



The Impact of Environmental Awareness on the Willingness to Purchase Green Insurance in Iran

Mohammad Amin Zandi^{1,*}, Mostafa Mansouri², Mohammad Ehsan Zandi³

¹ Assistant Professor, Department of Economic Planning and Development, Faculty of Economics, Allameh Tabataba'i University, Tehran, Iran.

² Master's student, Department of E-Commerce Economics, Faculty of Economics, Allameh Tabataba'i University, Tehran, Iran.

³ PhD graduate in Science and Technology Policy, College of Management, University of Tehran, Tehran, Iran.

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ABSTRACT

BACKGROUND AND OBJECTIVES: The emergence of environmental crises, manifested in the form of rapid climate change, global warming, and severe degradation of natural resources, has presented the global community with a major challenge in this era. The relentless and ever-increasing increase in industrial activities, coupled with urbanization and excessive consumerism, has led to a significant increase in greenhouse gas emissions. This has created existential threats to biodiversity, human health, and the overall quality of ecosystems. In this context, the importance of fostering pro-environmental behaviors has gone beyond traditional sectors and has placed a significant responsibility on the shoulders of the financial and insurance industries to promote sustainability. As a cornerstone of the modern economy, the insurance industry is in a unique and privileged position to mitigate environmental damage not only through risk coverage, but also through the careful design of green insurance. This innovative financial element incorporates sustainability criteria into product design, contractual obligations and investment policies, ultimately reducing harmful activities while actively promoting environmentally friendly projects. Despite the high potential of green insurance to reduce environmental pressures and improve environmental conditions, its market penetration in developing countries like Iran, which face acute challenges such as water scarcity and air pollution, among many others, remains limited. The findings suggest that although environmental awareness is increasing, it does not automatically translate into purchasing behavior. This indicates a gap between knowledge and practice. Consequently, this study aimed to provide a comprehensive explanation of the psychological and structural mechanisms influencing the willingness to purchase green insurance in Iran. This study closely examines the pivotal and interacting roles of environmental awareness, environmental concern, environmental attitude, and the critical factor of trust in insurance companies, and seeks to outline how these constructs shape consumer decision-making in a developing market.

METHODS To fully identify the determinants of green insurance adoption, this study carefully utilized a theoretical model based on the integration of the Theory of Planned Behavior (TPB), the Knowledge-Attitude-Behavior (KAB) model, and the Environmental Values Framework. This combination allowed for the examination of direct and indirect paths linking cognitive, affective, and attitudinal constructs with behavioral intention. The study data were collected through a questionnaire distributed to citizens living in Iranian metropolitan areas. The final sample of this study included 397 valid and complete responses, which ensured the statistical power of the analysis. One of the features of the method used was the operationalization of

the main constructs. Environmental concern was modeled as a second-order construct rooted in value-belief-norm theory; this construct includes three different dimensions: selfish concern, social-altruistic concern, and concern for the biosphere. Environmental attitudes were assessed to measure worldviews about the relationship between humans and nature. Trust in insurance companies was measured using a multidimensional scale that assesses perceptions of honesty, competence, and benevolence. Data analysis was performed using partial least squares structural equation modeling (PLS-SEM), a method chosen because of its efficiency in handling complex models with latent variables and predicting behavioral intentions.

FINDINGS: The results of structural equation modeling showed that the main hypotheses of the study were confirmed. Data analysis showed that environmental awareness acts as a cognitive motivator and has a positive and significant effect on the willingness to purchase green insurance. In this regard, this study showed that awareness primarily acts as a prerequisite that strengthens other psychological factors. Environmental concern, which includes selfish, social, and biosphere dimensions, has a significant positive effect and acts as a powerful emotional motivator. The more threats individuals perceive to themselves, society, or the biosphere, the greater their willingness to purchase green insurance. Environmental attitude also showed a positive effect, indicating that a pro-environmental worldview is a significant predictor of green financial behavior. The point is that this study showed that trust in insurance companies is a critical determinant and shows a significant positive effect on the willingness to purchase. Given the intangible nature of insurance and the novelty of green products, trust acts as a mechanism to reduce perceived risk and uncertainty. Furthermore, the analysis of control variables showed that socio-economic factors play a role: income and education levels, as well as previous experience with insurance services, have positive and significant effects on purchase intention. Conversely, demographic variables such as age and gender did not show a significant effect on the decision-making process.

CONCLUSION: The findings showed that expanding the green insurance market in Iran requires a multifaceted strategic approach, which goes beyond simple awareness campaigns. Given that increasing environmental knowledge is essential and important, the results emphasize that this must be accompanied by efforts to foster deep emotional engagement and, most importantly, foster public trust in order to be effective. To reduce consumer skepticism, insurance providers must demonstrate their genuine commitment to sustainability through transparent methods and procedures. Furthermore, since higher income and education levels are correlated with purchase intent, initial marketing efforts should be tailored to these specific socio-economic demographics. Ultimately, cultivating a green insurance culture is not just about awareness and knowledge; it requires a comprehensive strategy that combines educational initiatives with value-based engagement and rebuilding institutional trust. This approach is essential to bridging the gap between environmental concerns and actual purchase behavior.

Introduction

In recent decades, environmental crises such as climate change, global warming, and the degradation of natural resources have emerged as some of the most critical concerns of the global community. The expansion of industrial activities, urbanization, and excessive consumerism has led to increased greenhouse gas emissions and posed significant threats to biodiversity, compromising human health and the quality of ecosystems; Under these circumstances, fostering pro-environmental behaviors and promoting green consumer orientations particularly within the financial and insurance sectors has gained paramount importance (Cai et al., 2025).

As a fundamental pillar of the modern economy, the insurance industry, beyond its traditional role in covering financial risks, can contribute to preventing and mitigating environmental damage through the design and delivery of innovative products such as green insurance (Cao et al., 2025). Green insurance refers to insurance products that incorporate sustainability criteria and environmental considerations throughout their design processes, contractual obligations, and related investment policies. Such insurance schemes can reduce environmentally harmful behaviors while encouraging investment in environmentally friendly projects (Ma & Wang, 2025).

Despite the high potential of green insurance in alleviating environmental pressures, consumer uptake of these products remains limited in many countries, including Iran. Numerous studies have shown that the adoption of green innovations is strongly influenced by consumers' psychological and attitudinal factors (Tranter & Booth, 2019). Among these, environmental awareness a core cognitive construct plays a pivotal role in shaping the willingness to engage in environmentally friendly behaviors. Environmental awareness encompasses individuals' perceptions and knowledge concerning environmental issues, their causes and consequences, and strategies for environmental protection. However, evidence suggests that awareness alone is not sufficient to guarantee concrete actions, as its impact is often mediated through environmental attitudes and behavioral intentions (Ip, 2024).

Environmental attitude, measured using the New Ecological Paradigm (NEP) scale, reflects an individual's general view regarding the human nature relationship, resource limitations, and the necessity of environmental protection (Lavuri, 2022). A positive environmental attitude increases the likelihood of participating in pro-environmental behaviors. International research has confirmed that environmental attitude, as a mediating construct, can strengthen the effect of environmental knowledge and environmental concerns on the willingness to purchase green products (Sharma et al., 2025).

The importance of examining this issue in Iran is twofold. First, the country is facing multiple environmental challenges including water scarcity, air pollution, and soil degradation that demand innovative economic and financial approaches. Second, the green insurance market in Iran remains in its early stages of development; identifying the factors affecting its adoption can help guide policymaking and facilitate more effective private sector engagement. Furthermore, cultural, economic, and social differences between Iran and countries examined in international literature underscore the necessity of conducting localized research tailored to the domestic context accordingly, the present study, focusing on the Iranian context and employing Structural Equation Modeling (SEM), seeks to address the key question of whether, and in what manner, environmental awareness, environmental concern, environmental attitude, and trust in insurance companies can shape consumers' willingness to purchase green insurance.

Theoretical Foundations

Environmental Awareness

Environmental awareness is a key cognitive factor in understanding pro-environmental behaviors. It is a multidimensional construct that includes an individual's knowledge of environmental issues, their causes and consequences, and the strategies needed to address them (Rehman et al., 2025).

This construct reflects the ability to recognize and understand the connections between natural events and human activities, enabling consumers to assess the environmental implications of their choices. From the perspective of green marketing, environmental awareness is considered a prerequisite for fostering sustainable attitudes and generating willingness to adopt environmentally friendly behaviors (Liu et al., 2020).

Consistent with environmental psychology frameworks, numerous studies have shown that environmental knowledge can be broadly classified into two main types: objective knowledge, which refers to a person's actual and measurable awareness of environmental concepts and issues, and subjective or perceived knowledge, which pertains to an individual's self-assessment of their own level of knowledge (Chi et al., 2022). In international studies, both types of knowledge have been associated with green behaviors, although findings indicate that the direct effect of awareness on behavior is often weak and typically requires mediation through attitudes and personal norms (Liu et al., 2020).

Research within Iran's domestic context indicates a significant gap between awareness and action. While there is a recognized level of concern regarding environmental crises such as water scarcity, air pollution, and climate change, this awareness has not yet translated into the widespread purchase of green products or adoption of sustainable services. According to Majdi Yazdi et al. (2021), this gap is attributable in part to psychological variables, such as weak positive attitudes towards environmental initiatives, alongside other structural factors.

