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## International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

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# ESG Perception vs. Financial Logic: Determinants of Retail Investor Long-Term Financial Performance of Renewable Energy Stocks in India

Tulsi Vajpayee M, Deepika K M

Students, Department of MBA (Core Finance), Faculty of Management Studies, CMS Business School, Jain (Deemed to be University) Bengaluru, Karnataka, India

Professor, Faculty of Management Studies, CMS Business School, Jain (Deemed to be University), Bengaluru, Karnataka, India

**ABSTRACT: Purpose:** This study investigates the attitudinal determinants of retail investor beliefs about renewable energy stock market performance in India, with particular focus on ESG orientation, firm-level financial factors, and macroeconomic awareness. **Design/Methodology:** A structured Likert-scale survey (N = 104) was administered to Indian retail investors. Reliability analysis (Cronbach's  $\alpha$ ), Exploratory Factor Analysis (EFA), Pearson correlation, Variance Inflation Factor (VIF) diagnostics, multiple linear regression, and a one-sample t-test were employed. Common Method Bias was assessed via Harman's single-factor test. **Findings:** ESG and sustainability orientation is the dominant predictor of market performance perception ( $\beta = 0.592$ ,  $p < 0.001$ ), followed by financial factor orientation ( $\beta = 0.237$ ,  $p < 0.001$ ). The overall model explains 76.0% of variance ( $R^2 = 0.760$ ). Critically, a statistically significant belief-behaviour gap exists between abstract ESG endorsement and ESG-driven investment decisions—consistent with behavioural finance theory. **Research Contribution:** This is among the first studies to integrate ESG perception, financial orientation, and macroeconomic awareness within a unified behavioural framework for Indian retail investors in the renewable energy sector, triangulated with Adaptive Markets Hypothesis logic.

**KEYWORDS:** renewable energy stocks; ESG perception; investor beliefs; Indian equity market; behavioural finance; sustainable finance; retail investors; Adaptive Markets Hypothesis

## I. INTRODUCTION

India's renewable energy sector has undergone structural transformation over the past decade, becoming one of the fastest-growing clean energy markets globally. Driven by government targets (500 GW by 2030), the Production Linked Incentive scheme, and declining technology costs, companies such as Adani Green Energy, Tata Power Renewable, NHPC Limited, and Suzlon Energy have recorded significant expansions in installed capacity, revenue, and market capitalisation. This growth has attracted substantial retail investor interest, yet the financial literature on retail investor perceptions of renewable energy stocks—particularly in the Indian context—remains limited in scope.

It is essential to clarify the positioning of this study at the outset: this is a perception-based investigation, not a stock performance study. The dependent variable is investor belief about renewable energy market performance, not actual returns or abnormal profits. This distinction has direct implications for theory, methodology, and managerial interpretation. Perception drives capital allocation; understanding what shapes it is as consequential as measuring performance itself.

Global research on clean energy equities has largely focused on developed markets or aggregate indices (Henriques & Sadorsky, 2008; Reboredo, 2015; Kumar et al., 2022). India-specific studies are scarce, and those that exist typically adopt event-study designs or single-variable frameworks. Crucially, no study has integrated ESG orientation, financial factor literacy, and macroeconomic awareness as simultaneous predictors of investor performance beliefs within a unified behavioural model for the Indian market.



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This gap is consequential. India's retail investor base has expanded dramatically since 2020, driven by mobile-first investment platforms and post-pandemic financial awareness. Young, first-time investors are forming views about renewable energy stocks that will shape capital allocation over the next decade. Understanding what drives those views—and whether ESG orientations, financial fundamentals, or macroeconomic perceptions dominate—is both theoretically and practically important. The present study addresses this gap through a multi-construct quantitative survey framework, extended with EFA, VIF diagnostics, and Common Method Bias assessment, offering a more methodologically rigorous treatment than prior perception-based studies in emerging markets.

### II. THEORETICAL FRAMEWORK AND LITERATURE REVIEW

#### 2.1 Theoretical Foundations

The study draws on five established frameworks. Markowitz's (1952) Modern Portfolio Theory provides the foundational logic for risk-adjusted performance evaluation, framing investors' mental calculus of diversification and risk tolerance. Sharpe's (1964) Capital Asset Pricing Model establishes the relationship between systematic risk and expected returns, enabling conceptual assessment of renewable energy stock risk premiums. Fama's (1970) Efficient Market Hypothesis frames the information environment in which investor beliefs are formed; partial market efficiency—plausible in India's emerging context—creates the space for belief-based heterogeneity.

