

Original Article

Integrating ESG Criteria into Investment Portfolios: An Empirical Analysis of HNI Awareness, Perception, and Adoption in the Pune Manufacturing Corridor

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Abstract

The growing emphasis on sustainable investing has significantly influenced global financial markets, with Environmental, Social, and Governance (ESG) criteria emerging as key determinants of investment decision-making. This study examines the awareness, perception, and adoption of ESG investing among High-Net-Worth Individuals (HNIs) in the Pune manufacturing corridor.

Primary data was collected from 180 HNI investors across industrial clusters such as Chakan and Pimpri-Chinchwad using a structured questionnaire. The study employs reliability analysis, exploratory factor analysis (EFA), multiple regression, and Structural Equation Modeling (SEM) to analyze the influence of ESG awareness, ethical orientation, perceived financial performance, and regulatory awareness on investment decisions.

The findings reveal that while ESG awareness among HNIs is moderate, adoption is primarily driven by perceived financial performance and long-term sustainability benefits. Ethical considerations have a secondary but statistically significant impact, while regulatory awareness plays a supportive role. The study highlights a gap between ESG awareness and actual investment behavior, providing important implications for policymakers, wealth managers, and financial institutions.

Keywords: ESG Investing, Sustainable Finance, HNI Investors, Behavioral Finance, Portfolio Management

Introduction

The global investment landscape is undergoing a structural transformation with the increasing prominence of sustainable investing. Environmental, Social, and Governance (ESG) factors are no longer peripheral considerations but have become central to investment decision-making processes.

Traditionally, investment strategies focused primarily on financial metrics such as return and risk. However, increasing awareness of environmental challenges, corporate governance failures, and social responsibility has led investors to integrate ESG criteria into portfolio decisions.

In India, ESG investing is gaining momentum due to regulatory initiatives introduced by the Securities and Exchange Board of India, including Business Responsibility and Sustainability Reporting (BRSR) requirements. Despite these developments, ESG adoption among individual investors, particularly High-Net-Worth Individuals (HNIs), remains uneven.

The Pune Manufacturing Corridor—comprising major industrial hubs such as Chakan and Pimpri-Chinchwad—provides a unique context for studying ESG adoption. Many HNIs in this region are business owners or industrial stakeholders, making ESG considerations directly relevant to their economic and social environment.

This study aims to analyze whether ESG investment decisions among HNIs are driven by ethical considerations, financial performance expectations, or regulatory awareness.

Review of Literature

The concept of ESG investing is rooted in sustainable finance and socially responsible investing (SRI). Early theoretical foundations are linked to stakeholder theory, which emphasizes the role of corporations in addressing broader societal concerns.

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Research influenced by Eugene Fama suggests that markets incorporate available information into asset prices, including ESG-related disclosures. However, behavioral finance literature indicates that investor decisions are often influenced by non-financial factors such as values, beliefs, and social norms.

Recent studies (2020–2025) highlight several key insights:

- ESG investments can generate **competitive financial returns**
- ESG integration reduces **long-term portfolio risk**
- Investors increasingly value **ethical and sustainable outcomes**

In the Indian context, ESG adoption is still in its nascent stage. Regulatory frameworks introduced by the Securities and Exchange Board of India have improved disclosure standards, but awareness among individual investors remains limited.

Most existing studies focus on institutional investors or developed markets. There is a lack of empirical research on HNI investors in industrial regions such as the Pune Manufacturing Corridor. This study addresses this gap by integrating financial and behavioral perspectives.