Environmental awareness is also linked to individuals' ability to recognize the economic and social benefits and consequences of green behaviors. In the literature, the dimensions of environmental awareness range from knowledge of environmental problems to understanding potential solutions and measures, as well as comprehending the outcomes of individual actions (Yang et al., 2025). In this study, environmental awareness focuses on respondents' level of knowledge regarding climate issues in Iran, the impacts of climate change, air and water pollution, and possible solutions for mitigating these problems.

The theoretical linkage between environmental awareness and willingness to purchase green insurance is framed within green consumer behavior models, particularly the Knowledge–Attitude–Behavior (KAB) model. This model posits that awareness leads to attitude change, which, in turn, influences intentions and actual behaviors. However, recent research has demonstrated that this pathway can be strengthened or weakened by other constructs, such as personal norms, brand trust, and social motivations. In the context of green insurance where the service is intangible and consumers cannot experience its quality prior to purchase awareness of the product's environmental benefits and positive impacts plays a crucial role in lowering perceived risk (Burgos-Espinoza et al., 2024).

Practically, increasing environmental awareness through public education, targeted advertising, and transparent communication of insurance companies' green initiatives can facilitate consumer acceptance of these products (Klabi, 2025). In Iran, policymakers and insurance industry stakeholders can reduce the awareness action gap by utilizing public awareness campaigns and collaborating with environmental NGOs. For instance, Ghavidel et al. (2020) found that customers who believed that green insurance has a direct role in reducing environmental damage were more willing to pay higher premiums for such products.

In summary, in this research, environmental awareness is conceptualized not merely as an independent variable but as a key driver in forming positive environmental attitudes and fostering willingness to purchase green insurance. The literature suggests that without an adequate level of knowledge about environmental issues and

solutions, consumers are unlikely to enter the decision-making process for purchasing green products. Therefore, enhancing environmental awareness in Iran's insurance market is regarded as a strategic cornerstone for sustainable development and for promoting the culture of green insurance.

Environmental Concern

Environmental concern, as a multidimensional construct in environmental psychology and green consumer behavior literature, reflects the degree of sensitivity, importance, and priority an individual assigns to environmental issues. It represents the values, beliefs, and attitudes an individual holds regarding the relationship between humans and nature, and may range along a continuum from egoistic to biospheric orientations (Gauldin et al., 2025). From a behavioral perspective, environmental concern serves as a strong predictor of the willingness to engage in sustainable actions, enhancing intrinsic motivation to support environmentally friendly policies and products. The importance of this construct lies in its function as a motivational bridge between environmental knowledge and the manifestation of green behavior in other words, awareness without emotional concern rarely translates into action (Liu et al., 2020).

Empirical research conducted in Iran has confirmed that rising levels of environmental concern among Iranian citizens exhibit a positive and significant correlation with tendencies to purchase green products and services. In this study, environmental concern is conceptualized not only as a predictor of willingness to purchase green insurance but also as a driver of positive environmental attitudes. It is operationalized as a second-order construct encompassing three dimensions: egoistic concern, social altruistic concern, and biospheric concern (Omidvar et al., 2023).

1. Egoistic Concern

Egoistic concern refers to a form of environmental care rooted in self-interest and personal welfare. Within this orientation, the consequences of environmental degradation are valued insofar as they affect an individual's health, quality of life, or personal assets. People with egoistic concern tend to evaluate environmental issues primarily in terms of their direct impact on their own lives for example, air pollution is worrisome if it causes respiratory illness, and climate change becomes a concern if it threatens job security or disrupts one's lifestyle (Cai et al., 2025).

Studies, including Liu et al. (2020), indicate that egoistic concern can serve as the starting point for engagement in pro-environmental behaviors, although the scope and persistence of such behaviors are generally narrower compared to other concern types. In the Iranian context, local findings suggest that many consumers are willing to support environmental initiatives such as purchasing green insurance only when they perceive direct, tangible benefits to themselves. From a green marketing perspective, emphasizing the personal and benefit-oriented aspects of green insurance such as safeguarding health and financial security against climate-related losses can effectively attract this segment (Mohammadsalehi et al., 2023).

2. Social–Altruistic Concern

Social concern is grounded in altruistic values and a commitment to the welfare of others, particularly present and future generations. Within this framework, individuals consider the societal consequences of environmental degradation not only for themselves but also for others, especially vulnerable populations, children, and their local communities. This concern is linked to social responsibility and to behaviors intended for collective benefit. Empirical evidence suggests that, relative to egoistic concern, social–altruistic concern tends to produce more enduring and profound pro-environmental behaviors (Rehman et al., 2025).

Alirezai et al. (2022) showed that altruistic values have a significant positive relationship with enhancing environmental attitudes and increasing willingness to purchase green products. In the realm of green insurance, this concern can manifest in preferences for policies that protect society as a whole from environmental risks. For instance, green agricultural insurance not only secures farmers' financial stability but also conserves vital resources such as water and soil, benefiting the entire community. A strategic communication approach

involving social advertising and collective-responsibility messaging may increase the acceptance of green insurance among consumers with pronounced social–altruistic concern.

3. Biospheric Concern

Biospheric concern represents the deepest and most comprehensive level of environmental awareness. At this stage, individuals ascribe intrinsic value to all living beings and ecosystems. Unlike egoistic or social concerns which remain human-centered biospheric concern encompasses sensitivity toward harm inflicted on plants, animals, biodiversity, and Earth's natural cycles, often aligning with an ecocentric worldview (Burgos-Espinoza et al., 2024).

Studies reveal that individuals with higher biospheric concern not only adopt more persistent and wide-ranging green behaviors but also commit to actions lacking immediate human benefit. In Iran, although this concern is less prevalent than the other two dimensions, grassroots movements advocating for wildlife conservation or opposing ecologically destructive projects represent tangible expressions of these values. In the insurance market, such consumers may favor green insurance products whose profits are partially allocated to initiatives for natural resource restoration, afforestation, or habitat preservation (Shafaei Moghadam & Niazi, 2020). From a behavioral modeling perspective, higher biospheric concern correlates positively with stronger environmental attitudes and, consequently, greater willingness to purchase green insurance (Majdi Yazdi et al., 2021). This makes biospheric concern a strategically important dimension in the design of green marketing messages.

Environmental Attitude

Environmental attitude is regarded as one of the most important psychological constructs in the domain of green consumer behavior. It reflects a set of beliefs, emotions, and predispositions that an individual holds toward environmental protection and the sustainability of natural resources. This attitude is typically conceptualized in terms of three components: cognitive, encompassing one's perception of the importance of environmental issues; affective, representing positive feelings such as interest or a sense of moral duty, as well as negative emotions such as concern or anxiety regarding environmental degradation; and behavioral, denoting an individual's readiness and willingness to engage in pro-environmental actions (Chi et al., 2022).

Crucially, environmental attitude functions as an intermediate link between environmental knowledge and environmental concern, on the one hand, and actual pro-environmental actions on the other particularly in the selection of environmentally friendly products or services, such as green insurance (Gauldin et al., 2025).

International studies, such as Lavuri (2022), have shown that individuals with more positive environmental attitudes demonstrate a markedly greater tendency toward sustainable behaviors compared to those with limited environmental concern. Similarly, Burgos-Espinoza et al. (2024) emphasize that strengthening environmental attitudes through both specific and general education can produce tangible behavioral change. Within the insurance sector, characterized by intangible service provision and future-oriented commitments, a positive environmental attitude plays a decisive role in the acceptance of green products.

From a values-based perspective, environmental attitudes are shaped by an individual's core value system. For example, ecocentric values prioritize nature conservation as an ultimate goal, whereas anthropocentric values approach environmental protection primarily through the lens of human benefits (Sharma et al., 2022). In Iran, surveys indicate that environmental attitudes particularly among younger generations are on the rise. However, a significant gap still exists between holding a positive attitude and translating it into actual behavior. This gap is largely attributed to economic constraints or mistrust toward institutions offering green products (Danesh Satari, 2022).

This attitude behavior gap represents one of the main challenges in green marketing for the insurance industry. Strategies to address it include providing tangible evidence of the benefits of green insurance, employing credible environmental certifications and eco-labels, and disseminating real-world success stories (Gauldin et al., 2025). From a structural modeling standpoint, environmental attitude, beyond its direct role in increasing

willingness to purchase green insurance, can act as a mediating variable that enhances the effect of environmental concern (Ma & Wang, 2025). In practical terms, even an individual with a moderate level of concern is more likely to purchase green insurance if their attitude toward environmental protection is positive and stable.

In Iranian research, Alirezaei et al. (2022) found that a positive attitude toward environmental policies and initiatives maintains a strong, direct relationship with support for green innovations and even influences economic decision-making. This finding aligns with the relationship marketing approach, which emphasizes building emotional and value-based connections between the organization and the customer. In the insurance industry, this bond becomes sustainable when companies highlight not only the economic advantages of green policies but also present statements and implement practices consistent with environmental values.

