect the consumer's perception of symbolic or ethical worth rather than just production cost. This is particularly relevant for products marketed as sustainable or ethical, where emotional and cognitive values strongly impact buying behavior.

Ethical Consumption Consciousness

Consciousness refers to the capacity to recognize, comprehend, and acquire knowledge from various events and experiences. Chalmers characterizes the “hard problem of consciousness” as the challenge of understanding subjective experience. In his view, while thinking and perception involve information processing, consciousness extends beyond this to include a subjective dimension. Similarly, Nagel emphasizes that awareness possesses a unique qualitative aspect—often referred to as the subjective experience. This includes the distinct sensations we perceive, such as the colors we see in visual experiences or the scents we detect in olfactory experiences. These sensory experiences vary widely, ranging from purely mental constructs, such as imagined faces, to physical sensations like pain and pleasure.

The use of virtual reality for interactive digital experiences has also been analyzed in relation to tourist engagement and post-pandemic travel decision-making (Shirmohammadi et al., 2021). Despite their differences, what unifies these states is that each generates a specific subjective quality or

feeling. In some cases, an entity may be considered “aware” if it can respond to environmental stimuli, focus on relevant information, or use that data to regulate behavior. In the context of consumer behavior, awareness and knowledge play a critical role in shaping attitudes. More specifically, factors such as environmental awareness, brand recognition, and knowledge of ethical products influence consumer perspectives on sustainable goods and services. For instance, a study in Stockholm, Sweden, revealed that consumers were more inclined to pay for access to CO₂-reducing washing machines rather than purchasing them outright, reflecting their awareness and preference for sustainable consumption models.

Ethical Purchase Intention

A behavior is considered ethical when it leads to more desirable and positive outcomes than alternative behaviors, while minimizing adverse consequences. In this context, ethical consumption refers to the conscious and voluntary decision by consumers to purchase goods and services that reflect their values and cause minimal harm to humans, animals, and the environment (Shaw & Shiu, 2003). Tourists, as temporary consumers, play a vital role in shaping the sustainability of destinations. Their actions can lead to either the conservation or degradation of natural and social environments. However, encouraging responsible behavior among tourists remains challenging due to the leisure-oriented nature of travel, which often detaches individuals from routine norms and responsibilities (Lee & Moscardo, 2005). Additionally, forecasting the long-term consequences of tourist behavior can be complex due to variability in environmental and cultural sensitivities. Environmentally responsible behavior at tourism destinations can be categorized into three main types: (1) actions that preserve nature and reduce ecological disruption, (2) avoidance of environmentally degraded areas, and (3) efforts to minimize ecological footprints during travel (Lee & Moscardo, 2005). A key construct in understanding such behavior is behavioral intention, which serves as an essential predictor of actual behavior. It mediates the relationship

between attitude and action and is commonly used in tourism and consumer research as a surrogate variable for actual decision-making. However, a consistent challenge in this area is the intention-behavior gap, where stated intentions do not always translate into observable actions. Various theoretical models and methodologies have been introduced to address this gap, offering promising solutions to improve the prediction of consumer behavior.

Literature Review

Recent scholarship has increasingly focused on the psychological, environmental, and socio-cultural factors influencing ethical and sustainable consumer behavior, particularly in the context of circular tourism. Cultural events can shape tourists' perceptions and ethical choices (Shirmohammadi et al., 2019). Anser et al. (2024) examined the dynamics of human-environment interaction in China, demonstrating that renewable energy usage and sustainable consumption patterns significantly reduce carbon emissions. Their findings underscore the importance of environmental awareness as a driver of behavioral change. In the tourism domain, Barcellos-Paula, Castro-Rezende, and Gil-Lafuente (2024) applied the Affinities Theory to investigate how tourists' emotional and cognitive bonds with destinations—such as Ljubljana—can foster pro-environmental behaviors and long-term sustainability in tourism management. Chen et al. (2024) explored the determinants of citizens' attitudes toward marine litter control in Singapore, revealing that environmental policy acceptance is strongly shaped by personal values, risk perception, and ecological responsibility—all of which are relevant to tourists' ethical consumption decisions. Focusing on the hospitality industry, Huyen, Hong, and Khuong (2025) found that green innovation practices significantly influence guests' intention to return, primarily through the mediating roles of green image, positive mood, and overall satisfaction. According to Khuong et al. (2025), green innovation practices significantly influence guests' intention to return, primarily through the mediating roles of green image, positive mood, and overall satisfaction. Li et al. (2024) utilized the extended Theory of Planned Behavior (TPB) to explain residents' donation behavior in the