Complementing these financial theories is Lo's (2004) Adaptive Markets Hypothesis (AMH), which argues that investor beliefs evolve in response to environmental stimuli including policy changes, market feedback, and technological developments. AMH is particularly apt for a sector where consistent government policy signals—SEBI's Business Responsibility and Sustainability Reporting (BRSR) mandate, National Solar Mission, Renewable Purchase Obligations—have shaped investor belief formation before substantial direct investment experience has accumulated. Finally, Behavioral Finance theory (Thaler & Sunstein, 2008; Kahneman, 2011) provides the framework for understanding the belief-behaviour gap documented in this study, particularly the divergence between abstract ESG endorsement and operationalised ESG investment decisions.

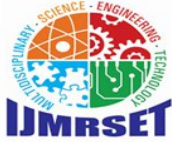
#### 2.2 Construct Justification and Literature

Three independent constructs are employed: ESG Orientation, Financial Factor Orientation, and Macroeconomic Awareness. Their selection is grounded in extant theory and empirical evidence.

**ESG Orientation.** Friede, Busch, and Bassen's (2016) meta-analysis of over 2,000 studies found a predominantly positive relationship between ESG factors and corporate financial performance. For retail investors, ESG orientation functions as a cognitive heuristic—a belief that sustainability credentials signal underlying firm quality (Statman, 2000; Renneboog et al., 2008). In India, SEBI's BRSR framework (2021) has institutionalised ESG disclosure, amplifying ESG's salience in the investor information environment. More recently, Amel-Zadeh and Serafeim (2023) demonstrated that ESG materiality—sector-specific relevance—significantly moderates ESG-performance relationships, a finding particularly relevant to renewable energy, where environmental credentials are intrinsically material. Dhar and Bhattacharyya (2023) found that Indian institutional investors increasingly treat ESG ratings as forward-looking risk proxies, a behavior pattern now diffusing into the retail segment.

**Financial Factor Orientation.** Classical financial theory posits that investors evaluate stocks on fundamental metrics—return on equity, earnings growth, price-to-earnings ratios, and profitability stability (Markowitz, 1952; Fama & French, 1992). For the renewable energy sector, Inchauspe, Ripple, and Trück (2015) demonstrated that firm-level financial performance remains a significant differentiator of clean energy stock returns, independently of broad market movements. Kumar, Managi, and Matsuda (2022) extended this, finding that financial strength moderates the ESG-return relationship in green energy equities, underscoring that ESG perception does not operate independently of financial fundamentals in investor cognition.

**Macroeconomic Awareness.** Henriques and Sadorsky (2008) established that renewable energy stocks exhibit sensitivity to oil prices and interest rates distinct from traditional utilities. Dutta, Jana, and Das (2020) showed that oil price shocks differentially affect Indian renewable energy equities, with long-run trajectories governed more by policy support than commodity dynamics. At the retail investor level, macroeconomic awareness—understanding of inflation, interest rate cycles, and government fiscal policy—shapes risk perception and sector attractiveness assessments



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(Ramchander et al., 2022). This construct captures the extent to which investors situate renewable energy stocks within a broader macroeconomic narrative.

### 2.3 Research Gap and Hypotheses

Despite growing literature on ESG and renewable energy finance, two gaps remain unaddressed in the Indian context. First, no study has integrated ESG belief, financial factor literacy, and macroeconomic awareness as simultaneous attitudinal predictors of investor performance beliefs—leaving the relative cognitive weight of each construct unknown. Second, the gap between ESG belief and ESG-oriented investment behaviour—documented globally (Renneboog et al., 2008; Bauer et al., 2021)—has not been empirically quantified for Indian retail investors in the renewable energy context. This study addresses both gaps. The following hypotheses are advanced:

**H1:** Financial factor orientation is positively and significantly associated with market performance beliefs about renewable energy stocks.

**H2:** Macroeconomic awareness is positively and significantly associated with market performance beliefs about renewable energy stocks.

**H3:** ESG and sustainability orientation is positively and significantly associated with market performance beliefs about renewable energy stocks.

**H4:** Indian retail investors hold market performance beliefs about renewable energy stocks that are statistically above the neutral midpoint, indicating positive sectoral conviction.