In summary, environmental attitude serves as a critical factor in consolidating green purchasing behaviors and generating preference for environmentally friendly insurance products. The development and reinforcement of such attitudes require synergy between formal and informal environmental education, shared experiences in participatory green projects, and ongoing interaction between consumers and companies in the sphere of corporate environmental responsibility.

Trust in Insurance Companies

Trust, as one of the most critical behavioral constructs in services marketing, holds a central position in customer decision-making processes especially within the insurance industry, where products are intangible and rely heavily on promises of future performance (Tranter & Booth, 2019). Theoretically, trust is defined as the customer's belief in the honesty, competence, and reliability of the counterpart to fulfill commitments, even in the absence of direct oversight or control. In the insurance sector, this belief is shaped through the customer's assessment of the company's capacity to meet financial obligations, the quality of its services, the alignment of corporate values with principles of social responsibility, and the transparency of communications (Cao et al., 2025).

International research has demonstrated that in the case of green products, trust extends beyond traditional dimensions such as reliability and competence to encompass additional components, including the legitimacy of environmental claims and ethical integrity (Sharma et al., 2022). This implies that customers of green insurance not only evaluate a company's ability to pay claims and honor commitments but also critically assess the accuracy and legitimacy of its stated environmental benefits. In Iran, empirical evidence indicates that a lack of transparency and insufficient documented communication regarding the actual environmental performance of green insurance products constitutes a primary barrier to trust-building in this emerging market (Toubaei et al., 2021).

In the relationship-oriented marketing approach, trust is regarded as the cornerstone for establishing and maintaining a long-term interaction between the customer and the organization. This construct gains heightened significance when the business environment is characterized by high levels of uncertainty and perceived risk a condition prominently evident in the green insurance market. Particularly for innovative and little-experienced products like green insurance, the absence of prior practical encounters means that customer decisions depend heavily on perceived corporate trustworthiness (Movaghar et al., 2023).

Burgos-Espinoza et al. (2024) highlight that a positive environmental attitude only leads to actual green purchasing behavior when reinforced by trust in the product provider. In the absence of trust, even strong attitudes and high environmental awareness may fail to translate into purchasing behavior due to doubts regarding the company's honesty or operational competence. In the insurance industry, this dynamic manifests as the attitude-trust-behavior gap: customers may believe in the importance of green insurance and understand its benefits, yet inadequate trust acts as a decisive deterrent to purchase.

In the context of the Iranian market, effective trust-building for green insurance requires a coordinated combination of communicative measures and operational actions. Communicative measures involve delivering

transparent, documented, and verifiable information regarding the environmental impacts of insurance products; publishing annual performance reports; and allocating resources to credible environmental projects (Haghighi et al., 2012). Operational measures include accurately and promptly fulfilling insurance commitments, making genuine investments in natural resource restoration initiatives, and aligning corporate policies with internationally recognized standards of social responsibility (Maroofi et al., 2020).

Within the conceptual model of the present study, trust in insurance companies plays a dual role:

1. **Direct Effect:** It enhances the customer's willingness to purchase green insurance.
2. **Moderating Effect:** It amplifies the positive impact of environmental attitude on purchase intention.

This suggests that even among customers with favorable environmental attitudes, the intensity and quality of green purchasing behavior depend significantly on their level of trust in the insurance provider.

Ultimately, in the green insurance market, trust is not merely a psychological construct; it constitutes a sustainable competitive advantage capable of securing a company's position in customers' perceptions and preferences. Establishing and maintaining such trust requires a comprehensive approach that transcends promotional claims and is substantiated through concrete actions. Without this, any doubts or suspicions regarding the company's environmental integrity can rapidly erode customer relationships.

Willingness to Purchase Green Insurance

Willingness to purchase green insurance recognized as one of the core indicators of green consumer behavior refers to an individual's deliberate intention to select and purchase insurance policies that are environmentally friendly or designed to mitigate negative environmental impacts. Unlike actual purchasing behavior, which is manifested in action, willingness operates at the level of inclination and intention, formed under the influence of an interconnected set of cognitive, affective, and normative factors. In the insurance industry, where services are inherently intangible and commitments are typically realized in the future, purchase willingness is highly dependent on customers' subjective perceptions of environmental benefits, the credibility of the provider, and the degree to which the product aligns with their personal values and attitudes (Rehman et al., 2025).

International studies including Liu et al. (2020) have established that willingness to purchase green products is significantly influenced by environmental attitude and trust in the provider. In Liu et al. (2020) proposed conceptual model, environmental awareness fosters purchase intention by shaping attitudes and creating a sense of moral responsibility. However, the absence of trust or uncertainty regarding the authenticity of environmental claims can undermine this intention. These findings are particularly decisive in the context of insurance, where green policies not only promise coverage for losses linked to climate-related events but also claim broader environmental contributions such as investments in natural resource restoration projects or efforts to reduce the carbon footprint of the insurance industry.

In Iran, according to Molla Ghaleghachi & Bashir Khodaparasti (2022), willingness to purchase green insurance remains in an early developmental phase and is largely considered an emerging concept. One of the principal barriers to forming purchase intention is the limited public awareness of the nature and operational mechanisms of green insurance particularly the distinctions between green and conventional insurance policies. In addition, the nascent state of the market and the lack of well-documented domestic success stories contribute to consumer hesitation. Under such conditions, motivational and normative factors assume greater prominence, meaning that moral obligations, concerns for the future of natural resources, and social pressures can substitute for direct personal experience in motivating purchase willingness.

Within the framework of the Theory of Planned Behavior (TPB), willingness to purchase green insurance is shaped by three categories of determinants:

1. **Attitudes toward behavior:** Positive environmental attitudes, perceptions of personal and collective benefits, and societal endorsement of green insurance increase willingness.

2. **Subjective norms:** Growing societal norms favoring support for green initiatives exert positive pressures on consumer behavior, especially in contexts where responsible consumption is emerging as a social value (Tranter & Booth, 2019).
3. **Perceived behavioral control:** The perceived ease or difficulty in purchasing green insurance based on accessibility, affordability, and market maturity has a direct effect on purchase intention.

A notable feature of green insurance is the heterogeneous impact of egoistic, altruistic, and biospheric motivations on purchase intention. Egoistically motivated individuals view green insurance primarily as a means of personal protection against environmental damage; altruistically motivated groups regard it as a mechanism for contributing to societal resilience in the face of climate risks; while biospherically motivated individuals value it for its contribution to ecosystems and the welfare of living organisms (Omidvar et al., 2023).

From a practical standpoint, enhancing willingness to purchase green insurance requires a strategic set of green marketing initiatives, including:

- Broad and transparent communication about the actual benefits of green insurance;
- Presentation of successful case studies;
- Financial incentives or special discounts;
- Effective use of social media to construct a positive image of green insurance.

Furthermore, fulfilling environmental commitments in practice and disseminating verifiable performance reports can help internalize the value of green insurance among customers, thus solidifying purchase intention.

Overall, willingness to purchase green insurance functions as a critical bridge between motivational constructs (such as attitude and concern) and actual purchasing behavior. Strengthening this willingness depends not only on individual-level changes in values and beliefs but also on structural reforms in how green insurance is offered and marketed. The present study, by emphasizing this construct and its role within the conceptual model, seeks to identify mechanisms influencing willingness to purchase green insurance and to propose pathways for increasing consumer participation in Iran's emerging environmentally friendly insurance market.

Research Hypotheses

Drawing upon the review of domestic and international literature and grounded in established theoretical frameworks including the Theory of Planned Behavior (TPB), the Knowledge–Attitude–Behavior (KAB) model, and Environmental Values Theory the relationships among the constructs of environmental awareness, environmental concern, environmental attitude, and trust in insurance companies, as they relate to willingness to purchase green insurance in Iran, have been formulated. These hypotheses derive from an integration of prior empirical findings and the necessity for contextual adaptation within Iran's socio-cultural and economic environment, encompassing both direct and indirect pathways specified in the conceptual model.

Accordingly, the primary hypotheses of the study are presented as follows:

Direct Effects

- **H₁:** Environmental awareness has a positive and significant effect on willingness to purchase green insurance.
- **H₂:** Environmental concern has a positive and significant effect on willingness to purchase green insurance.

- **H₃:** Environmental attitude has a positive and significant effect on willingness to purchase green insurance.
- **H₄:** Trust in insurance companies has a positive and significant effect on willingness to purchase green insurance.