adaptive reuse of cultural heritage, demonstrating how perceived behavioral control, social norms, and environmental ethics collectively shape sustainable actions—paralleling similar mechanisms in tourist purchase intentions. In a luxury consumption context, Lim et al. (2023) found that wealthy consumers' willingness to pay premium prices for sustainable luxury goods is strongly associated with environmental consciousness, perceived value, and personal identity alignment—suggesting that ethical consumption transcends price sensitivity when deeper values are engaged. Further, a bibliometric analysis by Mamta and Prakash (2024) revealed expanding academic interest in green consumerism, especially in the cosmetics sector, highlighting broader shifts in consumer behavior that increasingly prioritize sustainability, ethics, and long-term value. Altogether, these studies form a cohesive body of evidence indicating that awareness, perceived value, and ethical attitudes are foundational elements that influence intention and behavior in sustainable consumption—thereby offering a strong conceptual base for modeling ethical purchase behavior within circular tourism strategies.

Recent research has increasingly examined the psychological and contextual drivers of ethical and sustainable consumer behavior, particularly within the framework of circular and green practices. The role of women in entrepreneurial activities and rural sustainability has also been examined, indirectly reflecting on ethical responsibility and social awareness (Shirmohammadi & Mavouni, 2021). Other research has investigated the impact of emerging technologies, such as augmented reality, in enhancing tourist experiences and affecting their preferences and behaviors (Shirmohammadi & Mohammadi, 2022).

Anser et al. (2024) emphasized the role of environmental awareness and sustainable consumption in reducing carbon emissions in China, linking systemic behavior change to ecological consciousness. Complementing this, Barcellos-Paula et al. (2024) applied the Affinities Theory to explore how tourists' emotional attachment to destinations, such as Ljubljana, fosters responsible environmental behavior. In Singapore, Chen et al. (2024)

found that policy acceptance regarding marine litter control is driven by individual responsibility and perceived environmental risk—factors also relevant to sustainable tourism behavior. Similarly, Huyen, Hong, and Hoang (2025) demonstrated that green practices in hospitality build consumer trust and green image, ultimately reinforcing sustainable revisit intentions. Behavioral frameworks have been effectively applied in other domains as well. For example, Li et al. (2024) used an extended Theory of Planned Behavior to show that ethical norms, perceived control, and social pressure influence donation behavior for cultural heritage reuse—insights that are transferable to tourist purchasing decisions. Paul, Modi, and Patel (2016) also confirmed the usefulness of TPB and the Theory of Reasoned Action in predicting green product consumption, reinforcing the mediating role of intention in ethical behavior. In luxury markets, Lim et al. (2023) revealed that affluent consumers are willing to pay premium prices for sustainable goods when such purchases align with their values and identity. Mamta and Prakash (2024) supported this trend with a bibliometric analysis showing growing academic and consumer interest in green buying, especially in the cosmetics industry.

Interestingly, sustainability considerations have even extended to death care, as Nosi et al. (2024) examined green funerals and how technological and societal shifts are reshaping consumer attitudes toward eco-friendly end-of-life practices. Their study illustrates the expanding scope of ethical consumption across life domains. Together, these works highlight the central roles of awareness, perceived value, ethical attitudes, and intention in shaping sustainable behaviors. They offer a strong theoretical and empirical foundation for analyzing ethical purchase behavior within circular tourism. Considering the emerging nature of this research topic both within the country and internationally, a review of available scientific sources, peer-reviewed articles, academic books, and reliable online databases indicates that prior studies in this

specific area are still relatively scarce. Nonetheless, a number of important works have contributed meaningfully to the development of the present study. For instance, Casas, Keller, and Berkner (2021), in their article *Understanding Rotation in Tourism*, explored how the circular economy model has been applied within the tourism sector. Their research provides both a clear definition of circular tourism and a discussion of its practical challenges, supplemented by real-world examples of circular strategies in action. A notable contribution of their study is the emphasis placed on the role of tourists—an aspect that is often overlooked in the broader literature. According to the authors, understanding and shaping tourist behavior is key to successfully implementing circular approaches in tourism. Mostaghel and Chirumalla (2021) examined how consumer behavior contributes to the effectiveness of circular business strategies, with a particular focus on the retail industry. The study employed a structured five-step methodology, beginning with the definition of research objectives, followed by identifying relevant literature, selecting and evaluating sources, conducting analytical synthesis, and finally reporting the key findings. Their research sheds light on the various factors that shape consumers' purchasing intentions and behaviors within the context of circular business models.

