

# From Knowledge and Values to Green Investment: Analyzing The Mediating Role of Attitude

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Received: December 17, 2025, Accepted: January 12, 2026, Published: January 23, 2026

## Abstract

This study investigates the motives of Indian investors about how their psychosocial mechanisms influence driving green investment and how it is interlinked with their environmental knowledge, personal values, attitudes towards sustainable investing, and behavioral intentions. Using PLS-SEM in smartPLS 4.0, the data of 455 retail investors in Bangalore were collected through a cross-sectional survey. The results indicate that personal values are pivotal in shaping individuals' attitudes towards green investment intentions. Environmental knowledge exerts an indirect influence on behavioral intentions by forming favorable attitudes, indicating an upstream catalyst to change behavior. This framework explains 44% of the variance in attitude and 50% in investment intentions, indicating predictive power. Overall, these findings emphasize the critical mediating function of attitude and the basic role of values and knowledge in facilitating investment behavior in a sustainable manner. The study gives an insight for financial institutions, policymakers, and advisory professionals in promoting Green Investment Intention with individual ethical perspectives towards broader sustainable development goals.

**Keywords:** Attitude; Environmental Knowledge; Green Investment; Personal Values; SDG.

## 1. Introduction

Climate change, global warming, and resource depletion have become significant issues in current world discussions among academics, researchers, and policymakers.(Chițimiea et al., 2021) These ecological issues tend to make it much harder to reach sustainable development as they cause extreme weather events, rising sea levels, and disruptions to ecosystems.(Yan et al., 2023) The steady increase in global economic growth and human activities has contributed to the rising CO2 emissions and environmental deterioration, emphasizing the urgent need for carbon neutrality and ecological balance.(Temesgen Hordofa et al., 2023). As a result, it is important to study the factors that encourage the sustainability of economic growth. (Lyeonov et al., 2019). Environmental degradation has significantly impacted the investment intention of public as well as private capital towards green financial products in direct response to these growing concerns. (Temesgen Hordofa et al., 2023). Polluting business entities are facing increasingly strict environmental regulations and increased pressure from customers, investors, and public administrations for greater transparency regarding their environmental practices (Chueca Vergara & Ferruz Agudo, 2021). As a result, the financial industry has started creating numerous green financial products such as green bonds, Green ETFs, and green loans to link financial markets with responsible behaviour towards the environment (Ye & Dela,2023). The United Nations (UN) Sustainable Development Goals (SDGs) emphasise the need for green investment, especially in climate-resilient projects like clean energy and Smart and sustainable cities that align with the worldwide transformation in investment priorities (Sachs et al., 2019). In response to investor demands and regulatory challenges, companies and financial institutions are actively adapting through green financing and investment. Companies, which are known to utilise a lot of natural resources and cause a lot of environmental problems, are now considering environmental aspects when making investment choices. (Y. Chen & Feng, 2019). Green investments are conceptualized as one of the aspects of corporate social responsibility (CSR) and are defined as various resource allocations to firms or projects that embrace the betterment of sustainable approaches, sustainable technologies, and natural resource preservation to reach environmental goals and improve performance. Climate finance plays a key role in enabling sustainable outcomes by channeling capital into projects that are beneficial to the environment, supported by financial instruments related to green loans and green securities. These mechanisms spur innovation, therefore opening up more opportunities for the greening of economies. According to Kwilinski et al. (2023), this involves regulatory frameworks, tax incentives, and environmental levies put in place by governments. Meanwhile, the emergence of FinTech increased the efficiency and standardization of sustainable finance services (Chițimiea et al., 2021; Yan et al., 2023). Regardless of the fact that GII has received increasing scholarly attention, inconsistent findings have been yielded across different extant literature contexts. Earlier studies have had quite varied outcomes regarding the determinants of sustainable investment decisions and factors influencing such behavior. Though green finance has recently gained substantial interest internationally, investigations of green investment intentions reveal significant contradictions, particularly while employing the 'Theory of Planned Behavior' in different geographical and demographic contexts. For instance, Hemdan and Zhang (2024) report that "attitude, subjective norms, and perceived

behavior control all strongly influence investors' intention toward green investments" in Egyptian participants, whereas Malzara et al. (2023) note that for Gen-Z green investment intention in Jakarta, it has been shown that subjective norms have no significant influence. Moreover, some conflicting findings are also shown in the literature with respect to knowledge and financial literacy. Thapa and Kafle (2025) show that sustainable investment knowledge significantly moderates the attitude-green investment intentions link of Generation Z investors, but do not find significant moderating effects on the links involving subjective norms or perceived behavioral control. However, Aliedan et al. (2023) reveal that insights on green finance have a direct favorable impact on GII, and religiosity cannot moderate the path between green investment understanding and willingness to invest. Furthermore, one study found subjective norms to be the most vital antecedent in the context of responsible investing (Thanki et al., 2022); other studies have indicated that young investors in particular lack mentors who can help them in financial decision-making, which results in negligible effects of social norms on investment intentions (Paramita et al., 2018). Such inconsistent results highlight the gaps in knowledge with respect to how TPB constructs, knowledge variables, and cultural factors shape Green Investment intention in emerging markets and thus pose a need for a refined approach by academicians with respect to understanding a variety of contextual factors, generational differences, and cross-cultural variations about GI intentions in developing markets.

