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# Investing in the Future: Exploring the Dual Role of Pension Funds in Infrastructure Growth and ESG-Conscious Market Positioning

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## Abstract

Pension funds are essential in the process of economic development as they fulfil the functions of institutional investors and manage significant financial capital. Such investments in infrastructure have the potential to foster the development of the economy and the well-being of the public, especially in the developing economy of India. Thus, this study aims to discuss the use of pension funds for infrastructure funding and the place of those funds in ESG-driven markets. This study adopted a primary, qualitative explanatory research approach that entailed the use of face-to-face semi-structured interviews with the industry participants involved in the financing of infrastructure. The study results revealed that pension funds are able to satisfy India's infrastructure financing deficit by investing in public-private partnerships. Moreover, these funds are Kinder's investments in sectors that include transportation, energy, and urban development needs and are well in line with ESG standards worldwide. The nature of pension fund activity implies a sustainable, long-term accumulation of funds with the ability to achieve financial objectives while supporting national development. However, aspects of regulation and market fluctuation may hamper their ability to participate fully. In general, this study highlighted the need to strengthen existing policies to encourage pension funds to invest in infrastructure projects with the potential for sustainable development in India to achieve its goals.

**Keywords:** Pension Funds, ESG, Investor Feedback, Infrastructure Growth, Economy.

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## 1. Introduction

Pension funds have become important institutional investors in the world economy, contributing their substantial capital to economic development. Millions of individuals worldwide depend on these funds to manage their retirement savings, and these funds have the potential to influence growth in sectors such as infrastructure and, thus, economic growth (Anago, 2021). Pension funds could help finance the expensive infrastructure projects in India that are essential for economic growth and enable the filling of the shortfall in financing (Barka et al., 2018). Given its importance for economic growth, the Indian government has been focusing on public-private partnerships to attract institutional investment, including from pension funds (Lee et al., 2020; Limkriangkrai et al., 2016).

For India to realize its potential and enhance the quality of life for its citizens, infrastructure development is a

priority in itself, not just an economic imperative. Said (2023) replicates, citing the World Bank, that India's GDP costs approximately 1-2% annually due to inadequate infrastructure. To support trade, facilitate productivity, and create jobs, transportation, energy, and urban development investments are needed. Moreover, the Indian government has ambitious targets regarding infrastructure investment of \$1.5 trillion by 2025 (Alareeni & Hamdan, 2020). This represents a real opportunity for pension funds to contribute towards sustainable economic development whilst meeting their financial objectives.

Over the last decade, investing based on incorporating Environmental, Social, and Governance (ESG) principles has become a global trend. This trend has gained pace in India, where investors now want their money spent on sustainability and financial returns. The development of ESG investing is really a sign of heightened sensitivity

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as to how corporate behavior is impacting society and the environment. In 2020, global sustainable investment was reported to have risen to a total of \$35.3 trillion (up 15 percent from 2018), according to a report by the Global Sustainable Investment Alliance (Gupta, 2023). Adoption of ESG principles is picking up in India, especially among institutional investors, who appreciate the evidentiary benefits of sustainable practices in reducing risks whilst creating long-term value (Makhija, 2023).

However, aligning long-term infrastructure investments with ESG targets is a difficult task. Although pension funds regularly want to invest in ESG, they often struggle with assessing the ESG performance of such investments since there are no standard metrics and reporting frameworks (Ehlers et al., 2023). Also, integrating ESG considerations into investment decision-making processes is difficult due to the complexity of infrastructure projects, which frequently require the participation of more than one stakeholder and longer horizons (Bhattacharjee & De, 2022). Therefore, pension funds must walk a tightrope between driving strategic infrastructure growth and ESG principles.

The significant importance of these pension funds is to market themselves as ESG-conscious and to ensure that financial sustainability is growing. As investors are looking more carefully at the ESG credentials of their investment vehicles, there is a growing demand that investment practices be transparent and accountable (Keeley et al., 2022). When successful, pension funds that leverage sustainability as an investment vehicle can improve their performance by attracting more capital and increasing their appeal to socially conscious investors (Friede et al., 2015). Although ESG principles are increasingly important components of investment strategy, the role of pension funds as both agents in supporting strategic infrastructure growth and as investors subject to ESG principles is unclear. This is complicated further by the limited understanding of the marketing strategies employed by pension funds to position themselves as sustainable investment vehicles in the Indian market. Pension funds around the world face the complexities of investing in infrastructure and require an understanding of synergies and trade-offs in infrastructure development, ESG, and market positioning in India.

To address these challenges, this study seeks to answer the following research questions:

1. How do pension funds in India balance the objectives of infrastructure development and adherence to ESG principles in their investment strategies?

2. What marketing approaches are most effective in enhancing the appeal of ESG-conscious pension funds to investors in the Indian financial market?