By doing so, they introduce a theoretical framework that accounts for different aspects of consumer engagement, offering a nuanced understanding of how individuals interact with and support circular retail practices. Taken together, these findings offer meaningful insights into how circular economy principles are being integrated not only in tourism but also in related sectors such as retail. At the same time, they draw attention to ongoing gaps in our understanding of consumer behavior—particularly in circular contexts—highlighting the relevance and necessity of further research in this field, including the present study. Figure 1 shows Conceptual Model of Research.

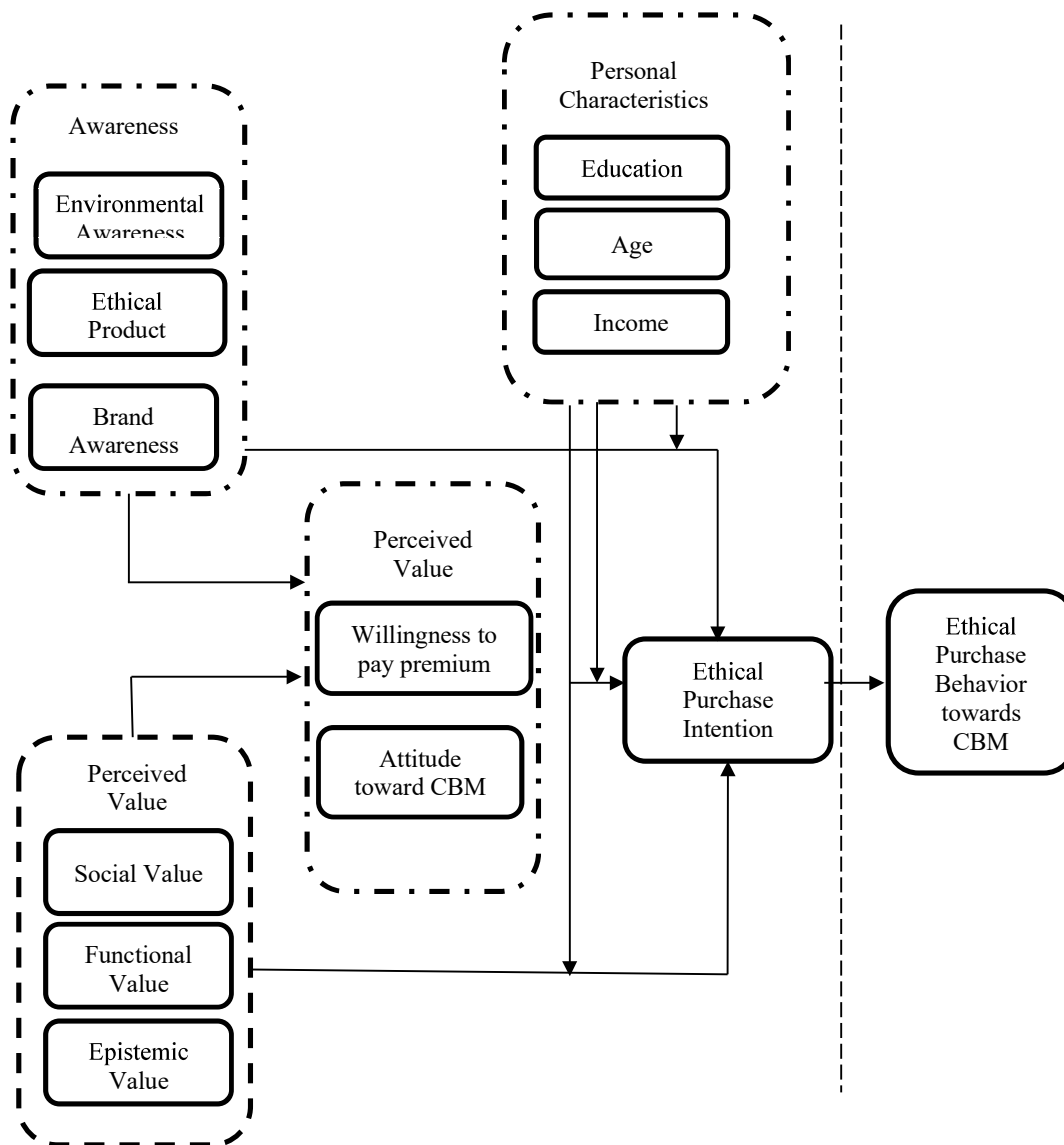


Figure 1. Conceptual Model of Research (Mostaghel & Chirumalla, 2021)