To resolve these inconsistencies and maintain theoretical parsimony, this research incorporates environmental knowledge, personal values, and attitude as fundamental psychological predictors of green investment intention. The approach has several advantages. First, previous studies reported mixed and often weak effects for subjective norms and perceived behavioral control in green investment contexts (Hemdan & Zhang, 2024; Malzara et al., 2023), especially within emerging markets, where normative influences may be less salient than individual values and attitudes. Second, attitude is the most proximal psychological predictor of behavioral intention across the spectrum of behavioral theories and thus is the natural focus for intervention and policy design. Third, the lean EK–Values–Attitude pathway maintains conceptual coherence without model over-specification, thus allowing clearer identification of the core mechanisms underlying green investment behavior.

This paper focuses on the key psychological drivers in shaping the sustainable investment propensity, how attitude mediates between the environmental knowledge, values, and the intentions to engage in such activities. The results offer actionable insights into the psychological mechanisms underlying the sustainability decisions. Policymakers can leverage these findings in implementing targeted programs in re-shaping attitudes that accelerate capital flows into clean technology, renewable energy, and sustainable infrastructure. These could also be used by financial institutions in the development of instruments and marketing tactics that better align with investors' environmental awareness and values.

Research questions:

- RQ1: How do environmental knowledge and personal values influence the formation of individual investors' attitudes toward green investment?
- RQ2: To what degree do attitudes toward green investment and its antecedents determine green investment intention?

## 2. Literature Review

### 2.1. Environmental knowledge

"Environmental knowledge is described as a general understanding of facts, concepts, and relationships regarding the natural environment and its major ecosystems" (Fryxell & Lo, 2003). This basic concept underpins the psychological models such as the 'Knowledge-Belief-Norm' model, 'Knowledge-Attitude-Behavior' model, and the 'Theory of Planned Behavior', in which it represents an internal cognitive factor and a precursor for conscious involvement with ecological questions (Amoah & Addoah, 2021; Fenitra et al., 2024; Motamedi-Barabadi et al., 2023). Conceptually, EK is best viewed as a multidimensional construct comprising both a general understanding of ecological issues and specific, actionable knowledge related to the ability to recognize eco-friendly symbols and behavior (Adialita et al., 2024; Kusmantini et al., 2021). Embedded within broader models of influence, EK forms part of Environmental Literacy, which involves individuals' ability to acknowledge environmental problems, assess these problems, and then develop appropriate actions to solve them and protect the environment (Osei, 2025). Pragmatically, the attainment of EK provides an opportunity for individuals to grasp the consequences of environmental challenges and thus develop positive attitudes toward green products and encourage sustainable consumption (Sendawula et al., 2024). However, there is a profound trend in empirical literature where the direct link between general EK and pro-environmental behavior or PEB usually appears to be small or inconsistent, indicating that its influence may be essentially indirect through other factors such as ecological attitude or concern (Amoah & Addoah, 2021; Motamedi-Barabadi et al., 2023). According to Azad et al. (2024), concerns over the environment form one of the important motivators toward shaping the attitude of investors in sustainable bond investment, even though this factor turned out to be weaker than other important factors like behavioral control perception and attitude in the development of decisions. Moreover, according to Laheri et al. (2024), EK is one of the three major environmental variables to exert a positive influence on the attitude of consumers toward purchasing eco-friendly products in enhancing eco-awareness and sustainable purchase behavior. Building on this relationship, especially on investor choice and sustainable development in emerging markets, this study examines how EK predicts the Attitude and Intention of retail investors towards Green Investment.

### 2.2. Personal values

Personal values are guidelines that help individuals and organizations make decisions that can arise in any context. According to Jansson & Biel (2014) and Stern et al. (1999), personal values are enduring beliefs that provide the motivational basis for human behavior. These beliefs shape how people or groups make important choices (Raut & Kumar, 2023; Singh et al., 2021). Scholars have integrated this connection through some key behavioral frameworks: the 'Value-Belief-Norm theory' (Stern et al., 1999) and the 'Value-Attitude-Behavior' model (Homer & Kahle, 1988). There are three main underlying value orientations in sustainable behavior: 'biospheric values', 'altruistic values', and 'egoistic values' (Martin & Czellar, 2017). These perspectives have great significance in Socially Responsible Investing, where investors deliberately connect different social, moral, and ecological elements into their investment decisions (Adam & Shauki, 2014). This accounts for how people can connect their personal financial gain with broader social and ecological perspectives (Raut & Kumar, 2023). For instance, research showed that collectivism and pro-environmental attitude significantly predict favorable perceptions toward SRI (Singh et al., 2021). The VBN framework describes how an activation of deeply held values and beliefs at a personal level, through the evocation of moral obligations, instills a person with a duty to act in concert with ethical judgments regarding their investment decisions.