Indirect (Mediating) Effects

Based on the conceptual model and consistent with the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach, the following indirect pathways are examined to assess the mediating role of environmental attitude and environmental concern in the relationships among the core constructs:

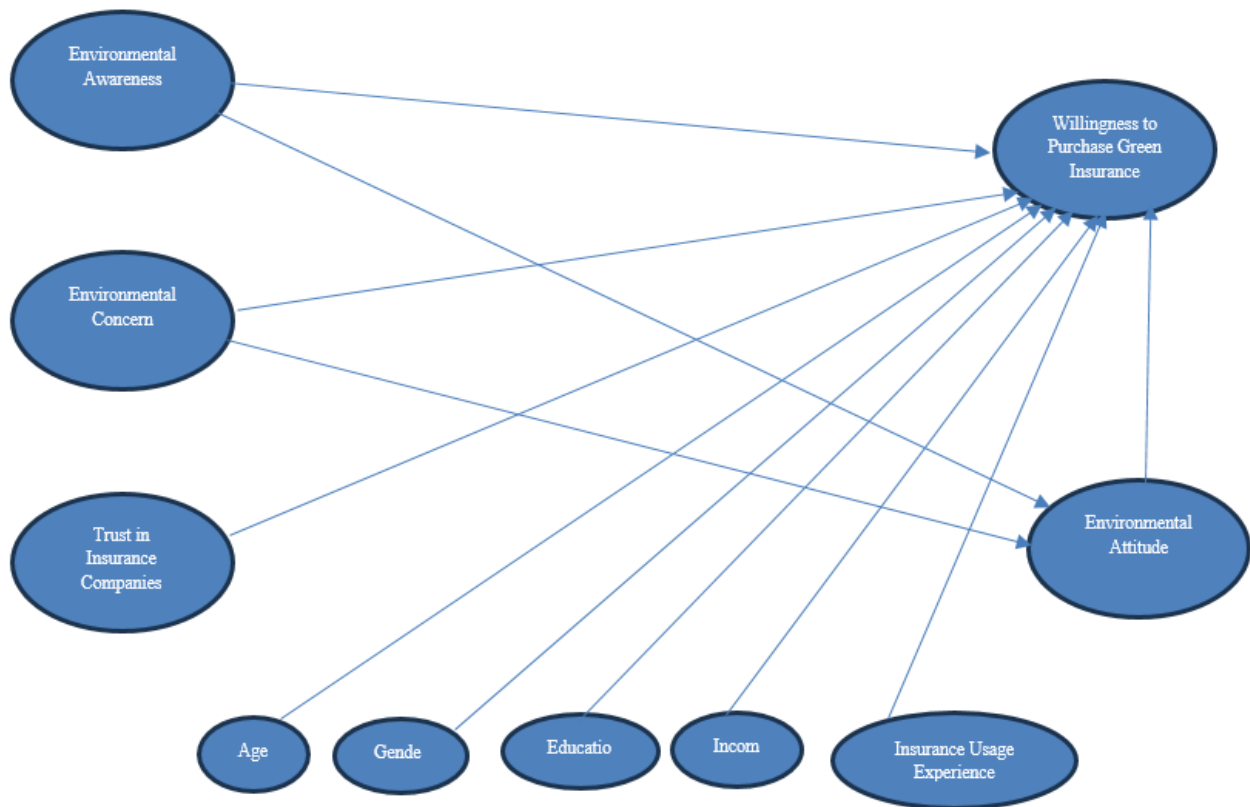
- **H₅:** Environmental attitude mediates the relationship between environmental awareness and willingness to purchase green insurance.
- **H₆:** Environmental attitude mediates the relationship between environmental concern and willingness to purchase green insurance.
- **H₇:** Environmental concern mediates the relationship between environmental awareness and willingness to purchase green insurance.

Control Variables

To account for contextual and individual differences, selected demographic variables are incorporated into the model as controls:

- **H₈:** Age has a positive and significant effect on willingness to purchase green insurance.
- **H₉:** Gender has a positive and significant effect on willingness to purchase green insurance.
- **H₁₀:** Level of education has a positive and significant effect on willingness to purchase green insurance.
- **H₁₁:** Income has a positive and significant effect on willingness to purchase green insurance.
- **H₁₂:** Prior insurance usage experience has a positive and significant effect on willingness to purchase green insurance.

Figure 1 presents the conceptual model of the study, illustrating both the direct and indirect pathways among the constructs under investigation. This model provides a structured framework for testing the research hypotheses and analyzing the relationships between variables based on the collected data.



Source: Research Findings

Figure 1. Conceptual Model of the Study

Literature Review

Review of Domestic Studies

In recent years, domestic researchers have increasingly focused on examining the psychological and behavioral constructs influencing the inclination toward purchasing green products; however, these studies have predominantly concentrated on tangible goods and have rarely addressed intangible services such as green insurance.

Molla Ghaleghachi & Bashir Khodaparasti (2022) investigated the effect of altruistic value, environmental awareness, and the use of social media on green purchasing behavior, with the mediating role of environmental concern, based on a customer sample. Their findings indicated that environmental awareness and altruistic values have a significant positive relationship with environmental concern and, subsequently, with green purchasing behavior. While this study effectively demonstrated the mechanism by which environmental concern exerts influence, its lack of focus on green services including insurance and the absence of differentiation among dimensions of concern (egoistic, social–altruistic, biospheric) limit the generalizability of its results to service-based models.

Shafaei Moghadam & Niazi (2020) examined the relationship between environmental awareness and environmental attitude with green purchasing behavior among citizens of Mashhad. The findings revealed that increased environmental knowledge not only strengthens green attitudes but also, through fostering a sense of

social responsibility, enhances the likelihood of purchasing green products. However, this research did not address the role of consumer trust in the provider an element that holds a pivotal role in financial and insurance services and can lead to substantial changes in purchase intentions.

Danesh Satari (2022), focusing on the tourism industry, identified green brand trust as a key determinant in the adoption of environmentally friendly services. Their study demonstrated that providing tangible evidence of a company's environmental activities successfully increases trust, which in turn enhances purchase intentions. This finding underscores the need for particular emphasis on trust in insurance companies within the present model. Nonetheless, Soleimani's study concentrated on services with immediate consumption experiences (such as travel and accommodation), whereas green insurance entails long-term contractual commitments, rendering the dimensions of trust in this context more complex and nuanced.

In the field of environmental concern, Alirezaei et al. (2022) highlighted the importance of biospheric concerns as a powerful driver of sustainable behaviors in Iranian society. This study effectively elucidated the deeper connection between ecocentric values and green choices; however, its empirical testing was conducted on small samples within the agricultural sector, which poses challenges for generalizing the findings to the green insurance market.

Mohammadsalehi et al. (2023), adopting a green marketing approach, investigated the relational model between trust, social responsibility, and inclination toward purchasing green services. Their results indicated that trust in the service provider leads to actual purchase intentions only when the provider's socially responsible actions are both visible and verifiable. This conclusion bears particular significance in the realm of green insurance, as Iranian consumers have traditionally adopted a cautious approach in evaluating the environmental commitments of service companies.

Review of International Studies

An examination of international scholarship reveals that over the past two decades, there has been growing attention to the psychological and cognitive factors influencing green behaviors, with extensive modeling of the relationships among environmental awareness, environmental concern, environmental attitude, trust, and willingness to purchase green products and services. However, most of these studies have focused on tangible goods and have rarely addressed intangible green services such as insurance.

Findings from international research indicate that environmental awareness, in most cases, does not exert a significant direct effect on pro-environmental behavior; rather, its influence is mediated through environmental attitudes and behavioral intentions. For example, Liu et al. (2020) in China found that although environmental knowledge does not directly lead to behavior, it can exert considerable influence via the enhancement of attitudes and the formation of green purchase intentions. A notable critique of such studies is their tendency to measure environmental knowledge in a generalized, undifferentiated form, overlooking the distinction between general knowledge and specialized knowledge. In contrast, Burgos-Espinoza et al. (2024), by differentiating knowledge types, demonstrated that specialized knowledge exerts greater impact among professional groups, and that practical experience with environmental issues enhances the effect of awareness on purchase intentions.

Environmental attitude, in international studies, has been identified as the vital link between cognition and behavior. This attitude is typically assessed using the New Ecological Paradigm (NEP) scale, which addresses dimensions such as limits to growth, anti-anthropocentrism, and the fragility of nature. Such attitudes not only increase the likelihood of engaging in green behaviors but also influence consumer trust in providers of green services. Nonetheless, researchers have found that the dimensions of this scale may vary across cultures, and applying it without localization can compromise the validity of findings a point particularly relevant to green insurance, as environmental attitudes and values in Iran may differ in structure from international frameworks (Cai et al., 2025).

The international literature on trust has largely developed in the domains of green products and green branding, with limited attention to financial and insurance services, despite the fact that the long-term nature of insurance amplifies the sensitivity of this variable. Studies have shown that transparency and the presentation of documented evidence of a company's environmental performance significantly enhance trust, whereas behaviors such as greenwashing can quickly erode it (Cao et al., 2025).

Willingness to purchase green services, within the Theory of Planned Behavior, is understood to be influenced by attitude, subjective norms, and perceived behavioral control. While numerous studies have explored these relationships for physical products such as organic food or sustainable fashion, relatively few have examined more complex service sectors. For instance, Rehman et al. (2025) found that in technical and service activities, green behavioral intentions require a combination of environmental values and precise awareness of service characteristics an insight that could be decisive in the context of green insurance.

Cross-study comparisons reveal considerable consensus regarding the existence of a cognitive–attitudinal–behavioral pathway linking awareness, attitude, and purchase intention, with the role of environmental concern confirmed in nearly all models. However, there are notable divergences, including inconsistencies in findings on the direct relationship between awareness and behavior, the lack of measurement of environmental concern dimensions, and the absence of in-depth examinations of trust in services with long-term contractual obligations. Moreover, research on willingness to purchase green services in the insurance domain is extremely limited, with most studies focusing on goods or services characterized by immediate consumption experiences (Lavuri, 2022).