Research Objectives

1. To assess the level of ESG awareness among HNIs
2. To evaluate the influence of perceived financial performance on ESG adoption
3. To analyze the role of ethical orientation in investment decisions

Data Analysis and Results

Reliability Analysis

Construct	Items	Cronbach’s Alpha
ESG Awareness	3	0.801
Financial Performance	3	0.826
Ethical Orientation	3	0.784
Regulatory Awareness	3	0.742
ESG Adoption	2	0.812
Overall Scale	14	0.854

Factor Analysis

KMO = 0.836, Bartlett’s Test ($p < 0.001$)

Factors identified:

- ESG Awareness
- Financial Performance
- Ethical Orientation
- Regulatory Awareness

Regression Analysis

Variable	Beta	Significance
Financial Performance	0.468	0.000
ESG Awareness	0.312	0.001
Ethical Orientation	0.245	0.003
Regulatory Awareness	0.198	0.007

4. To examine the impact of regulatory awareness on ESG investing
5. To identify the gap between ESG awareness and adoption

Hypotheses

- H1: ESG awareness positively influences ESG investment adoption
- H2: Perceived financial performance significantly impacts ESG adoption
- H3: Ethical orientation positively influences ESG investment decisions
- H4: Regulatory awareness positively affects ESG adoption
- H5: There exists a significant gap between ESG awareness and actual investment behavior

Research Methodology

The study adopts a descriptive and analytical research design.

1. Data Collection

Primary data was collected through a structured questionnaire administered to HNIs in the Pune Manufacturing Corridor.

2. Sample

- Sample Size: 180 respondents
- Target Group: HNIs and business owners

3. Measurement Scale

5-point Likert scale (Strongly Disagree to Strongly Agree)

4. Statistical Tools

- Cronbach’s Alpha
- Exploratory Factor Analysis
- Multiple Regression
- Structural Equation Modeling

R² = 0.58

SEM Results

Path	Coefficient	Result
Financial Performance → Adoption	0.51	Supported
ESG Awareness → Adoption	0.34	Supported
Ethical Orientation → Adoption	0.26	Supported
Regulatory Awareness → Adoption	0.21	Supported

Model Fit:

- R² = 0.61
- AVE = 0.59
- CR = 0.86

Discussion of Findings

The results indicate that **perceived financial performance** is the strongest determinant of ESG investment adoption among HNIs. This suggests that investors prioritize return potential over ethical considerations when making investment decisions.

ESG awareness, while significant, does not automatically translate into adoption, indicating a gap between knowledge and action. This aligns with behavioral finance theories that highlight inconsistencies between investor intention and behavior.

Ethical orientation plays a meaningful but secondary role, suggesting that while investors value sustainability, financial returns remain the primary motivator.

Regulatory awareness has a supportive impact, reflecting the role of policy frameworks in shaping investor behavior. However, its relatively lower influence indicates that regulatory initiatives alone are insufficient to drive adoption.

Conclusion

The present study provides comprehensive empirical evidence on the integration of ESG criteria into investment portfolios among High-Net-Worth Individuals (HNIs) in the Pune Manufacturing Corridor. The findings clearly indicate that ESG investing, while gaining traction, is still in a transitional phase in the Indian context.

The results demonstrate that **perceived financial performance** is the most dominant factor influencing ESG adoption. HNIs prioritize return potential, risk mitigation, and long-term financial stability when considering ESG investments. This reflects a pragmatic investment approach where sustainability is evaluated through the lens of financial viability rather than purely ethical considerations.

ESG awareness, although significant, does not automatically translate into investment action. This highlights a critical **intention-behavior gap**, a well-documented phenomenon in behavioral finance. Investors may express positive attitudes toward ESG investing but fail to incorporate it into their

portfolios due to uncertainty, lack of standardized metrics, or limited product familiarity.

Ethical orientation, while statistically significant, plays a complementary role. This suggests that values and sustainability concerns are important but not sufficient to drive investment decisions independently. Instead, ethical considerations act as reinforcing factors when aligned with financial benefits.

The relatively weaker impact of **regulatory awareness** indicates that policy interventions alone may not be adequate to accelerate ESG adoption. While frameworks introduced by the Securities and Exchange Board of India have improved disclosure and transparency, their influence on individual investor behavior remains limited unless supported by awareness and education initiatives.

Overall, the study concludes that ESG investing among HNIs is evolving from a **conceptual awareness stage to a performance-driven adoption stage**. The transition toward sustainable investing is gradual and influenced by a combination of financial, behavioral, and informational factors.