### 2.3. Attitude

“Attitude can be described as the extent to which an individual favors or disfavors the performance of a particular behaviour (Ajzen, 1991).” This fundamental psychological element is the basis for the ‘Theory of Planned Behavior’ (TPB) and asserts that “Intentions, the immediate antecedent to action, are mostly influenced by attitudes, subjective norms, and perceived behavioral control (Ajzen, 1991; Ajzen & Fishbein, 1977).” Attitudes are viewed as internal and intrinsic forces that serve to motivate an individual to consider the evaluations and the subjective desirability of performing a particular action. It acts as a basis to assess an individual's in-depth impression of a behavior comprising both favorable and unfavorable attitudes (Zhang et al., 2024). A positive attitude has long been identified as better supporting subsequent behavioral intention (X. Chen et al., 2022; Han et al., 2010). Specifically, in a finance-related setting, investor attitude remains a critical influencing factor for capital allocation (Thanki et al., 2022; Zhang et al., 2024); hence, act as a driving force that determines one's willingness to perform a particular behavior (Ajzen, 1991). Recent studies support validates this significance: attitudes toward a particular issue were shown to be a strong driver for increasing positive green purchase intention (Zhuang et al., 2021), a positive attitude toward investing in renewable energy (Yee et al., 2022); thus, attitudes exert as a strong influence toward sustainable investment intention (Garg et al., 2022; Sultana et al., 2018). Particularly in a finance-related decision-making process, having a positive attitude toward green/sustainable projects remains a critical determinant for influencing Investment Intention, a commitment toward future investment behavior.

### 2.4. Theoretical integration and model development

Recent work suggests that blending elements from ‘VBN theory’, the ‘Knowledge-Attitude-Behavior’ framework, and the ‘Theory of Planned Behavior’ offers the most robust lens for unpacking the interactions among environmental knowledge, personal values, attitude, and green investment intentions. An integrated model helps to address important shortcomings in early formulations of TPB by fusing cognitive and behavioral factors with morally grounded influences rooted in beliefs and norms (Mabaso et al., 2025). In that perspective, the KAB-VBN pathway extends the TPB framework upstream by illustrating how knowledge, values, and beliefs influence normative processes and attitudinal development, demonstrating ways in which environmental awareness and personal beliefs actually influence behavioral determinants.

Empirical studies continue to confirm the psychological predictors based on these theoretical frameworks. EK and EC are two of the most explored antecedents that affect the formation of green attitude and subsequent intentions. Recent evidence reveals that EK significantly and positively impacts attitude formation (Rehman, 2025), while the innate flexibility of the extended form of TPB allows researchers to incorporate context-specific variables that further theoretical discourses related to sustainable investment behavior (Motamedi-Barabadi et al., 2023). However, to maintain parsimony and a focus on the main cognitive and affective determinants, this research focuses on the EK-Values-Attitude pathway for a number of reasons: first, inconsistent results from subjective norms and perceived behavioral control in the existing green investment literature indicate that these components of TPB may have limited applicability in emerging market settings; second, attitude is the most proximal psychological determinant across the theories of behavior, which makes it an appropriate focal point for explaining intention formation; and third, a focus on a smaller set of theoretically central variables can be used to increase model interpretability while preserving sufficient explanatory power to fill existing research gaps.

Studies affirm that attitude acts as a critical mediating variable that transforms both EK and EC into behavioral intention (Lee et al., 2023). Another study involving direct associations to focus upon shedding light through verifications, wherein the results demonstrate that environmentally-guided attitudes significantly and constructively predict the investment intentions to utilize solar energy in the deprived economic regions (Jabbour Al Maalouf et al., 2024). Moreover, an integrated concept concerning environmental knowledge, values, and attitudes offers a widely studied perspective to understand cognitive, affective, and motivational processes to make sustainable investment decisions.