In light of these strengths and shortcomings, it becomes evident that transferring international models to the domain of green insurance requires reform and localization. Differentiating environmental knowledge into general and specialized categories, measuring environmental concern within its threefold dimensions, localizing the environmental attitude scale, conducting focused analyses of trust in long-term insurance commitments, and expanding the literature on willingness to purchase green services are all essential research priorities in this field. Building upon and adapting key findings from this literature to the cultural and economic context of Iran, the present study seeks to propose a comprehensive model capable of addressing the gaps in domestic research while remedying existing deficiencies in international studies of green insurance.

To summarize, previous studies collectively indicate a sequential pathway linking environmental awareness, concern, attitude, and behavioral intention a progression that forms the cognitive affective behavioral foundation of this study's conceptual model. By integrating these constructs and accounting for the trust dimension specific to insurance services, the present framework offers a clearer and more theoretically coherent understanding of green insurance purchase willingness.

Research Methodology

Research Design

This study, aiming to examine the impact of environmental awareness on the willingness to purchase green insurance in Iran and to identify the mediating role of environmental attitude along with moderating variables such as trust in insurance companies, employed a quantitative approach and a survey-based method. Given the exploratory confirmatory nature of the research problem and the necessity of concurrently assessing multiple interrelationships among latent variables, data analysis was conducted using Structural Equation Modeling (SEM) via the Partial Least Squares (PLS) approach. It should be noted that the application of the Theory of Planned Behavior (TPB) in this study represents a simplified behavioral framework, which does not encompass elements such as personal norms and ascribed responsibility proposed in the more recent Pro-Environmental Behavior Theory (PEBT). This theoretical simplification constitutes a methodological limitation but allows for clearer testing of cognitive and attitudinal pathways within the Iranian insurance context.

Additionally, as the sampling method was non-probability-based and concentrated in major urban areas, the generalizability of the findings to the broader Iranian population is limited. Future research could employ probabilistic sampling and the more comprehensive PEBT framework to attain deeper understanding of pro-environmental insurance behaviors.

The selection of this methodological strategy is scientifically substantiated, particularly in view of the study being conducted within the specific socio cultural context of Iran and involving a proposed model that comprises higher-order constructs. PLS-SEM demonstrates greater robustness to deviations from normal distribution and is more tolerant of moderate sample sizes, while facilitating the analysis of complex models containing both reflective and formative measurement structures.

Target Population

The statistical population of this study comprised adult Iranian citizens who are eligible to receive and utilize insurance services. Given the research focus on the willingness to purchase green insurance, the target population was defined based on three principal criteria:

1. **Minimum legal age:** Respondents were required to be at least 18 years old and legally capable of entering into insurance contracts.
2. **Basic literacy:** Possession of at least reading and writing skills was considered essential to comprehend the questionnaire content and the environmental concepts therein.
3. **Basic familiarity with insurance:** This was defined as either prior experience in purchasing insurance or at least a general understanding of the functions of insurance services, regarded as a necessary cognitive prerequisite.

In consideration of the vast geographical spread and socio cultural diversity of Iran, the research was focused on metropolitan residents. This geographical delimitation is supported by both theoretical and practical arguments:

- On the one hand, residents of large cities generally exhibit higher awareness of environmental issues and have greater access to insurance services.
- On the other hand, given that the green insurance market in Iran remains in its nascent developmental stage, it is reasonable to expect that the initial roll-out of such products will primarily occur in large urban centers.

Furthermore, as green insurance products can be both novel and relatively complex, it is anticipated that urban consumers typically with higher levels of education and income will constitute the core potential market for such offerings.

Sampling Method

Due to the characteristics of the target population and the absence of a complete sampling frame, the study employed a non-probability convenience sampling technique. While this method has inherent limitations in terms of statistical generalizability, it is widely accepted in exploratory and semi-exploratory research where the primary objective is to test theoretical relationships and uncover behavioral patterns particularly under conditions of limited financial and temporal resources.

Moreover, in PLS-SEM-based investigations, which prioritize the prediction and explanation of variance in the dependent variables, non-probability sampling can yield statistically valid results provided that the sample size is adequate and the sample exhibits sufficient diversity in its characteristics.

Data Collection Procedure

The data were collected via an electronic questionnaire designed on the Porsline platform and disseminated through social media networks and online groups. This approach facilitated access to a broader range of respondents with diverse demographic profiles.

To enhance response rates and ensure data quality, the questionnaire included introductory information regarding the study's objectives, assurances of confidentiality, and statements emphasizing the voluntary nature of participation. Additionally, screening questions were incorporated to ensure that respondents met the eligibility criteria (being over 18 years of age and possessing basic familiarity with the concept of insurance).

These measures were implemented to ensure reasonable homogeneity between sample characteristics and the intended target population.

Sample Size

Determining an appropriate sample size is a critical consideration in studies employing Partial Least Squares Structural Equation Modeling (PLS-SEM). The minimum sample size should be at least ten times the maximum number of structural paths directed at any single endogenous latent variable in the model.

In the conceptual framework of the present study, the primary dependent variable Willingness to Purchase Green Insurance has four incoming structural paths: Environmental Awareness, Environmental Concern, Environmental Attitude, and Trust in Insurance Companies. Based on this criterion, the minimum required sample size was 350 observations.

Following the broad distribution of the questionnaire and the subsequent screening of incomplete and invalid responses, a total of 397 usable questionnaires were collected. This sample size not only met but exceeded the minimum PLS-SEM requirements, thereby enabling additional group-based analyses (e.g., by Gender, Educational Level, or Insurance Usage Experience) and robustness checks of the proposed model.

The demographic composition of the sample was also relatively diverse, including participants spanning a wide range of age, gender, education, and income levels. This diversity supports the relative representativeness of the findings in relation to the target population.

Data Collection Instrument

The primary instrument for data collection was a structured questionnaire, designed based on established and internationally validated scales, which was translated, adapted, and culturally localized for the Iranian context. The questionnaire structure was devised to ensure comprehensive coverage of the model's constructs, while also enabling the assessment of construct validity and reliability.

Questionnaire Structure and Measurement Scales

Section 1: Demographic Information

This section included five control variables: Gender, Age, Educational Level, Monthly Income, and Insurance Usage Experience (Yes/No). These were measured to control for demographic effects and to identify potential differences in responses across various subgroups.

Section 2: Environmental Awareness

This construct was assessed through seven items adapted from Rehman et al. (2025) and Liu et al. (2020). These items captured a comprehensive spectrum of environmental knowledge, encompassing awareness of:

- Environmental issues in Iran
- Climate change and global warming
- Air and water pollution

- Pollution mitigation strategies
- The agricultural impacts of climate change
- The role of human activities in environmental degradation

All items were measured on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). This scale has been widely used in prior research, with established validity and reliability.

Section 3: Environmental Concern

Environmental Concern was operationalized as a second-order construct comprising three key dimensions, following the Value–Belief–Norm theory:

1. **Egoistic Concern:** Three items focusing on the perceived impact of environmental issues on the individual, their lifestyle, and health.
2. **Social–Altruistic Concern:** Three items assessing concern about the impact of environmental problems on all people, children, and the local community.
3. **Biospheric Concern:** Three items capturing concern about harm to plants, marine life, and bird species.

Responses were recorded on a five-point Likert scale (1 = Not Concerned at All to 5 = Extremely Concerned).

Section 4: Environmental Attitude

To assess Environmental Attitude, we utilized the revised six-item New Ecological Paradigm (NEP) scale developed by Dunlap et al. (2000), which probes respondents' views on:

- The relationship between humans and nature
- The inherent limits of natural resources
- Ecological balance
- The likelihood of environmental crises

Responses were obtained on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree).

Section 5: Trust in Insurance Companies

We measured trust using the multi-dimensional scale from Mayer et al. (1995), specifically adopting the six-item version applied to insurance studies by Cao et al. (2025). This instrument assesses various facets of trust, including:

- Honesty
- Ability
- Benevolence
- Expertise
- Reliability

All items were measured using a five-point Likert scale, assessing the degree of agreement with each statement.

Section 6: Willingness to Purchase Green Insurance

The main dependent variable was operationalized using five items adapted from Cai et al. (2025) and Ma & Wang (2025). These items captured:

- Likelihood of purchasing environmentally friendly insurance products
- Intention to purchase in the near future
- Willingness to pay a price premium
- Willingness to recommend to others
- Purchase prioritization of green insurance products

Responses were recorded on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree).

Validity and Reliability of the Instrument

The content validity of the questionnaire was assessed through feedback from five academic experts and specialists in the fields of green marketing, consumer behavior, and insurance management. Based on their evaluations, certain items were revised to ensure greater cultural alignment with the Iranian context.

Construct validity and reliability were subsequently established during the data analysis phase using SmartPLS version 3. The Cronbach's alpha values for all constructs exceeded 0.70, and composite reliability (CR) values were above 0.80, indicating satisfactory internal consistency of the measurement instrument.