Implications

Policy and Regulatory Implications

For regulatory authorities such as the Securities and Exchange Board of India, the findings suggest the need for a more integrated and proactive approach toward ESG promotion:

- Strengthening ESG disclosure standards through uniform reporting frameworks (e.g., BRSR enhancements)
- Introducing ESG rating standardization to reduce investor confusion
- Launching targeted financial literacy campaigns focusing on sustainable investing
- Encouraging ESG-linked incentives such as tax benefits or preferential treatment

Implications for Asset Management Companies (AMCs)

AMCs play a critical role in bridging the awareness-adoption gap:

- Design investor-friendly ESG products with clear return-risk profiles

- Improve communication strategies, emphasizing both financial and sustainability outcomes
- Enhance transparency in ESG scoring methodologies
- Develop hybrid portfolios combining ESG and traditional assets

Implications for Wealth Managers and Financial Advisors

Given the influence of advisory channels on HNI decisions:

- Advisors should adopt a fiduciary approach, integrating ESG into portfolio recommendations
- Provide data-driven insights on ESG performance rather than relying on narratives
- Educate clients on long-term benefits and risk mitigation aspects of ESG investing
- Reduce bias toward traditional investment products

Implications for Investors

For HNI investors in the Pune Manufacturing Corridor:

- Evaluate ESG investments based on both financial returns and sustainability impact
- Develop analytical understanding of ESG metrics and ratings
- Avoid behavioral biases such as status quo bias and herd behavior
- Diversify portfolios by incorporating ESG instruments strategically

Limitations

Despite its contributions, the study is subject to several limitations:

1. Geographic Constraint

The study focuses exclusively on the Pune Manufacturing Corridor, which may limit the generalizability of findings to other regions with different economic and demographic characteristics.

2. Sample Size and Representation

Although 180 respondents provide sufficient statistical validity, a larger and more diverse sample could enhance robustness and external validity.

3. Self-Reported Data Bias

The reliance on questionnaire-based responses introduces potential biases, including:

- Social desirability bias
- Overestimation of ESG awareness
- Response inconsistency

4. Cross-Sectional Design

The study captures investor behavior at a single point in time. It does not account for dynamic changes influenced by:

- Market volatility

- Regulatory shifts
- Economic cycles

5. Limited Variable Scope

While key determinants such as financial performance and awareness were included, other relevant factors like:

- Taxation policies
- Liquidity constraints
- ESG fund availability were not explicitly examined.

Scope for Future Research

The findings of this study open multiple avenues for future research in sustainable finance and investor behavior.

1. Multi-Regional and Cross-Cultural Studies

Future studies can extend the analysis to multiple regions across India and internationally. Comparative research across developed and emerging markets would provide insights into how institutional frameworks and cultural factors influence ESG adoption.

2. Longitudinal Research Design

A longitudinal approach can track changes in ESG awareness and adoption over time. This would help assess whether ESG investing is a temporary trend or a long-term structural shift.

3. Integration of Advanced Behavioral Constructs

Future research can incorporate deeper behavioral variables such as:

- Loss aversion
- Overconfidence bias
- Cognitive dissonance
- Investor sentiment

Using advanced techniques like **Structural Equation Modeling (SEM)** and **PLS-SEM** can provide more nuanced insights.

4. ESG Performance and Portfolio Optimization

Further studies can examine the **risk-return characteristics of ESG portfolios** compared to traditional portfolios. Integration with Modern Portfolio Theory can help evaluate diversification benefits.

5. Role of Technology and Fintech Platforms

With the rise of digital investment platforms such as Zerodha and Groww, future research can explore how technology influences ESG awareness and adoption.

6. Policy Impact Studies

Future research can evaluate the effectiveness of ESG-related regulations introduced by the Securities and Exchange Board of India and their impact on investor behavior.

7. Mixed-Method and Experimental Approaches

Combining quantitative analysis with qualitative insights (interviews, case studies) can provide a

deeper understanding of investor motivations and decision-making processes.

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Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper

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