Drawing upon insights from the literature review, we formulated the following hypotheses to guide this study:

- H1: Environmental knowledge (EK) has a major positive impact on Attitude (ATT)
- H2: Personal Values (PV) have a significant effect on Attitude (ATT)
- H3: Attitude (ATT) toward green investment is positively associated with Green Investment Intention (GII)
- H4: Environmental knowledge has a direct positive effect on GII
- H5: Personal Values have a substantial positive direct effect on GII
- H6: Attitude mediates the relationships between Environmental Knowledge and GII
- H7: Attitude mediates the relationships between personal values and GII

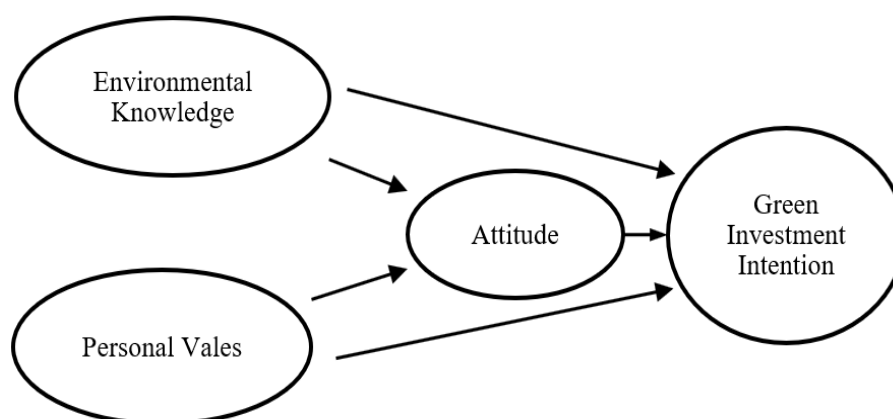


Fig. 1: Conceptual Research Model.

### 3. Methodology

#### 3.1. Measurement and population

A cross-sectional research design has been utilized in this study to gather the data from retail investors residing in Bangalore, India, who invested in the Indian stock market during the period of June 2025- October 2025. Convenience sampling was applied by the researcher due to the inaccessibility of the population and for practical reasons. While the sampling method allows easy data collection, it limits the generalization of results to Indian retail investors in general or to investors in other geographic locations. The findings shall be viewed to pertain to Bangalore and may not indicate a trend observable in other Indian cities or in emerging economies with different socio-economic and cultural environments. A quantitative approach, along with a structured questionnaire, is utilized in this study for primary data collection. After following an extensive literature review, the questionnaire items were structured. A screening question, "Have you ever invested in the Indian stock market?" is added in the description section of the questionnaire to identify investors invested in the Indian stock market, and data is solely collected from those participants who agreed. The instrument consists of two parts, primarily the demographic session and the section that measures the core constructs. A five-point Likert scale is used to measure each item for measuring the constructs. This scale commonly ranged from 1, revealing "Strongly disagree" to 5 demonstrating "Strongly agree" (Ravishankar et al., 2023). Several critical pretesting and validation steps were followed to enhance the clarity, conciseness, and cross-cultural validation of the instrument (Kifaya & Rama, 2023; Motamedi-Barabadi et al., 2023). Expert reviews were solicited from professionals and eminent scholars to review the initial design and optimize the questions. From these experts, minor adjustments to items were often made in wording and language. (Bilal et al., 2024; A.) (Chen et al., 2025; Neureiter & Matthes, 2023; Rehman, 2025). Following such preliminary reviews, a pilot study with 43 Samples was undertaken with the aim of assessing the reliability of the construct and confirming the suitability and psychometric quality of the measurement scales (Mabaso et al., 2025). The results derived from the pilot testing usually indicated satisfactory levels of reliability, where Cronbach's alpha values showed that the measurements were internally reliable and acceptable.

#### 3.2. Sample characteristics

Table 1 represents the overview of the demographic profile and investment experience of respondents who took part in this study. Most of the participants were male (291; 63.96). According to the age distribution, the largest proportion (240; 52.75%) was between 26 and 35 years of age. In terms of academic background, the majority held postgraduate degrees (245; 53.85%). Most of the respondents were employed (260; 57.14%) and professionals (80; 17.58%), with the largest income group earning below ₹500,000 annually (204; 44.84%). Regarding investment experience in financial markets, 122 (26.81%) had <1 year of experience, 246 (54.07%) had 1-5 years of experience, 60 (13.19%) had 6-10 years of experience, and 27 (5.93%) had over 10 years of experience.

**Table 1:** Respondents' Profile

Demographic Variable	Category	Count	Percentage (%)
Gender	Men	291	63.96
	Women	164	36.04
Age	Less than 25 years	143	31.43
	26-35 years	240	52.75
	36-45 years	56	12.31
	46-55 years	11	2.42
	56 and above	5	1.10
	Business	52	11.43
Current job level	Employed	260	57.14
	Other	15	3.30
	Professional	80	17.58
	Student	48	10.55
	10+2	38	8.35
Educational qualification	Undergraduate Degree	161	35.38
	Postgraduate Degree	245	53.85
	other	11	2.42
	Below 500,000	204	44.84
Annual Income	500,001-10,00,000	170	37.36
	10,00,001-15,00,000	55	12.09
	Above 15,00,000	26	5.71
	< 1-year	122	26.81
	1-5 years	246	54.07
Investment Experience	6-10 years	60	13.19
	> 10 years	27	5.93