Research Methodology

This applied research employs a descriptive-correlational design to investigate how awareness and perceived value influence ethical shopping behavior within the context of circular business models (CBMs). Ethical attitudes and purchase intentions are treated as mediating variables, while tourists' personal characteristics are considered potential moderating variables. Data were collected from European tourists visiting Tehran during the winter of 2022–2023 and the spring of 2023. Using a field-based approach, structured

questionnaires were distributed via travel agencies to individuals who had recently toured various attractions in the city. To determine the appropriate sample size, the guideline proposed by Gorsuch (1983)—recommending at least five participants per variable—was followed. In anticipation of potential data loss, additional considerations were drawn from Julious (2005) and Cho, Shao, and Wang (2008). Accordingly, 300 questionnaires were distributed using a non-random convenience sampling method. After screening and validating the responses, a total of 285 completed questionnaires were deemed suitable for analysis.

The structured questionnaire was carefully developed based on established literature and consisted of five main sections: awareness (4 items), assessing environmental consciousness, ethical product knowledge, and brand recognition; perceived value (4 items), evaluating social, functional, and cognitive value perceptions; ethical attitude (5 items), measuring willingness to pay a premium and overall perception of circular business models; ethical purchase intention (4 items), determining the intention to engage in ethical purchasing behaviors; and ethical purchase behavior (3 items), observing actual purchasing actions aligned with ethical considerations. Each item was measured using a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Content validity was established through expert evaluation by five specialists in marketing and consumer behavior, while construct validity was confirmed using Confirmatory Factor Analysis (CFA), with all factor loadings exceeding above the threshold of 0.7. Reliability was assessed using Cronbach's alpha, with coefficients ranging from 0.75 to 0.85 across all constructs, indicating a satisfactory level of internal consistency. To enhance contextual relevance, additional data were collected regarding the tourist sites visited by respondents, which included Golestan Palace, Milad Tower, the Grand Bazaar of Tehran, the National Museum of Iran, Mellat Park, the Sa'dabad Complex, and the Nature (Tabiat) Bridge.

Collected data were initially entered into Microsoft Excel for preliminary processing. Subsequent analyses were performed using SPSS₂₆ and Stata software for descriptive and inferential statistics. To test the research hypotheses and assess model fit, Structural Equation Modeling (SEM) was conducted using the Partial Least Squares (Amuse₂₅) method. The PLS approach was selected due to its advantages, including minimal restrictions, suitability for small sample sizes, and no requirement for normally distributed data, making it an appropriate choice for this study. This comprehensive methodology and questionnaire design address the reviewers' comments by providing detailed information on the research process, instrument development,

validation procedures, and data analysis techniques.

This study falls within the category of applied research, as it aims to address practical issues and contribute to real-world applications. Based on its nature and data collection method, it is classified as a descriptive-correlational study. The research is limited in terms of data collection, with the primary objective being to describe the investigated conditions and phenomena while also examining the relationships between research variables. In this study, the impact of awareness and perceived value on ethical shopping behavior is analyzed in the context of circular business, with ethical shopping attitudes and intentions serving as mediating factors. Additionally, tourists' personal characteristics are considered moderating variables. Since this study employs a field research approach, data were collected from European tourists visiting Tehran, using travel agencies as intermediaries. The survey was conducted through questionnaires during the winter of 2022–2023 and the spring of 2023. The study population consisted of European tourists who had visited tourist sites in Tehran in recent years. To determine the appropriate sample size, the recommendation of Gorsuch (1983) was followed, suggesting a minimum of five respondents per variable. Additionally, to minimize potential sample loss, the guidelines provided by Julious (2005) and Cho, Shao, and Wang (2008) were taken into account. As a result, 300 questionnaires were distributed using a non-random convenience sampling method, and after screening and data validation, 285 completed questionnaires were deemed suitable for statistical analysis. To test the research hypotheses and assess model fit, inferential statistical analyses were performed using SPSS and Stata software, while Structural Equation Modeling (SEM) was conducted using the Partial Least Squares (PLS) method. The collected questionnaire data were first coded and entered into Excel for preliminary processing before being analyzed with SPSS and Stata to ensure validity and reliability. PLS is a variance-based Structural Equation Modeling approach that offers several advantages over traditional SEM techniques. It imposes fewer restrictions, is less sensitive to

sample size, and does not require the data to be normally distributed, making it an appropriate choice for this study.

Research Findings

To gain a better understanding of the respondents, their demographic variables—such as gender, educational level, and income—are presented in Table 1.