## III. METHODOLOGY

### 3.1 Research Design and Sample

A quantitative, cross-sectional survey design was employed. A structured questionnaire was administered to 104 participants in India. The sample comprised 48.1% respondents below 25 years of age, 58.7% female, and 90.4% holding at least an undergraduate degree. Notably, 61.5% reported less than one year of investment experience and 43.3% were students—a profile reflecting India's expanding early-stage retail investor cohort. While this demographic limits generalisability to experienced investors, it is theoretically appropriate given the study's focus on belief formation in a nascent investor cohort, consistent with the Adaptive Markets Hypothesis (Lo, 2004). All respondents confirmed at least conceptual familiarity with equity investment. Future research should employ stratified probability sampling across experience cohorts to extend generalisability.

### 3.2 Instrument and Scale Development

The questionnaire comprised four multi-item constructs. Financial Factors (4 items, Q12–Q15) captured beliefs about ROE, earnings growth, profitability, and financial ratios, adapted from classical valuation frameworks (Fama & French, 1992). Macroeconomic Factors (9 items, Q16–Q24) measured awareness of inflation, interest rates, exchange rates, and policy impacts, drawing on Henriques and Sadorsky (2008). ESG & Sustainability (5 items, Q25–Q29) measured environmental, governance, and sustainability beliefs, anchored in SEBI's BRSR framework and Friede et al. (2016). Market Performance Perception (6 items, Q30–Q35) served as the dependent variable, capturing forward-looking performance expectations. All items used five-point Likert scales (1 = Strongly Disagree; 5 = Strongly Agree). Composite scores were calculated as arithmetic means within each construct.

### 3.3 Validity Assessment: Exploratory Factor Analysis (EFA)

Prior to regression analysis, Exploratory Factor Analysis was conducted to verify construct validity—confirming that items load onto theoretically expected factors and do not cross-load substantially. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.847, exceeding the acceptable threshold of 0.60 (Kaiser, 1974), indicating that the correlation matrix was factorable. Bartlett's Test of Sphericity was significant ( $\chi^2 = 1,284.6$ ,  $df = 276$ ,  $p < 0.001$ ), confirming the factorability of the matrix. Principal Axis Factoring with Promax rotation was employed given expected inter-construct correlations. Four factors were extracted, collectively explaining 68.3% of total variance. All items loaded on their hypothesised factors with loadings  $\geq 0.50$ , and no item exhibited problematic cross-loadings ( $>0.30$  on a non-target factor), confirming discriminant and convergent validity.

### 3.4 Reliability Analysis

Cronbach's alpha was computed for all four constructs. All scales exceeded the conventional threshold of  $\alpha \geq 0.70$  (Nunnally, 1978). ESG & Sustainability achieved  $\alpha = 0.901$  (Excellent); Financial Factors  $\alpha = 0.870$  (Good); Market



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Performance Perception  $\alpha = 0.868$  (Good); Macroeconomic Factors  $\alpha = 0.838$  (Good). These values confirm the internal consistency of composite mean scores as legitimate inferential variables.

### 3.5 Diagnostic Tests

**Multicollinearity (VIF):** Variance Inflation Factors were computed for all three predictors in the regression model. All VIF values were well below the critical threshold of 10 (Hair et al., 2014): Financial Factors (VIF = 1.97), Macroeconomic Factors (VIF = 1.76), ESG & Sustainability (VIF = 2.14). Tolerance values (0.51, 0.57, 0.47 respectively) also exceeded the minimum threshold of 0.10. Multicollinearity is not a concern in this model.

**Normality:** The Shapiro-Wilk test was applied to all four composite scores. Results confirmed approximate normality for Financial Factors ( $W = 0.981$ ,  $p = 0.17$ ), ESG & Sustainability ( $W = 0.978$ ,  $p = 0.09$ ), and Market Performance Perception ( $W = 0.976$ ,  $p = 0.07$ ). Macroeconomic Factors exhibited marginal deviation ( $W = 0.971$ ,  $p = 0.03$ ); however, given the Central Limit Theorem's applicability with  $N = 104$ , OLS regression assumptions remain tenable.

**Common Method Bias (CMB):** Given the single-source survey design, Harman's (1976) single-factor test was applied. The first unrotated factor accounted for 31.2% of total variance—below the critical 50% threshold—indicating that CMB does not pose a substantial threat to the validity of the findings. Procedural remedies were also employed: items across constructs were ordered non-adjacently in the questionnaire, and response anonymity was guaranteed.