### 4. Results

This study used PLS-SEM Modelling using SmartPLS 4.0 to examine the relationships between environmental knowledge (EK), personal value (PV), attitude (ATT), and green investment intention (GII) (Fig.2). We used Anderson and Gerbing's (1988) suggested two-stage strategy, first validating our measurement model for reliability and construct validity, and then evaluating the structural model to verify our hypothesis. The bootstrapping method with 5,000 resamples was employed "to assess the significance of path coefficients" (Hair et al., 2019)

#### 4.1. Measurement model

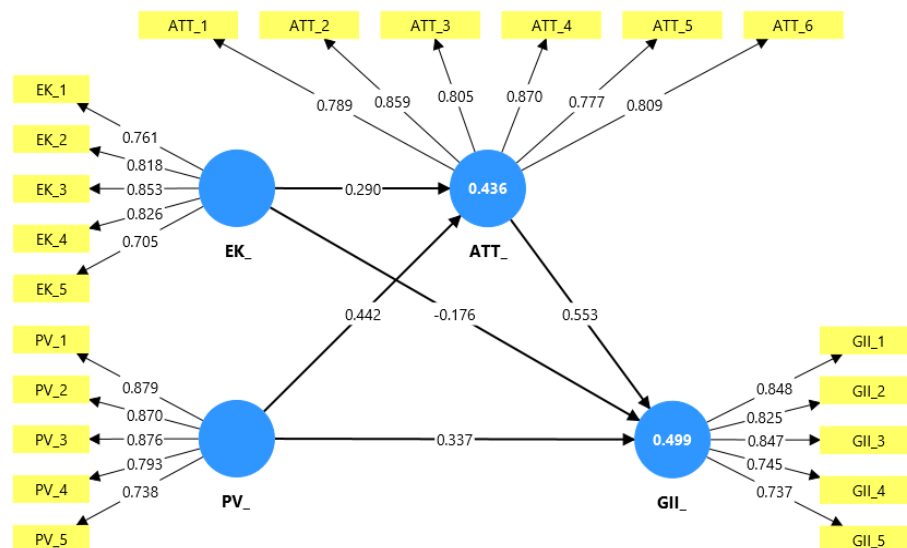
##### 4.1.1. Reliability of indicators

Indicator reliability was checked by examining outer loadings, reflecting the associations between constructs and their respective indicators. As shown in Table 2, all the indicator loadings were "higher than 0.70" as recommended by Hair et al. (2019), ranging from 0.705 to 0.879.

ATT had strong loadings spanning from 0.777 to 0.870, with ATT\_4 having the topmost loading of 0.870. For EK, the indicators loaded between 0.705 and 0.853, with the strongest relationship being that of EK\_3 at 0.853. In addition, the loading of GII indicators was between 0.737 and 0.848, and for Personal Value, the load varied from 0.738 to 0.879.

**Table 2:** Outer Loadings of Measurement Indicators

Construct	Indicator	Loading
ATT	ATT_1	0.789
	ATT_2	0.859
	ATT_3	0.805
	ATT_4	0.87
	ATT_5	0.777
	ATT_6	0.809
EK	EK_1	0.761
	EK_2	0.818
	EK_3	0.853
	EK_4	0.826
	EK_5	0.705
GII	GII_1	0.848
	GII_2	0.825
	GII_3	0.847
	GII_4	0.745
	GII_5	0.737
PV	PV_1	0.879
	PV_2	0.87
	PV_3	0.876
	PV_4	0.793
	PV_5	0.738



**Fig. 2:** Results of the Proposed Model.

Note: ATT = Attitude; EK = Environmental knowledge; GII = Green investment intention; PV = Personal value.

#### 4.1.2. Internal consistency

Internal consistency reliability was measured by Cronbach's alpha, composite reliability (CR), and rho\_A coefficients. Table 3 displays the reliability measurements for all constructs. All constructs had Cronbach's alpha over the minimum threshold of 0.70, with estimates ranging between 0.853 and 0.902 (Nunnally & Bernstein, 1994). Attitude exhibited the highest internal consistency ( $\alpha = 0.902$ , CR = 0.924), followed by Personal Value ( $\alpha = 0.889$ , CR = 0.919), green investment intention ( $\alpha = 0.861$ , CR = 0.900), and environmental knowledge ( $\alpha = 0.853$ , CR = 0.895). The composite reliability values, representing a better measure in PLS-SEM contexts, were all above 0.89, reflecting excellent internal consistency (Hair et al., 2019).

#### 4.1.3. Construct validity

Convergent validity was assessed through AVE, "the degree to which the variance of its indicators is explained by the construct" (Fornell & Larcker, 1981). From Table 3, it can be viewed that all constructs have AVEs > the threshold value of 0.50 as proposed by Fornell & Larcker (1981). Among the several constructs considered, Personal Value turns out to have the highest AVE at 0.694, Attitude at 0.671, Green Investment Intention at 0.643, and EK at 0.631. The result implies that more than 50% of each construct's indicators account for variance; hence, each has adequate convergent validity.