Table 1. Descriptive Statistics of the Study

Variable	Levels and floors	Frequency	Percent
Gender	Woman	206	53.6
	Man	178	46.4
Educational level	Bachelor's degree and below	194	47.9
	Master's degree and above	200	52.1
Income	Less than 20 million	203	52.9
	More than 20 million	182	47.3

In this study, the KMO index was found to be greater than 0.6. In fact, the closer the index

value is to 1, the more appropriate the data for the analysis.

Table 2. Questionnaire KMO-Bartlett reliability Test

0.938	KMO Test	
4485.601	Normalized Chi-Square	Bartlett test
91	Degrees of freedom	
0.000	Significance level (sig)	

The purpose of factor analysis is to test hypotheses about latent traits that underlie a set of measured variables. Reliability refers to consistency across time (test-retest reliability), across items (internal consistency), and across raters (interrater reliability). Validity refers to the extent to which the scores represent the variable they are intended to measure.

To assess content validity and reliability, expert judgment was applied, and SPSS software was used to calculate the necessary indices. Cronbach's alpha exceeded 0.70 for all constructs, indicating satisfactory internal consistency. The results of the Confirmatory Factor Analysis (CFA) are presented in Table 3.

Table 3. Confirmatory Factor Analysis. Validity and Reliability Indexes

Variables	Items	Loading	Cronbach's Alpha	Structural Validity (CR), over 60%	Average Variance Extracted (AVE), Over 5%
Awareness	AW1	0.681	0.926	0.854	0.581
	AW2	0.861			
	AW3	0.751			
Perceived Value	PV1	0.820	0.946	0.892	0.723
	PV2	0.907			
	PV3	0.875			
Attitude	AT1	0.729	0.891	0.821	0.616
	AT2	0.855			
Intention toward CBM	IB1	0.918	0.859	0.873	0.613
	IB2	0.899			
	IB3	0.634			
Behavior toward CBM	BB1	0.918	0.949	0.916	0.633
	BB2	0.883			
	BB3	0.903			

In order to determine the validity and reliability of the model measurement section, several indicators were used to measure the

suitability of the model, because the analysis of the model measurement section before testing the structural part of the model is necessary to

ensure the indicators that have been used in subsequent analysis. Table (4) shows the model fit indices.

Table 4. Model Fit Indices

Fit indices	Index name	Allowance amount	Obtained values
Absolute-fit	CMIN/DF(Normed Chi-square Index)	5<	2.642
	RMSEA (Root Mean Squared Error of Approximation)	0.08<	0.065
	GFI (Goodness of Fit Index)	0.70>	0.941
Incremental-fit index	AGFI (Adjusted Goodness of Fit Index)	0.70>	0.907
	CFI (Comparative Fit Index)	0.70>	0.975
	NFI (Normed Fit Index)	0.70>	0.961
	TLI (Non- Normed Fit Index)	0.70>	0.966

As mentioned before, the present research is based on 4 hypotheses. In order to examine these hypotheses, the path analysis method was used in AMOS software. The significance levels for testing these hypotheses are given in

Table 5 and Fig 3. The basis for confirming the hypotheses is that the significance level (p-value) for them is smaller than 0.05, and the path coefficient is also positive

Table 5. The Study of Research Hypotheses

Hypotheses	Path	Estimate	P	Results
1	Attitude <--- Awareness	0.308	***	Confirmation
2	Attitude <--- Perceived Value	0.680	***	Confirmation
3	Intention toward CBM <--- Attitude	0.949	***	Confirmation
4	Behavior toward CBM <--- Intention toward CBM	0.747	***	Confirmation

Table 6. The Study of Research Hypotheses Gender

Hypotheses	Path	Estimate Woman	Estimate Man	P	Results
1	Attitude <--- Awareness	0.248	0.442	***	Confirmation
2	Attitude <--- Perceived Value	0.979	0.872	***	Confirmation
3	Intention toward CBM <--- Attitude	0.800	0.669	***	Confirmation
4	Behavior toward CBM <--- Intention toward CBM	0.831	0.767	***	Confirmation

Table 7. The Study of Research Hypotheses Educational level

Hypotheses	Path	Estimate Bachelor's degree and below	Estimate Master's degree and above	P	Results
1	Attitude <--- Awareness	0.410	0.324	***	Confirmation
2	Attitude <--- Perceived Value	0.929	0.937	***	Confirmation
3	Intention toward CBM <--- Attitude	0.727	0.741	***	Confirmation
4	Behavior toward CBM <--- Intention toward CBM	0.837	0.771	***	Confirmation