Data Analysis Method

Data analysis was conducted in two main stages using SmartPLS version 3, a robust and widely recognized tool for Partial Least Squares Structural Equation Modeling (PLS-SEM). This approach is particularly suitable for analyzing complex models with multiple latent variables and multilevel structural relationships.

The choice of PLS-SEM in this study was grounded in three key considerations:

1. **Exploratory confirmatory nature of the research:** The aim was not only to test hypotheses but also to predict and explain variance in the dependent variable, in line with the predictive orientation of PLS.
2. **Model complexity:** The conceptual framework included a second-order construct (Environmental Concern with three dimensions), which PLS-SEM can effectively estimate.
3. **Data and sample characteristics:** The method offers greater flexibility regarding violations of normality assumptions and does not require very large samples.

Stage 1: Descriptive Analysis and Data Preparation

Prior to conducting the main analyses, the raw data from the 442 returned questionnaires were reviewed and screened. Questionnaires containing missing responses or originating from respondents who did not meet the eligibility criteria were excluded. Ultimately, 397 valid questionnaires remained for analysis.

Outliers were identified and examined using the Mahalanobis Distance method to ensure they did not have an adverse effect on model estimations.

Next, descriptive statistics (mean, standard deviation, skewness, kurtosis) were computed for all variables to verify data quality. An initial correlation matrix was also generated to provide a preliminary view of

relationships among variables and to identify potential multicollinearity risks. Variance Inflation Factors (VIF) were calculated for all independent variables, ensuring acceptable collinearity levels.

Stage 2: Measurement Model Assessment

This stage evaluated the quality of the latent constructs and the relationships between their indicators and the respective constructs. The analysis focused on three aspects:

(a) Reliability: Internal consistency reliability was assessed using Cronbach's alpha and composite reliability (CR). Threshold values of $\alpha \geq 0.70$ and $CR \geq 0.80$ were considered acceptable.

(b) Convergent Validity: Convergent validity was evaluated via the Average Variance Extracted (AVE) index. AVE values greater than 0.50 indicate that the construct explains more than half of the variance in its indicators, signifying adequate convergence.

For the second-order construct Environmental Concern, which was estimated using the two-stage approach, the direct reliability and AVE indices were not computed in SmartPLS outputs, and are therefore indicated by a dash in Table 1. For this construct, reliability and convergent validity were assessed based on its first-order dimensions (Egoistic Concern, Social Altruistic Concern, and Biospheric Concern).

Table 1. Convergent Reliability Indices

Variable	Cronbach's Alpha	rho_A	Composite Reliability (CR)	Average Variance Extracted (AVE)
Age	1.000	1.000	1.000	1.000
Education	1.000	1.000	1.000	1.000
Gender	1.000	1.000	1.000	1.000
Insurance Usage Experience	1.000	1.000	1.000	1.000
Income	1.000	1.000	1.000	1.000
Trust in Insurance Companies	0.941	0.944	0.953	0.772
Environmental Awareness	0.940	0.940	0.951	0.734
Willingness to Purchase Green Insurance	0.911	0.911	0.934	0.738
Environmental Concern	—	1.000	—	—
Environmental Attitude	0.934	0.936	0.948	0.752

Source: Research Findings

(c) Discriminant Validity: To ensure that each construct is distinct from the other constructs in the model, the Fornell–Larcker criterion was employed. According to this criterion, the square root of the Average Variance Extracted (AVE) for each construct should be greater than its correlations with other constructs. The indicators of discriminant validity are presented in Table 2.

Table 2. Indicators of Discriminant Validity

	Age	Education	Gender	Experience in Using Insurance Services	Income	Trust in Insurance Companies	Environmental Awareness	Willingness to purchase green insurance	Environmental Concern	Environmental Attitude
Age	1.000									
Education	-0.009	1.000								
Gender	0.040	0.068	1.000							
Experience in Using Insurance Services	-0.086	0.324	-0.034	1.000						
Income	-0.066	0.413	0.016	0.788	1.000					
Trust in Insurance Companies	-0.012	0.201	-0.014	0.244	0.267	0.879				
Environmental Awareness	-0.014	0.246	0.018	0.454	0.465	0.091	0.857			
Willingness to purchase green insurance	-0.070	0.451	-0.027	0.783	0.881	0.323	0.536	0.859		
Environmental Concern	0.020	0.164	0.006	0.032	0.193	0.038	0.168	0.238		
Environmental Attitude	-0.057	0.251	0.034	0.406	0.488	0.086	0.509	0.551	0.232	0.867

Source: Research Findings

Step 3: Evaluation of the Structural Model

After confirming the quality of the measurement model, the evaluation of the structural model was conducted. In this stage, the causal relationships among the latent variables were examined, and the research hypotheses were tested. The main evaluation indicators are as follows:

(a) Path Coefficients: These coefficients represent the strength and direction of the relationships between variables. The statistical significance of the path coefficients was assessed using the bootstrapping method with 5,000 resamples, through the calculation of t-statistics and p-values.

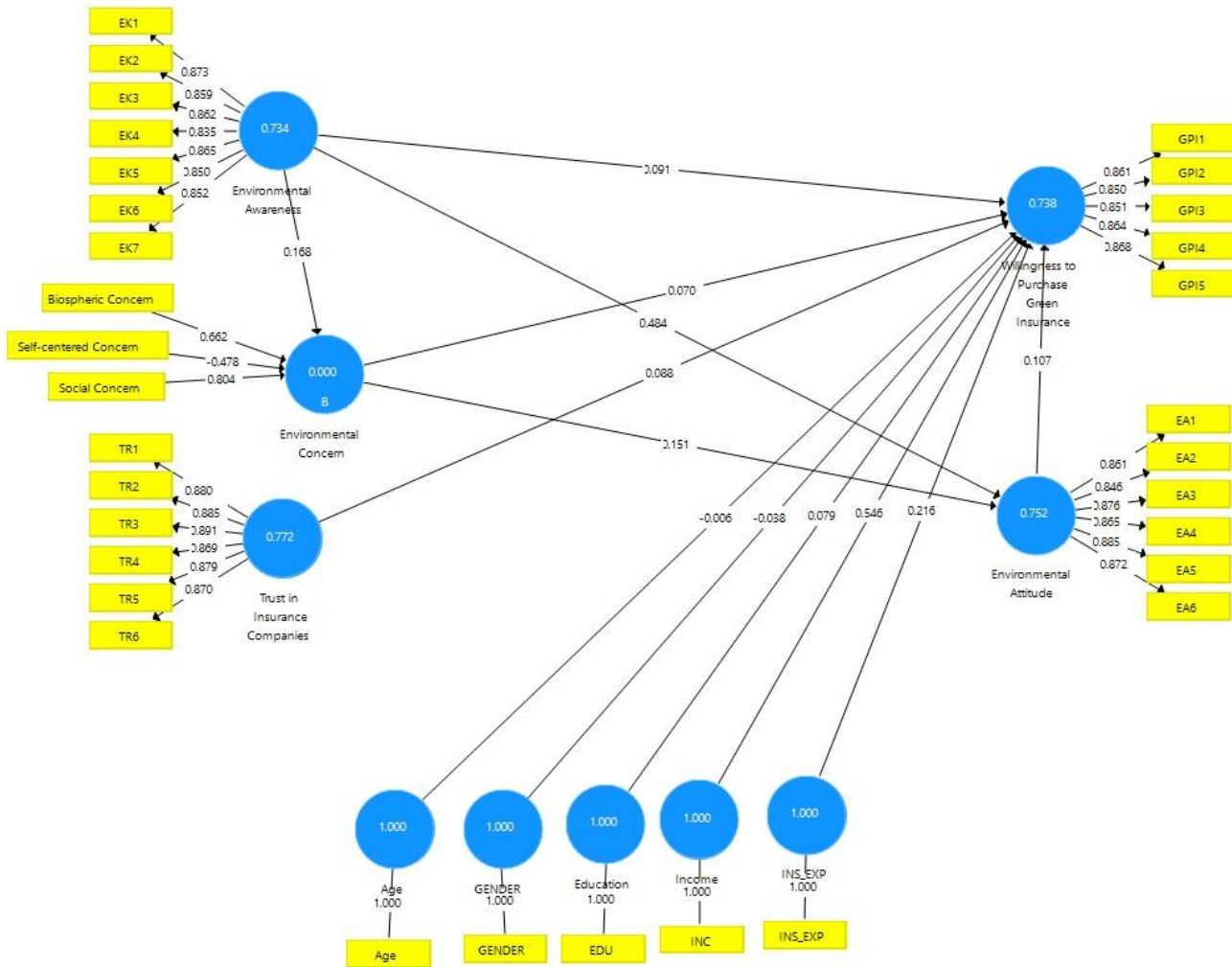
(b) Coefficient of Determination (R^2): This index indicates the proportion of variance in the dependent variable explained by the independent variables. R^2 values of 0.25, 0.50, and 0.75 represent weak, moderate, and strong explanatory power, respectively.

(c) Effect Size (f^2): This measure assesses the impact of each independent variable on the dependent variable. f^2 values of 0.02, 0.15, and 0.35 correspond to small, medium, and large effect sizes, respectively.