**Table 3:** Construct Reliability and Validity

Constructs	Cronbach's $\alpha$	rho_A	CR	AVE
ATT	0.902	0.907	0.924	0.671
EK	0.853	0.863	0.895	0.631
GII	0.861	0.883	0.900	0.643
PV	0.889	0.895	0.919	0.694

Note: ATT = Attitude; EK = Environmental Knowledge; GII = Green Investment Intention; PV = Personal Value; CR = Composite reliability; AVE = Average variance extracted.

#### 4.1.4. Discriminant validity

We assessed discriminant validity by using the HTMT ratio of correlations, which is considered to be superior to the Fornell-Larcker criterion in PLS-SEM (Henseler et al., 2015). Table 4 exhibits the HTMT ratios for all pairs of constructs. All HTMT values were below the threshold of 0.85 (Henseler et al., 2015), with the highest value being 0.731 for the pair of attitudes and GII. The HTMT ratio between EK and GII was quite low, at 0.376, suggesting that there is strong discriminant validity between these constructs. These results taken together indicate that all constructs are empirically distinct and measure different phenomena.

**Table 4:** Heterotrait-Monotrait Ratio (HTMT)

Construct	ATT	EK	GII	PV
ATT	-	-	-	-
EK	0.630	-	-	-
GII	0.731	0.376	-	-
PV	0.682	0.696	0.633	-

## 4.2. Structural model assessment

### 4.2.1. Path coefficients and hypothesis testing

After the measurement model was found to be adequate, the structural model was tested to assess the hypothesized linkage between the constructs. Specifically, path coefficients, coefficient of determination ( $R^2$ ), effect sizes ( $f^2$ ), and predictive relevance were assessed. Path Coefficients and hypothesis testing are shown in Table 5, which shows the results of the testing of direct effects hypotheses. All five proposed direct paths reached statistical significance at  $p < 0.001$ , as indicated by t-values greater than 3.291. Environmental knowledge had a significantly positive influence on attitude ( $\beta = 0.290$ ,  $t = 7.510$ ,  $p < 0.001$ ), thus supporting H1. Similarly, Personal Value had a notable and positive effect on attitude ( $\beta = 0.442$ ,  $t = 9.553$ ,  $p < 0.001$ ), which confirmed H2. Attitude towards green investment exerted the strongest direct effect on green investment intention ( $\beta = 0.553$ ,  $t = 12.842$ ,  $p < 0.001$ ), thus validating the third hypothesis. Environmental knowledge had a significant but negative direct effect on green investment intention ( $\beta = -0.176$ ,  $t = 3.902$ ,  $p < 0.001$ ); we reject H4. Although this negative direct effect is statistically significant, its size was substantially smaller compared to its positive indirect effect as mediated through attitude. Personal Value also had a significantly positive direct effect on green investment intention ( $\beta = 0.337$ ,  $t = 7.209$ ,  $p < 0.001$ ), thus supporting H5.

**Table 5:** Direct Effects

Path	$\beta$	StDev	t-value	p-value	Decision
EK $\rightarrow$ ATT	0.290	0.039	7.510	<0.001***	Supported
PV $\rightarrow$ ATT	0.442	0.046	9.553	<0.001***	Supported
ATT $\rightarrow$ GII	0.553	0.043	12.842	<0.001***	Supported
EK $\rightarrow$ GII	-0.176	0.045	3.902	<0.001***	Not Supported
PV $\rightarrow$ GII	0.337	0.047	7.209	<0.001***	Supported

Note:  $p < 0.001$ ; EK = Environmental Knowledge; PV = Personal Value; ATT = Attitude; GII = Green Investment Intention.

### 4.2.2. Mediation analysis

We investigated the mediating effect of attitude by means of bootstrapped indirect effects (Preacher & Hayes, 2008). As can be seen in Table 6, attitude significantly mediates the relationship between environmental knowledge and green investment intention ( $\beta = 0.160$ ,  $t = 6.766$ ,  $p < 0.001$ ), thus supporting H6. In the same direction, attitude also significantly mediates the link between Personal value and green investment intention ( $\beta = 0.244$ ,  $t = 8.012$ ,  $p < 0.001$ ), thus supporting H7.

This mediation analysis suggests that the influence of environmental knowledge on green investment intention is bifold, i.e., through a positive indirect effect via attitude ( $\beta = 0.160$ ), and a negative direct effect ( $\beta = -0.176$ ). Combining these, the total effect would be almost zero, with any suggestion that environmental knowledge operates primarily through the formation of attitude to shape intention rather than doing so directly. This pattern constitutes competitive mediation, as identified by Zhao et al. (2010), when the mediator (attitude) becomes indispensable in translating environmental knowledge into investment intentions. This counterintuitive result can be interpreted through several mechanisms. Increased environmental knowledge, in the absence of a commensurate favorable attitude toward green investments, could lead to a higher awareness of sector risks, concerns about greenwashing, or structural barriers within green finance markets. Knowledgeable investors without a favorable attitude may thus adopt a more critical stance toward green financial products, recognizing latent risks or questioning genuine environmental impact. In contrast, environmental knowledge yields beneficial effects when it informs and cultivates a more favorable and informed attitude, which then translates into a higher investment intention.