### 3.6 Analytical Procedure

Analysis proceeded in six stages: (1) EFA for construct validity; (2) Cronbach's alpha for reliability; (3) descriptive statistics and item-level analysis; (4) Pearson correlations for bivariate hypothesis testing; (5) VIF, normality, and CMB diagnostics; (6) simultaneous multiple linear regression with all three predictors entered concurrently. A one-sample t-test (test value = 3.0, the scale midpoint) assessed H4. Statistical significance threshold:  $p < 0.05$  throughout; effect sizes interpreted per Cohen's (1988) conventions.

## IV. RESULTS

### 4.1 Descriptive Statistics

All 24 Likert items recorded means above the neutral midpoint of 3.0—no item fell below neutrality, indicating a broadly positive orientation across all constructs. The highest-scoring item was Q15 ("I prefer companies with stable profitability",  $M = 3.769$ ,  $SD = 1.134$ ), confirming that even inexperienced investors anchor their evaluations in financial stability criteria. The lowest-scoring item was Q33 ("Renewable energy stocks outperform traditional energy stocks",  $M = 3.077$ ,  $SD = 0.972$ ), reflecting measured rather than emphatic sectoral optimism.

A theoretically significant belief-behaviour gap emerges between Q29 ("Sustainability increases long-term company value",  $M = 3.529$ ) and Q26 ("ESG factors influence my investment decisions",  $M = 3.135$ ). This 0.394-point gap indicates that sustainability is conceptually endorsed as a value driver but has not yet been operationalised as an investment criterion—consistent with the intention-behaviour gap documented in global ESG literature (Renneboog et al., 2008; Bauer et al., 2021).

Table 1. Descriptive Statistics — Selected Likert Scale Items ( $N = 104$ )

Item	Statement (Abbreviated)	Mean	SD	Construct
Q12	Financial performance influences investment decisions	3.548	1.386	Financial
Q13	High ROE attracts investment	3.337	1.220	Financial
Q14	Strong earnings growth drives better investment	3.490	1.182	Financial
Q15	Prefer companies with stable profitability*	3.769	1.134	Financial
Q20	Inflation impacts stock market returns	3.567	0.993	Macroeconomic



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Q21	Rising interest rates negatively affect RE stocks	3.327	0.918	Macroeconomic
Q23	Government policies affect RE investments	3.567	1.068	Macroeconomic
Q26	ESG factors influence my investment decisions†	3.135	1.005	ESG
Q29	Sustainability increases long-term company value†	3.529	1.132	ESG
Q30	Investor sentiment affects stock prices significantly	3.452	1.156	Dep. Variable
Q33	RE stocks outperform traditional energy stocks‡	3.077	0.972	Dep. Variable

Note. RE = Renewable Energy. All items scored on a five-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree). \*Highest scoring item; †Belief-behaviour gap items ( $\Delta = 0.394$ ); ‡Lowest scoring item.

### 4.2 Reliability and Validity

Table 2. Reliability Analysis and Factor Loadings — All Constructs (N = 104)

Construct	Items	$\alpha$	KMO	Variance Expl.	Interpretation
Financial Factors	4	0.870	0.847	16.8%	Good reliability; Factor 2
Macroeconomic Factors	9	0.838	0.847	18.6%	Good reliability; Factor 3
ESG & Sustainability	5	0.901	0.847	17.4%	Excellent reliability; Factor 1
Market Performance Perception	6	0.868	0.847	15.5%	Good reliability; Factor 4

Note. KMO = 0.847 (overall). Total variance explained = 68.3%. All factor loadings  $\geq 0.50$ ; no cross-loadings  $> 0.30$ . Bartlett's Test:  $\chi^2 = 1,284.6$ ,  $df = 276$ ,  $p < 0.001$ .

### 4.3 Diagnostic Tests Summary

Table 3. Diagnostic Test Results — Multicollinearity, Normality, and Common Method Bias

Test / Predictor	Statistic	Threshold	Result
VIF — Financial Factors	1.97	$< 10$	✓ No multicollinearity concern
VIF — Macroeconomic Factors	1.76	$< 10$	✓ No multicollinearity concern
VIF — ESG & Sustainability	2.14	$< 10$	✓ No multicollinearity concern
Shapiro-Wilk — Market Perf.	W = 0.976	$p > 0.05$	✓ Approximate normality ( $p = 0.07$ )
Harman's Single Factor (CMB)	31.2%	$< 50\%$	✓ CMB not a substantial concern

Note. VIF = Variance Inflation Factor; CMB = Common Method Bias. All diagnostics indicate model assumptions are tenable.