(d) Predictive Relevance (Q^2): Using the Blindfolding approach, the Q^2 statistic was computed to evaluate the model's predictive capability. Positive Q^2 values indicate that the model possesses satisfactory predictive relevance.

Results

To analyze the results section, the research hypotheses were examined. The path coefficients of the conceptual research model are presented in Figure 2.



Source: Research Findings

Figure 2. Results of the Estimated Research Model

Hypothesis Testing

In this section, the results of testing the main research hypotheses are presented based on the bootstrapping analysis. Table 3 provides a summary of the hypothesis testing results.

Table 3: Path Coefficients and Test Results of the Study's Main Hypotheses

Hypothesis	Pathway	Path Coefficient (β)	Sample Mean	Standard Deviation	t-statistic	p-value	Result
H ₁	Environmental Awareness → Willingness to purchase green insurance	0.091	0.089	0.025	3.677	0.000	The hypothesis was confirmed
H ₂	Environmental Concern → Willingness to purchase green insurance	0.070	0.068	0.024	2.954	0.003	The hypothesis was confirmed
H ₃	Environmental Attitude → Willingness to purchase green insurance	0.107	0.106	0.030	3.552	0.000	The hypothesis was confirmed
H ₄	Trust in Insurance Companies → Willingness to purchase green insurance	0.088	0.086	0.022	4.028	0.000	The hypothesis was confirmed

Source: Research Findings

Environmental Awareness and the Intention to Purchase Green Insurance

The analysis results indicate that environmental awareness has a positive and significant effect on the intention to purchase green insurance. The path coefficient is 0.091, implying that a one-unit increase in environmental awareness leads to a 0.091 standard deviation increase in the intention to purchase green insurance. The sample mean is 0.089, which closely aligns with the original coefficient, demonstrating the stability of this estimate across resampling iterations. The standard deviation of the coefficient is 0.025, indicating an acceptable level of estimation precision.

The t-statistic equals 3.677, which is well above the critical value of 2.58, and the p-value is 0.000, i.e., less than 0.001. These findings reveal that the relationship between environmental awareness and purchase intention is significant at the 99.9% confidence level, thereby providing strong support for the first research hypothesis. Although the coefficient magnitude is relatively small, its high level of significance suggests that environmental awareness serves as a crucial prerequisite in consumers' decision-making processes regarding the purchase of green insurance.

Environmental Concern and the Intention to Purchase Green Insurance

The results demonstrate that environmental concern has a positive and significant impact on the intention to purchase green insurance. The path coefficient is 0.070, indicating that a one-unit increase in environmental concern leads to a 0.070 standard deviation increase in the intention to purchase green insurance. The sample mean of 0.068 shows excellent consistency with the original coefficient, confirming the stability of the estimate. The standard deviation is 0.024, reflecting an acceptable level of precision. The t-statistic equals 2.954, exceeding the critical value of 2.58, and the p-value is 0.003, which is less than 0.01. These results confirm that environmental concern significantly influences purchase intention at the 99% confidence level, thereby supporting the second hypothesis. Environmental concern serves as an emotional and motivational

driver, as individuals who are more worried about environmental consequences are more likely to exhibit a stronger intention to purchase green insurance products.

Environmental Attitude and the Intention to Purchase Green Insurance

Environmental attitude also exerts a positive and significant effect on the intention to purchase green insurance. The path coefficient is 0.107, suggesting that individuals with a more positive general outlook toward environmental protection tend to demonstrate a greater intention to purchase green insurance. The sample mean of 0.106 nearly equals the main coefficient, showing excellent consistency. The standard deviation of 0.030 one of the smallest among all paths indicates high estimation precision. The t-statistic is 3.552, which is well above the critical value of 2.58, and the p-value is 0.000 (i.e., less than 0.001). These findings show that environmental attitude has a highly significant impact on purchase intention at the 99.9% confidence level, fully supporting the third research hypothesis. Moreover, environmental attitude plays a partial mediating role in the model, transmitting part of the effect of environmental concern on the intention to purchase green insurance.

Trust in Insurance Companies and the Intention to Purchase Green Insurance

Trust in insurance companies has a strong and highly significant effect on the intention to purchase green insurance. The path coefficient is 0.088, indicating that a one-unit increase in trust leads to a 0.088 standard deviation increase in purchase intention. The sample mean of 0.086 aligns closely with the main coefficient, demonstrating excellent stability. The standard deviation of 0.022 is the smallest among all paths, reflecting the highest estimation precision. The t-statistic equals 4.028, the largest among all model paths, and the p-value is 0.000 (less than 0.001). These results indicate that trust in insurance companies significantly affects the intention to purchase green insurance at the 99.9% confidence level, providing the strongest empirical support for the fourth hypothesis. Trust plays a vital role in the insurance industry, which is inherently based on long-term contractual relationships and future promises. It acts as a mechanism to reduce uncertainty and perceived risk in the purchase of intangible services such as green insurance.

Mediating Effects

To examine the mediating roles of environmental attitude and environmental concern in the relationships between cognitive variables and the intention to purchase green insurance, indirect path analyses were conducted using the bootstrapping method with 5,000 resamples in SmartPLS 3. The t-statistics and p-values for each indirect path were computed to assess the significance of the mediating relationships. Table 4 presents the results of the three mediation hypotheses tests.

Table 4: Path Coefficients and Hypothesis Test Results of the Study's Mediating Variables

Hypothesis	Pathway	Path Coefficient (β)	Sample Mean	Standard Deviation	t-statistic	p-value
H ₅	Environmental Awareness → Environmental Attitude → Willingness to purchase green insurance	0.052	0.051	0.015	3.347	0.001
H ₆	Environmental Concern → Environmental Attitude → Willingness to purchase green insurance	0.016	0.016	0.007	2.289	0.022
H ₇	Environmental Awareness → Environmental Concern → Willingness to purchase green insurance	0.012	0.012	0.006	2.095	0.037

Source: Research Findings

Analysis of Indirect Paths

The analysis of indirect effects, conducted through the bootstrapping method with 5,000 resamples, revealed the mediating roles of environmental attitude and environmental concern in the relationships between cognitive variables and the intention to purchase green insurance.

The results indicated that environmental awareness, through environmental attitude, exerts a positive and significant indirect effect on the intention to purchase green insurance. The coefficient of this indirect effect was 0.052, with a sample mean of 0.051, and a t-statistic of 3.347 with a p-value less than 0.001, indicating that this path is supported with a very high level of confidence. This finding suggests that an increase in individuals' knowledge and understanding of environmental issues and consequences fosters a positive and enduring attitude toward the environment, which, as a powerful motivational force, significantly enhances their interest in and intention to purchase environmentally friendly insurance policies.

Moreover, environmental concern also affected the intention to purchase green insurance through environmental attitude. The coefficient for this path was 0.016, with a sample mean of 0.016, and a t-statistic of 2.289 accompanied by a p-value of 0.022, confirming the statistical significance of this relationship. This result clearly indicates that the more sensitive and concerned individuals are about the state of the environment, the more positive their attitude toward its protection becomes an attitude that, in turn, motivates them to accept and purchase green insurance products. Given that the direct effect of environmental concern on purchase intention was also confirmed in the model, the mediating role of environmental attitude in this relationship is partial.

Additionally, another indirect relationship was observed, in which environmental awareness influenced the intention to purchase green insurance through environmental concern. The coefficient for this path was 0.012, with a sample mean of 0.012, and a t-statistic of 2.095 along with a p-value of 0.037, indicating a statistically significant relationship. This finding suggests that increasing awareness of environmental threats and solutions enhances individuals' sense of concern and personal responsibility toward environmental conditions. This emotional concern, in turn, stimulates green purchasing behavior in the context of insurance. In other words, awareness functions as a cognitive trigger that activates environmental concern, which subsequently strengthens the intention to adopt sustainable insurance products.

Overall, the results of the mediation path analysis confirmed that all three tested indirect relationships were statistically significant, thereby supporting all three mediation hypotheses.

Effects of Control Variables

In this study, five control variables age, gender, education, income, and insurance usage experience were incorporated into the model based on the bootstrapping analysis in order to control for their potential effects on the dependent variable. Table 5 presents these control variables.

Table 5: Path Coefficients and Hypothesis Test Results of the Study's Control Variables

Hypothesis	Control Variable	Path Coefficient (β)	Sample Mean	Standard Deviation	t-statistic	p-value
H ₈	Age	-0.006	-0.006	0.021	0.296	0.767
H ₉	Gender	-0.038	-0.039	0.020	1.870	0.062
H ₁₀	Education	0.079	0.081	0.024	3.355	0.001
H ₁₁	Income	0.546	0.548	0.048	11.352	0.000
H ₁₂	Insurance Usage Experience	0.216	0.214	0.034	6.287	0.000

Source: Research Findings

Analysis of the Effects of Control Variables

The objective of analyzing control variables is to ensure that the core relationships in the model are not biased or substantially altered by the demographic or economic characteristics of respondents. In this model, five variables age, gender, education, income, and insurance experience were treated as external controls. Using the bootstrapping method in SmartPLS, the path coefficients, t-statistics, and significance levels were computed for each.