**Table 6:** Mediation Analysis Results (Specific Indirect Effects)

Indirect Path	$\beta$	STDEV	t-value	p-value	Result
EK $\rightarrow$ ATT $\rightarrow$ GII	0.160	0.024	6.766	<0.001***	Significant
PV $\rightarrow$ ATT $\rightarrow$ GII	0.244	0.030	8.012	<0.001***	Significant

Note: EK = Environmental Knowledge; PV = Personal Value; ATT = Attitude; GII = Green Investment Intention.

### 4.2.3. Explanatory power and effect sizes

The statistical analysis revealed that the research model has great explanatory power. Predictors accounted for 43.6% of the attitude variance and 49.9% of green investment intention variance. According to Cohen's guidelines, this shows a medium to considerable effect size (1988). Calculations on effect size show that attitude had the greatest effect on green investment intention with  $f^2 = 0.343$ . Personal value displayed a medium-sized effect consistently on attitude, with  $f^2 = 0.217$ , and on investment intention with  $f^2 = 0.116$ . Environmental knowledge yielded relatively small effect sizes on attitude and investment intention, with  $f^2 = 0.093$  and  $f^2 = 0.035$ , respectively, indicating it is of less practical effect compared to the other factors.

**Table 7:** Effect Sizes (F<sup>2</sup>)

Relationship	F <sup>2</sup>	Effect Size
EK → ATT	0.093	Small
PV → ATT	0.217	Medium
ATT → GII	0.343	Medium
EK → GII	0.035	Small
PV → GII	0.116	Small

## 5. Discussion

This study underlines the pivotal role of attitude in determining retail investors' intentions towards green investments. Both environmental knowledge and personal values enhance positive attitudes towards green investment. This corresponds to KAB, VBN, and TPB, in which cognition and values are considered central to pro-environmental attitude and behavior. The strong path leading from attitude to green investment intention indicates that when investors carry a positive attitude towards green investments, believing such investments are beneficial, desirable, and harmonious with their own beliefs, they are more likely to intend to allocate capital to these instruments (Ajzen, 1991; Schrader & Lawless, 2004; Stern et al., 1999).

The study also shows an interesting competitive mediation pattern for environmental knowledge: a positive indirect effect on attitude co-occurs with a small negative but significant direct effect on intention. This would suggest that higher environmental knowledge, when not framed by a corresponding positive attitude, leads to increased awareness of risks, greenwashing concerns, or structural barriers, which dampen direct intention while indirectly supporting intention through the improvement of attitudes (Borges-Tiago et al., 2024; Liu et al., 2024). This is particularly relevant for emerging markets, where markets for green financial products are at an early stage, and information asymmetries may be significant. Investors who are better informed about environmental issues tend to be more skeptical of greenwashing, more aware of the implementation risks of green projects, and more sensitive to regulatory uncertainties. Yet again, this knowledge is rewarding since it leads to a better-informed, more critically discerning, yet finally positive attitude toward genuine green investments. On the contrary, personal values exhibit a consistently positive direct and indirect effects, proving that deeply held altruistic and biospheric values function as stable motivational drivers of investors toward portfolio alignment with sustainability objectives, regardless of perceived complexities or risks (Garg et al., 2022; Raut & Kumar, 2023).

In sum, the moderate to significant R<sup>2</sup> values depicted by attitude and green investment intention, coupled with the medium effect sizes identified for attitude and personal values, suggest that the EK-values-attitude framework demonstrates a statistically meaningful share of the variance in the decisions at issue regarding sustainable investments. These results expand earlier TPB- and VBN-based investigations by establishing that, within an emerging market context, attitudinal and value-based imperatives can transcend purely informational or normative drivers in explaining green investment intentions. The findings support recent research such as that by Adam and Shauki (2014), Singh et al. (2021), and Wiśniewska et al. (2025). The results also help reconcile mixed evidence from prior studies by underlining that knowledge per se is not an adequate predictor, but its impact depends on how it is internalized and translated into evaluative and moral orientations toward green finance.

## 6. Implications

Theoretically, this research illustrates the benefit of combining KAB, VBN, and TPB in a short EK-values-attitude path to explain sustainable investment behavior (Mabaso et al. 2025). It contributes theoretically by putting together these frameworks into a cogent, testable model of green investment intention within the emerging market context and by identifying a competitive mediation mechanism through which environmental knowledge influences investment intentions. With the results indicating competitive mediation through environmental knowledge and strong mediation through personal values, it would appear that intentions originate from both cognitive understanding and moral obligation rooted in values, with attitude serving as the main proximal determinant, as supported by Amoah & Addoah (2021) and Camacho et al. (2024). This advances the literature on the gap in knowledge and behaviour regarding the importance of embedding it in positive attitudinal and value structures to translate intentions to make green investments.