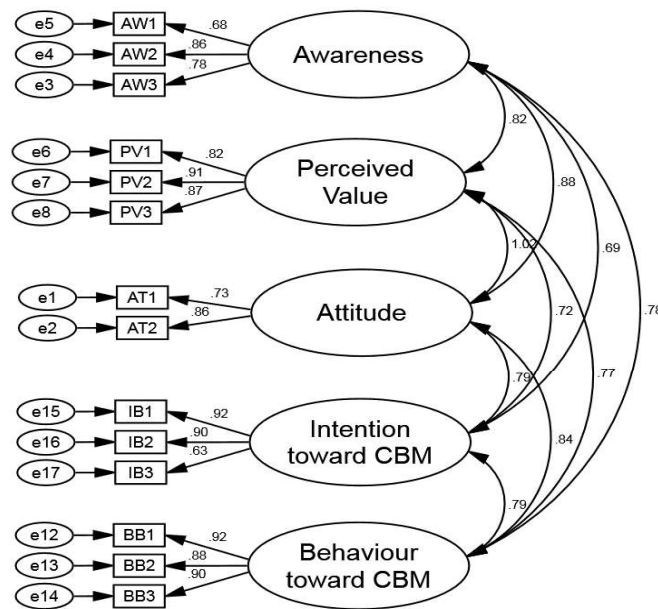


Figure 2. Fit Indices Test of the Conceptual Model

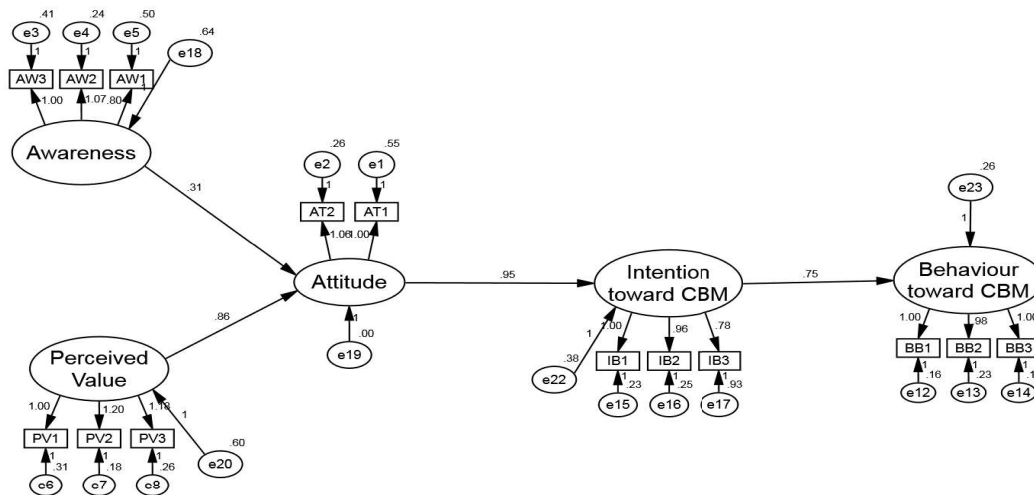


Figure 3. Research Hypotheses Test

Table 8. The Study of Research Hypotheses Income

				Estimate Less than 20 million	Estimate More than 20 million	P	Results
Hypotheses		Path					
1	Attitude	<---	Awareness	0.250	0.439	***	Confirmation
2	Attitude	<---	Perceived Value	0.997	0.849	***	Confirmation
3	Intention toward CBM	<---	Attitude	0.714	0.760	***	Confirmation
4	Behavior toward CBM	<---	Intention toward CBM	0.817	0.780	***	Confirmation

Conclusion

The current research confirms the pivotal role of awareness in shaping tourists' purchase intentions within the framework of circular business models. This is in line with Ajzen's foundational theory, which posits that awareness and perceived behavioral control directly affect intention formation. The relevance of this relationship has also been highlighted by Anser et al. (2024), who demonstrated that higher levels of environmental awareness significantly improve sustainable consumption behaviors in emerging economies. In the specific context of tourism, Chen et al. (2024) found that when environmental threats are clearly communicated, citizens are more likely to adopt supportive attitudes and behaviors. Together, these studies validate the present finding that awareness can act as a driving force behind the behavioral engagement of tourists in CBM-aligned destinations. The strong correlation between purchase intention and actual behavior in this study mirrors patterns reported by Paul et al. (2016) and Sun (2020), both of whom underscored the predictive power of intention when ethical and cognitive dimensions align. Sun, in particular, noted that tourists who internalize environmental values are more likely to translate intention into action, provided they perceive institutional or social reinforcement. This reinforces the view that promoting ethical purchase intention is not just desirable but also feasible if supported by adequate awareness infrastructure.