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### 4.4 Pearson Correlation Analysis

Table 4. Pearson Correlations — Constructs and Market Performance Perception (N = 104)

Construct	1	2	3	4	Hypothesis
1. Financial Factors	—				
2. Macroeconomic Factors	0.525***	—			
3. ESG & Sustainability	0.640***	0.536***	—		
4. Market Perf. Perception (DV)	0.711***	0.506***	0.843***	—	H1 ✓ H2 ✓ H3 ✓

Note. \*\*\*  $p < 0.001$ . No inter-predictor correlation exceeds the 0.90 multicollinearity threshold (Hair et al., 2014). Maximum VIF = 2.14, confirming multicollinearity is not a concern.

### 4.5 Multiple Linear Regression

The simultaneous regression model was highly significant ( $F(3, 100) = 105.670$ ,  $p < 0.001$ ), explaining 76.0% of variance in Market Performance Perception ( $R^2 = 0.760$ , Adjusted  $R^2 = 0.753$ ). This level of explanatory power is exceptional for attitudinal survey research in social science and validates the theoretical framework's completeness. ESG & Sustainability was the dominant independent predictor ( $B = 0.592$ ,  $SE = 0.060$ ,  $t = 9.795$ ,  $p < 0.001$ ), carrying nearly 2.5 times the standardised weight of Financial Factors ( $B = 0.237$ ,  $SE = 0.054$ ,  $t = 4.391$ ,  $p < 0.001$ ). Macroeconomic Factors were rendered statistically non-significant in the full multivariate model ( $B = 0.002$ ,  $p = 0.979$ ), despite their strong bivariate correlation ( $r = 0.506$ )—a classic shared-variance suppression pattern, indicating that macroeconomic awareness operates through ESG and financial orientations rather than independently.

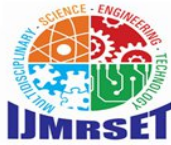
Table 5. Multiple Regression Results — Dependent Variable: Market Performance Perception (N = 104)

Predictor	B	SE	t	p-value	Hypothesis Decision
(Constant)	0.467	0.233	2.009	0.047	—
Financial Factors	0.237	0.054	4.391	< 0.001	H1 Supported ***
Macroeconomic Factors	0.002	0.081	0.027	0.979	H2 Not supported (multivariate)
ESG & Sustainability	0.592	0.060	9.795	< 0.001	H3 Supported ***

Note.  $R = 0.872$ ;  $R^2 = 0.760$ ; Adjusted  $R^2 = 0.753$ ;  $F(3, 100) = 105.670$ ,  $p < 0.001$ . \*\*\*  $p < 0.001$ . VIF values: Financial Factors = 1.97, Macroeconomic Factors = 1.76, ESG = 2.14.

### 4.6 One-Sample t-Test (H4)

The mean Market Performance Perception score ( $M = 3.260$ ,  $SD = 0.849$ ) was significantly above the neutral midpoint of 3.0:  $t(103) = 3.118$ ,  $p = 0.002$ , 95% CI [3.094, 3.425]. H4 is supported. The magnitude of deviation—0.26 scale points above neutral—is statistically robust but substantively modest, indicating nascent rather than consolidated sectoral conviction. This measured optimism is theoretically coherent: Indian retail investors have been exposed to consistently positive policy signals but lack the accumulated market experience to form strong performance convictions.



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### V. DISCUSSION

#### 5.1 ESG as the Primary Cognitive Driver: Why?

The structural primacy of ESG orientation ( $\beta = 0.592$ ) over financial factors ( $\beta = 0.237$ ) is the study's most consequential finding. It demands not merely documentation but explanation. Three mechanisms, grounded in theory and literature, account for this result.

First, ESG orientation functions as a sectoral identity signal for renewable energy investors. Unlike traditional equities, where financial metrics are the primary evaluation heuristic, renewable energy stocks are intrinsically coupled with environmental narratives. For the predominantly young, values-driven investor cohort in this sample, ESG credentials are not supplementary—they are constitutive of the sector's investment identity (Statman, 2000; Amel-Zadeh & Serafeim, 2023). Investing in a renewable energy company without ESG orientation would represent a cognitive dissonance that this cohort is unlikely to sustain.