For policymakers, the findings suggest that intervention should extend well beyond the provision of environmental Knowledge and focus instead on campaigning to frame green investments in terms of their personal significance and value congruence and financially credible (A & K, 2025; Camacho et al., 2024; Canoğlu & Üstüner, 2025; Kollmuss & Agyeman, 2002). The government-backed initiatives also need to make it clearer how green investments will help to achieve the goals of national sustainability, climate resilience, and prosperity across future generations while linking biospheric and altruistic motives to financial instruments that help further environmental stewardship.

The short-term focus (1–2 years) is to derive investor trust by reducing information barriers. Financial institutions need to develop value-based profiling tools that will help identify the investors holding biospheric and altruistic values. Regulators should enhance disclosure and product labeling requirements to reduce greenwashing. The education programs should clearly explain what genuinely is green investment, while financial intermediaries must be trained to position these products as an authentic expression of their clients' personal values and moral principles.

Long-term strategies require systemic policy and infrastructure reforms over more than three years. This will involve the introduction of robust anti-greenwashing mechanisms with regular audits and effective penalties by governments, while developing open access market infrastructure in such a way as to reduce the barriers to retail participation. Tax incentives and subsidies should be redesigned to systematically promote green investments underpinned by coordinated policy frameworks to align climate action (SDG-13) in the mobilization of private capital at scale.

Policymakers can build investor confidence through increased disclosure requirements, sound labelling frameworks, and strict anti-greenwashing regulations that lower perceived risks in allocating capital to sustainable assets. Since personal beliefs and perceptions are particularly influential, there is a need for financial institutions to design tailored offerings and focused messaging approaches. Banks and investment firms should create ecologically responsible mutual funds, ETFs, and portfolios that clearly articulate their ecological benefits alongside competitive risk-adjusted returns, ensuring alignment between investors' ethical priorities and performance objectives (Chueca Vergara & Ferruz Agudo, 2021).

Investor education initiatives and interventions should make environmentally complex information coherent and understandable, focusing on encouraging constructive attitudes while going beyond the increase in abstract knowledge levels. Specifically, the results suggest that

clients must be profiled based not solely on traditional risk-return preferences but also on environmental knowledge and value orientations (Robba et al., 2024). Accordingly, advisors can make use of values-based questionnaires to identify those clients who may have strong altruistic or biospheric orientations and can then position green instruments as a natural extension of their ethical and lifestyle choices. Alongside that, where investors are more knowledgeable but skeptical, their concerns about credibility, liquidity, and long-term performance need to be addressed to transform awareness into intention (Robba et al., 2024; Zhuang et al., 2021).

**Table 8:** Summary of Implications

Stakeholder	Key Implications	Recommended Actions
Polymakers	Frame green investments via value congruence for attitude formation; align with SDGs.	Value-focused campaigns, tax incentives, and anti-greenwashing policies.
Regulators	Reduce risks from knowledgeable but skeptical investors.	Disclosure standards, labeling, and audits.
Financial Advisors	Leverage values and attitudes over mere knowledge.	Client profiling tools, tailored marketing, and risk education.

## 7. Conclusion

This study provides a theoretical contribution by integrating the KAB model, VBN theory, and TPB in one framework to explain green investment intention within an emerging market context. By identifying attitude as the key mediator and detailing the competitive mediation mechanism of environmental knowledge, this research contributes to the understanding of exactly how psychological processes translate environmental knowledge and values into sustainable investment behavior.

The results indicate that environmental knowledge and personal values are crucial drivers of the intention of Indian retail investors to participate in green investment, essentially through their impact on attitudes toward green investing. Attitude clearly stands out as the most critical determinant of intention, indicating its status as the proximal driver of behavioral commitment in sustainable finance decisions. Whereas personal values display consistency in positive direct and indirect effects on intention, environmental knowledge displays a competitive mediation pattern, indicating that to promote green investment behavior effectively, knowledge needs to be transformed into positive attitudes.

By incorporating the KAB, VBN, and TPB views into a unified EK-Value-Attitude framework, the study makes an addition to the theoretical understanding of the coping strategies that drive green investment intention within emerging markets. Overall, the findings suggest that policies and industry practices that focus solely on information dissemination are insufficient. Instead, strategies that foster positive attitudes and environmentally focused values are needed to mobilize capital into sustainable assets. To move forward with SDG-13 and SDG-17, private capital must be mobilized. There is substantial scope for future extension of this research. Upcoming research may expand the model by the addition of any other factors, such as perceived behavioral control, subjective norms, green trust, or perceived risk. Comparative analysis among different demographic or regional groups will shed further light on the determinants of green investment intention.

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