Perhaps most striking is the finding that perceived value has the strongest influence on attitude formation. This observation closely aligns with Husain et al. (2022), who showed that emotional and symbolic product values are instrumental in shaping brand equity. Similarly, Mentink et al. (2017) emphasized that social value enhances consumer engagement with sustainable products. These findings collectively support the idea that perceived value serves as an essential emotional and cognitive foundation for positive attitudes toward circular business practices. However, the weak direct relationship between perceived value and purchase intention diverges from the results of Fu et al. (2023), who, in their meta-

analytic structural equation model, identified perceived value as a consistent predictor of willingness to pay for circular products. This apparent inconsistency may be attributed to contextual factors. For example, Lim et al. (2023) observed that in Asian luxury markets, high perceived value alone was insufficient to predict purchase unless reinforced by cultural norms and brand familiarity. The present study's context—European tourists in Tehran—may also introduce cultural or informational gaps that affect this relationship.

In terms of practical application, the finding that awareness and education drive sustainable behavior aligns with the proposals of Barcellos-Paula et al. (2024), who advocated for narrative-based environmental messaging in tourism destinations. Their case study on Ljubljana showed that environmental identity and affinity significantly improve behavioral compliance when combined with educational outreach. Similar conclusions were reached by the European Commission (2024), whose Eurobarometer data confirmed that tourists exposed to environmental information are more likely to act responsibly. The policy recommendation to distribute educational brochures and videos in protected tourist zones resonates strongly with earlier recommendations by Casas et al. (2021), who emphasized that the successful implementation of circular tourism requires both infrastructural support and targeted communication strategies. In fact, Bocken et al. (2016) had earlier suggested that consumer engagement is as crucial as business innovation when it comes to circular transformation—an idea echoed in the current findings.

Lastly, by including moderating variables such as age, education, and income, the study contributes a nuanced understanding of how demographic characteristics shape responsiveness to circular business models. This was a gap previously noted in the work of Mostaghel and Chirumalla (2021), who called for deeper investigation into consumer heterogeneity in CBM adoption. These insights can help shape policies and business strategies that foster ethical consumer behavior, ultimately contributing to a more sustainable tourism sector. To effectively promote awareness of environmental issues and enhance

the perceived value of sustainable tourism, several interrelated strategies should be considered as part of a comprehensive communication and policy framework. One critical approach involves leveraging the power of digital and mass media to inform the public about sustainability challenges. The vast reach of social media platforms, documentaries, and educational campaigns offers a unique opportunity to shape public perception and encourage behavioral change on a broad scale. At the same time, embedding environmental education within academic curricula at both school and university levels is essential. Structured learning experiences focused on climate change, the principles of circular economy, and ethical consumption can cultivate a generation of environmentally conscious citizens who are better equipped to make responsible choices. In parallel, eco-tourism professionals—including nature guides and tour operators—play a pivotal role in translating theoretical knowledge into practice. By offering immersive and informative experiences, these actors not only promote environmental preservation but also serve as influential messengers of circular tourism principles. Their on-the-ground engagement with tourists positions them as critical agents in shaping sustainable behaviors. Moreover, targeted marketing initiatives that emphasize the ethical, eco-friendly, and circular characteristics of tourism products and destinations are vital to capturing the attention of environmentally aware travelers. Effective messaging around sustainability can amplify tourists' motivation to align their values with their consumption patterns. To support this further, tourism businesses and destination managers must commit to transparency by clearly communicating their ethical and circular practices. When visitors are provided with clear, verifiable information regarding a service's environmental attributes, their trust and willingness to engage in sustainable choices increase significantly. The findings of this study further reinforce the central role of attitude in ethical consumer behavior. Tourists who hold favorable views toward sustainability and ethical products demonstrate a higher propensity to engage in responsible consumption, confirming the assumptions of Hypothesis 5. Attitude, in this sense, acts as a

powerful mediator between perceived value and behavior. Perceived value itself emerges as a key determinant of both attitude and purchase intention, as highlighted in Hypotheses 3 and 4, and its influence extends indirectly through the attitudinal and intentional pathways. Therefore, any strategic efforts aimed at fostering ethical consumption among tourists must focus on enhancing the perceived emotional, cognitive, and social value associated with sustainable tourism experiences while reinforcing positive attitudes through education, engagement, and transparent communication.