The results revealed that age not only had a negative path coefficient (-0.006) but also yielded a t-value of 0.296 and a p-value of 0.767, indicating that this relationship is statistically insignificant. This lack of significance implies that age differences do not meaningfully influence the intention to purchase green insurance; instead, factors such as attitude and economic status play more prominent roles in decision-making. Interestingly, the negative sign of the coefficient suggests a slight decline in purchase inclination with increasing age, though the effect is too weak to be considered reliable. Hence, Hypothesis H_8 is rejected.

For gender, the path coefficient was -0.038 , with a t-value of 1.870 and a p-value of 0.062. Although the coefficient indicates a directional difference, this effect is not statistically significant at the 95% confidence level. In other words, while there is a slight numerical indication of gender-based variation, it is not confirmed statistically. Therefore, Hypothesis H_9 is also rejected. Nonetheless, the negative coefficient direction may warrant further investigation in future studies with larger samples.

The findings for education, however, differ notably. The path coefficient of 0.079, with a t-value of 3.355 and a p-value of 0.001, indicates a positive and statistically significant effect. Simply put, higher levels of education correspond to greater intentions to purchase green insurance. This result aligns with the existing literature, as more educated individuals tend to possess a deeper understanding of environmental consequences and the importance of supporting sustainable products. Their capacity to evaluate the social and ecological benefits of such products is also more developed. Accordingly, Hypothesis H_{10} is supported.

Regarding income, the analysis yielded a path coefficient of 0.564, one of the highest among the control variables, with a t-value of 11.352 and a p-value of 0.000. This relationship is both highly significant and very strong, suggesting that greater financial capacity substantially increases the willingness to pay for green insurance. Individuals with higher income levels generally have more financial flexibility and are more inclined to pay a premium for environmentally sustainable product attributes. Therefore, Hypothesis H_{11} is confirmed.

Finally, insurance experience exhibited a path coefficient of 0.216, with a t-value of 6.287 and a p-value of 0.000, indicating a positive and highly significant effect. This finding highlights that familiarity with insurance services both administratively and through personal experience of their benefits enhances individuals' readiness to purchase green insurance. Past experience builds trust and confidence, which lowers psychological resistance to adopting innovative insurance offerings. Consequently, Hypothesis H_{12} is supported.

Overall, the results demonstrate Education, income, and previous insurance experience were found to exert meaningful but moderate effects on consumers' inclination to purchase green insurance. These socio-economic factors provide initial insights but should not be considered dominant predictors without further longitudinal evidence. This finding carries an important managerial implication: green insurance marketing strategies should focus more intensively on highly educated, higher-income, and insurance-experienced groups, as these segments exhibit greater readiness and motivation to adopt green innovations.

Discussion and Conclusion

The findings of this study, aimed at identifying the factors influencing the intention to purchase green insurance in Iran, present a comprehensive framework of structural relationships among cognitive, emotional, and attitudinal variables. This framework provides valuable insights for both academics and insurance industry

policymakers, from theoretical and practical perspectives alike. The results of the structural equation modeling (SEM) confirmed that all the main hypotheses were supported at high levels of statistical significance, indicating that the proposed model possesses a strong explanatory power in predicting consumers' intention to purchase green insurance. This finding affirms the applicability of the adopted theoretical framework integrating the Theory of Planned Behavior (TPB), the Knowledge–Attitude–Behavior (KAB) model, and the Environmental Values Theory within Iran's unique cultural and economic context.

Environmental awareness, as the first predictive variable, was found to have a positive and significant effect on the intention to purchase green insurance. This result aligns with previous research on green consumer behavior, confirming that knowledge and awareness of environmental issues form the foundation of sustainable behavioral tendencies. However, the relatively small path coefficient suggests that awareness alone is necessary but not sufficient, and it must be reinforced by motivational and attitudinal factors. This supports the well-known knowledge behavior gap paradox in environmental behavior literature, which posits that awareness does not automatically translate into action. In the Iranian context where environmental crises such as water scarcity, air pollution, and dust storms are tangible realities public awareness is growing, yet it has not fully translated into green consumer actions. Therefore, insurance companies and policymakers should move beyond simple information campaigns and work toward fostering a deeper understanding of the direct link between green insurance purchases and environmental impact reduction.

Environmental concern, as an emotional motivational driver, also showed a significant effect on the intention to purchase green insurance. Conceptualized through its egoistic, social altruistic, and biospheric dimensions, environmental concern acts as a bridge between knowledge and action by adding emotional urgency to cognitive awareness and encouraging responsible decision-making. Importantly, environmental concern influences purchase intention both directly and indirectly through environmental attitude, highlighting its dual mechanism of action. This emphasizes the strategic importance of emotional engagement and suggests that marketing campaigns should address both cognitive and affective dimensions of consumer behavior. In Iran, where environmental sensitivity is gradually increasing, especially among the younger generation, leveraging this concern in product design and marketing communication can enhance consumer acceptance of green insurance.

Environmental attitude, measured based on the New Ecological Paradigm (NEP), played a significant mediating role in the model, confirming that individuals' worldview regarding the relationship between humans and nature is a key determinant of behavioral tendencies. Those who perceive nature as intrinsically valuable and acknowledge the limits of natural resources are more inclined to support products and services consistent with such beliefs. The mediating role of attitude indicates that part of the effect of environmental concern on purchase intention operates through reinforcing sustainable attitudes. This underscores the importance of long-term environmental education and cultural transformation, as attitude change is a gradual process requiring consistent interaction and message alignment. In Iran where anthropocentric views of nature remain prevalent cultivating ecological perspectives can be achieved through collaboration among educational institutions, media outlets, and NGOs.

One of the most critical findings of this study is the highly significant effect of trust in insurance companies on the intention to purchase green insurance. This variable exhibited the strongest statistical significance among all model paths, confirming that in the insurance industry by nature reliant on future promises and long-term contracts trust is an indispensable element. Trust serves as a mechanism to reduce perceived risk and uncertainty, and in its absence, even well-informed and environmentally conscious consumers may refrain from purchase. This finding is particularly important in the Iranian context, where the insurance sector faces challenges in building trust due to consumers' negative experiences with claim processes, service opacity, and bureaucratic inefficiencies. Hence, for the successful implementation of green insurance, companies must prioritize the reconstruction of public trust through transparency, verified environmental reporting, simplified procedures, and the consistent fulfillment of commitments. Moreover, avoiding greenwashing practices, which can quickly undermine trust, is essential.

The analysis of control variables also yielded noteworthy insights. Income emerged as the strongest determinant among them, confirming that purchasing power is a fundamental prerequisite for accessing green insurance products. This suggests that green insurance, at its early development stage, is likely to appeal primarily to higher-income segments; therefore, differentiated pricing strategies and diverse insurance packages are necessary to attract a broader customer base. Previous insurance experience also had a significant positive effect, underscoring the importance of customer loyalty and the role of existing clients as a primary market for innovative products. Furthermore, education demonstrated a significant positive relationship with purchase intention, consistent with green consumer behavior theory. Higher educational attainment enhances awareness, analytical ability, and understanding of the long-term implications of consumption choices. In the case of green insurance an inherently complex and abstract product such cognitive capability plays a key role in reducing perceived risk and increasing trust in environmental innovations.

From a theoretical perspective, this study extends the literature on green consumer behavior in the financial and insurance sectors, where research remains limited compared to tangible green products. Modeling environmental concern as a second-order construct with three distinct dimensions offers deeper insights into motivational mechanisms. Additionally, the simultaneous examination of cognitive, affective, attitudinal, and trust-related variables within an integrated framework provides a more holistic understanding of green purchasing decision-making.

From a practical standpoint, the findings offer several implications for insurance companies and policymakers:

Develop educational campaigns to raise environmental awareness and clearly communicate the link between green insurance and environmental protection.

Incorporate emotional appeals by emphasizing environmental concern in marketing communications.

Prioritize trust-building through transparency, regular reporting, and the consistent fulfillment of commitments.

Target high-income and existing customers as the initial market segment and gradually expand outreach.

Design diverse product portfolios with flexible pricing to meet the needs of various customer groups.

Like all studies, this research has certain limitations that must be considered when interpreting its findings. First, the cross-sectional design limits causal inference. Second, the use of self-reported data may involve social desirability bias. Third, the geographical scope of the sample restricts generalizability to other regions of Iran. Future studies may adopt longitudinal designs to track temporal changes in attitudes and actual purchasing behaviors. Additionally, exploring variables such as social norms, perceived behavioral control, and reference group influence could further enrich the model. Qualitative studies may also offer deeper insight into the motivations and barriers surrounding green insurance adoption. Moreover, future research could extend the theoretical scope by incorporating more contemporary behavioral frameworks such as the Pro-Environmental Behavior Theory (PEBT). Including constructs like personal moral norms, perceived responsibility, and value internalization would allow for a more comprehensive understanding of the motivational and normative mechanisms underlying green insurance adoption.

In conclusion, this study suggests that developing the green insurance market in Iran is both feasible and promising; however, its broader success will depend on further evidence-driven validation and scaling of initiatives across diverse regions and demographic groups. However, success in this domain requires a comprehensive approach that simultaneously integrates education, cultural transformation, trust-building, and product innovation to foster sustainable behavioral change.

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