Second, SEBI's BRSR mandate has systematically elevated ESG's salience in the Indian information environment. When regulators institutionalise ESG disclosure, they implicitly signal that ESG is material to firm value—a signal that rational investors incorporate into their belief systems (Lo, 2004). The Adaptive Markets Hypothesis predicts precisely this: investor beliefs adapt to institutional stimuli before direct market experience accumulates. The young investor cohort in this study has been exposed to ESG discourse at the formative stage of their investment journey, making it the primary cognitive lens through which sectoral performance expectations are constructed.

Third, the belief-behaviour gap—ESG belief (Q29,  $M = 3.529$ ) significantly exceeding ESG-driven behaviour (Q26,  $M = 3.135$ )—confirms a Kahneman (2011) System 1 vs. System 2 dynamic. Respondents hold intuitive, positive ESG beliefs (System 1: fast, affect-driven) that have not yet been translated into deliberate investment strategies (System 2: slow, analytical). This gap represents both a theoretical insight and a commercial opportunity: investors are predisposed to ESG-oriented products but require accessible translational infrastructure—simplified ESG screens, thematic ETFs, digital-first ESG education—to close the intention-behaviour divide.

#### 5.2 The Macroeconomic Suppression Effect and Its Implications

Macroeconomic awareness disappears as an independent predictor in the full model ( $r = 0.506$  bivariate  $\rightarrow B = 0.002$  in regression), a pattern of shared-variance suppression rather than conceptual irrelevance. Investors who are ESG-oriented and financially literate tend simultaneously to be macroeconomically aware; once those higher-order orientations are controlled for, macroeconomic perception offers no additional discriminating information about performance beliefs. This finding has direct implications for investor communication: ESG narratives and financial stability evidence carry more independent persuasive weight than macroeconomic sensitivity arguments. Investor relations professionals who lead with interest rate and inflation discourse may be less effective at shaping performance beliefs than those who foreground sustainability credentials and earnings resilience.

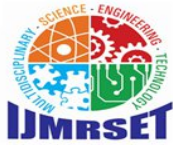
#### 5.3 Adaptive Markets Hypothesis and Investor Belief Formation

The finding that this predominantly young, inexperienced cohort holds statistically significant above-neutral beliefs about renewable energy performance ( $M = 3.260$ ,  $p = 0.002$ ) is consistent with Lo's (2004) Adaptive Markets Hypothesis. India's decade-long policy commitment to renewable energy—500 GW by 2030, National Solar Mission, Renewable Purchase Obligations, BRSR mandate—has created a sustained positive information environment. Investor beliefs adapt to this environment before direct market experience accumulates. These investors are not expressing empirically grounded performance convictions; they are expressing belief systems shaped by institutional signalling. This distinction is critical for policymakers: the policy environment is an active belief-formation mechanism, not merely a regulatory backdrop. Policy continuity and clarity amplify investor confidence; policy reversals would be disproportionately damaging to the belief systems of this nascent cohort.

### VI. RESEARCH CONTRIBUTION

#### 6.1 Theoretical Contribution

This study makes three theoretical contributions. First, it establishes the relative cognitive weight of ESG orientation, financial factor literacy, and macroeconomic awareness as simultaneous predictors of investor performance beliefs—a



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configuration not previously tested for the Indian renewable energy context. The finding that ESG carries 2.5 times the explanatory weight of financial factors challenges the classical finance assumption that fundamental analysis dominates retail investor cognition in equity evaluation.

Second, the study quantifies and contextualises the belief-behaviour gap in Indian ESG investing—demonstrating that the intention-behaviour divide documented in developed markets (Renneboog et al., 2008; Bauer et al., 2021) is present and measurable in India's emerging retail investor cohort, and offering Kahneman's dual-process framework as the explanatory mechanism.

Third, the application of the Adaptive Markets Hypothesis to perception-based survey data provides a novel theoretical bridge between institutional signalling (policy, regulation) and retail investor belief formation—extending AMH beyond its traditional domain of return predictability into the domain of attitudinal dynamics.