Effectively embedding sustainability into tourism practices requires a multilayered strategy grounded in education, communication, and infrastructure. One foundational method involves enhancing awareness through well-crafted informative content—articles, brochures, and compelling visuals—which can foster a deeper sense of personal responsibility among tourists. These tools not only educate but also emotionally engage travelers with the sustainability agenda. In this regard, multilingual summaries of environmental regulations at key entry points and destinations can serve as accessible guidelines for international visitors. Integrating augmented reality (AR) and virtual experiences into airports and major tourism hubs adds a dynamic layer of interaction, making sustainability principles more engaging and easier to internalize. To reinforce ethical conduct in real time, tourism authorities should deploy clear and intuitive signage in national parks and heritage sites, promoting behavioral norms while subtly educating visitors on environmentally friendly actions. Within the hospitality sector, hotels, restaurants, and transport operators have an equally important role. These entities should produce and disseminate digital and printed materials—ranging from brief instructional videos to QR-linked eco-cards—that guide ethical behavior and highlight each establishment's circular practices. Such transparency builds trust and encourages replication of sustainable choices. Visual storytelling also plays a powerful role in shaping tourist perception. Strategically placed digital displays that showcase the natural beauty of destinations can trigger emotional engagement, which has been shown to positively influence pro-environmental

behavior. Another critical component is staff training. Employees who are well-versed in circular tourism concepts are more likely to embody and promote sustainability values throughout the customer experience. Continuous professional development, including workshops and knowledge-sharing sessions, strengthens organizational alignment with circular principles. These efforts are particularly relevant given existing evidence that consumers are more inclined to purchase ethical products when they clearly understand their environmental advantages. Transparency about sustainability initiatives—such as pollution reduction, resource reuse, and waste minimization—must therefore be prioritized and communicated both online and onsite. Making these initiatives visible enables tourists to recognize and support ethical efforts. The findings of this study further validate Hypotheses 1 through 4, confirming that awareness, perceived value, and attitudes collectively shape sustainable consumption behaviors in tourism. In turn, strategic implementation of these educational and communicative interventions can significantly enhance the success and societal acceptance of circular business models across the tourism sector.

The findings of this research indicate that education level did not significantly influence ethical purchasing behavior, except in a few isolated cases. This diverges from earlier studies such as that of Chekima et al. (2016) who found that individuals with higher education are generally more inclined to purchase environmentally responsible products. One possible reason for this discrepancy lies in the sampling method used in the current study, which was non-random and thus may not accurately reflect broader population dynamics. Future investigations should consider employing stratified random sampling across diverse educational strata to reevaluate the moderating role of education. In contrast, age emerged as a positive and significant moderator of ethical purchasing behavior. The knowledge and awareness gained through life experience appear to shape decision-making in favor of sustainability. This reinforces the need for early educational

interventions aimed at instilling environmental responsibility in younger generations. Incorporating sustainability education into school curricula could lay a strong foundation for pro-environmental behavior in adulthood. In addition, the use of visual and narrative media—such as animated films and documentaries—can communicate complex ethical concepts to youth in more accessible ways, gradually embedding sustainability into mainstream cultural understanding. From a policy perspective, introducing tax incentives for businesses adopting circular business models could also stimulate broader engagement with sustainable practices. Offering tax breaks to hotels or tourism-related enterprises that follow circular economy guidelines can reduce financial barriers and accelerate the transition toward more ethical consumption structures. These findings collectively suggest that the development of ethical consumer behavior in tourism is not solely a matter of individual awareness but also depends on systemic support through education, communication, and policy design. To further deepen our understanding of sustainable tourism behavior, future research should investigate Iranian ecotourists in different regions, expand the current model to include other industries, and analyze additional demographic factors such as income and gender. Incorporating variables like hedonic motivations, recycling habits, and trust in circular products can offer richer insights into behavioral mechanisms. Refining theoretical models, enhancing sampling procedures, and integrating open-ended survey methods could improve the depth and generalizability of results. Moreover, expanding studies to various tourist destinations across Iran and creating certification frameworks for circular hotels may help institutionalize sustainability standards across the industry. Nonetheless, this study was not without limitations. Restricted access to relevant academic resources, difficulties in identifying and reaching a dispersed target population, and the absence of fully developed circular tourism infrastructure in Iran posed methodological challenges. The non-normal distribution of data also necessitated the use of partial least squares structural equation

modeling, while the use of a closed-ended questionnaire limited the range of respondents' qualitative feedback. Finally, since the research focused exclusively on Tehran, caution is warranted in generalizing the results to other

regions. Addressing these limitations in future investigations will help enhance the theoretical and practical relevance of research on ethical consumer behavior and circular tourism in diverse settings.

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