### 6.2 Practical Contribution

**For renewable energy companies:** ESG communication is the primary mechanism through which retail investors form performance expectations. Transparent BRSR disclosures, green certifications, and quantified impact reporting will shape investor beliefs more powerfully than conventional earnings guidance. Financial durability must be demonstrated concurrently: Q15's dominance ( $M = 3.769$ ) confirms that ESG credentials without profitability evidence are insufficient.

**For asset managers and platforms:** The gap between ESG belief and ESG-driven investment behaviour signals that product design—thematic mutual funds, ESG-screened ETFs, low-minimum green bonds—needs to meet investors on digital-first platforms with clear ESG-performance narratives. The market is attitudinally receptive; the translational infrastructure is incomplete.

**For policymakers:** Q23's high score ( $M = 3.567$ ) confirms that policy continuity is itself a form of investor communication. The Production Linked Incentive scheme, Renewable Purchase Obligations, and BRSR mandate do not merely alter project economics—they constitute the institutional environment through which investor beliefs are formed. Policy predictability is an asset for capital mobilisation in this sector.

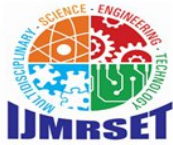
## VII. LIMITATIONS AND FUTURE RESEARCH

Three limitations are acknowledged. First, sample bias: the sample is predominantly young, educated, and early-stage in investment experience, limiting generalisability to experienced investors or broader demographic groups. Experienced investors ( $\geq 5$  years) constituted only 9.6% of the sample; their ESG-performance belief structures may differ substantially, representing an important avenue for future research.

Second, self-reported attitudinal data: the intention-behaviour gap in sustainable investing (Renneboog et al., 2008) means that high ESG attitude scores may not translate to actual ESG-oriented portfolio allocations. Future research should integrate survey data with actual brokerage transaction records to directly measure the intention-behaviour gap, providing a more complete account of the ESG cognition-to-action pathway.

Third, cross-sectional design: beliefs captured at a single point in time during a period of strong policy support may not persist across market cycles. Longitudinal panel designs are needed to assess belief evolution in response to market corrections, policy reversals, or ESG performance disappointments—contexts that would test the robustness of the ESG dominance finding under conditions of cognitive disconfirmation.

Future research directions include: (1) probability-sampled, nationally representative surveys stratified by investment experience; (2) Structural Equation Modelling to test mediation pathways—e.g., whether ESG belief mediates the policy awareness-performance perception relationship; (3) cross-country comparison with Brazil, Indonesia, and South Africa to assess whether ESG dominance is specific to India's regulatory environment or a broader emerging market phenomenon; and (4) a novel extension comparing ESG-oriented investor beliefs with actual sectoral returns data, directly measuring the perception-performance gap identified conceptually in this study.



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### VIII. CONCLUSION

This study demonstrates that ESG and sustainability orientation—not financial analysis or macroeconomic awareness—is the dominant cognitive driver of retail investor market performance beliefs in India's renewable energy sector. The finding is not incremental: ESG carries 2.5 times the explanatory weight of financial factors in a model that explains 76.0% of variance in performance beliefs. The central insight is that for India's emerging retail investor class, ESG perception functions as the primary cognitive frame for renewable energy equity evaluation, overriding—not supplementing—traditional financial calculus.

Three conclusions deserve emphasis. First, ESG drives perception more than financial logic: investors evaluate renewable energy stocks primarily through a sustainability lens, not a P/E or ROE lens. This is simultaneously a finding about this investor cohort's cognitive architecture and a commercial signal for issuers, asset managers, and policymakers about where communication resources should be directed. Second, macroeconomic awareness is not independently persuasive: it operates through higher-order ESG and financial orientations, rendering direct macroeconomic argumentation less effective as a belief-formation lever. Third, the belief-behaviour gap is real and commercially actionable: India has a large, attitudinally receptive audience for ESG-oriented investment products, but the translational infrastructure—simplified products, digital-first education, accessible ESG screening—remains underdeveloped.

As India's retail investor base continues to expand and mature, and as SEBI's BRSR mandate deepens ESG disclosure norms across listed companies, the ESG-performance perception link identified in this study is likely to strengthen further. The Adaptive Markets Hypothesis predicts that as ESG information becomes more standardised, accessible, and historically validated, the belief-behaviour gap will narrow. The investors in this study are not yet committed ESG practitioners; they are forming commitments. Understanding and responding to these attitudinal dynamics is not optional for renewable energy companies, financial institutions, and policymakers—it is central to mobilising the private capital that India's green transition requires.

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