To answer the above questions, the present study seeks to understand the dual role that pension funds can play in India as a means of infrastructure growth while at the same time upholding Environmental, Social, and Governance (ESG) principles, by achieving the following objectives:

1. To explore how pension funds, as institutional investors, contribute to the development of infrastructure, particularly in developing economies such as India.

2. To investigate how pension funds' investments in sectors like transportation, energy, and urban development align with global Environmental, Social, and Governance (ESG) criteria.

3. To assess the potential of pension funds to meet the infrastructure financing needs in India, particularly through public-private partnerships.

These objectives are particularly relevant for India, where the demand for sustainable investment options is burgeoning in the fast-growing financial landscape. The study examined these strategies to balance these two critical objectives so that pension funds can attain sound investment outcomes while achieving sustainable development.

By examining the dual role of pension funds in promoting infrastructure growth, this study adds to the scholarly literature on sustainable finance and infrastructure investment in emerging economies by providing a thorough exposition of the dual role played by pension funds in driving infrastructure growth while upholding ESG principles. The findings offered practical insights about how to optimize investment strategies and marketing efforts to attract socially conscious investors. The study also has policy-level implications for regulatory bodies overseeing pension fund operations and ESG adherence in India and suggests that there is a need for more specific guidelines and frameworks to enable ESG considerations to be integrated into a pension fund investment practice.

## **2. Literature Review (LR)**

### ***2.1 Pension Funds and Infrastructure Investments***

Pension funds have a central role in addressing the issue of funding infrastructure projects, especially in the developing world, as is the case with India. Given the global estimated funding need of USD 22.5 trillion for infrastructure in Asia, infrastructure pension funds give a long-term and steady source of funds that is crucial for

infrastructure projects that ordinarily entail long periods of time for completion and inevitably demand upfront costs (Rillo & Ali, 2018). Pension fund infrastructure investment aims not only at guaranteed profitability but also indirectly allows for the solving of the problem of infrastructure development and the generation of new job opportunities, which correlates with societal objectives (Krishna & Mukherjee, 2021).

The arrangement and direction of infrastructure by pension funds require PPPs ways that can reduce risks and improve asset value. PPPs involve partnerships between the government and private sector whereby capital and access to private-sector funding and deployment of public resources can be achieved (Chotia & Rao, 2018). In addition, there are revolutionary financing models like land value capture the green bonds that are proving useful in financing infrastructure projects, giving pension funds diverse investment instruments (Munshi, 2020; Kumar et al., 2023). However, such structures appear complex and require effective governance of risks and accountability measures that must be put in place (Walsh et al., 2022).

However, as explained in the subsequent sections, infrastructure investments in India are not without their difficulties. Unpredictable policy actions and excessive regulatory formalities can discourage private investment, and the FDI inflows in the sector may also vary significantly (Singh et al., 2022; Unnikrishnan & Kattookaran, 2020). Moreover, weak and often non-transparent institutional environments generate more risks for pension funds, which can be reluctant to invest their money (Krishna & Mukherjee, 2021). Moreover, the socio-economic divisions of states in India pose challenges to fair provision of infrastructural development; rural areas are often not well served (Saini & Giri, 2022). Meeting these difficulties calls for joint efforts of the government and the private sector to foster conditions favourable for infrastructure investment, particularly by pension funds.

In general, it can be stated that pension funds carry a lot of potential for influencing infra-financing in India; however, such potential cannot be easily realized given the structural realities of pension investment in India. India should encourage public-private partnerships and improve upon regulations related to pension funds in a way that the latter can aid the country in its requirement for infrastructure.

## ***2.2 The Role of Pension Funds in India's Future Development***

India has developed its pension system, but it

is still experiencing several critical issues that affect its capability to provide for its retirees and the country's future growth. Currently, the system is divided into two main components: Employees pay as much as 10% of its payroll into the Employee Pension Scheme (EPS) for the people in the formal sector and the National Pension Scheme (NPS) for civil servants and employees in the private sector. To this extent NPS is a good initiative but its coverage is still quite restricted and it fails to cover the casual and contractual employees who form a very large workforce in India today. The EPS, however, is inadequate because the contribution rates are low thus; most pensioners lack adequate savings that they require after they have retired. However, private pension plans are also available, but possibilities for their use are also limited due to low information about their existence and low demand for risky, low-yield retirement products. To rectify these problems the government of India needs to ponder over the following issues. In addition to increasing pension coverage to the informal sector employees, government encourage other pension participants from low-income earners to pay increased amount through mandatory saving or voluntary supplements. On the same note, increased public awareness programs on financial issues might reduce this kind of awareness gap that exists. Apart from the benefits to investors, Indian authorities can use pension funds for investment in long-term oriented infrastructure projects. Some of the characteristics that make fund investment suitable for infrastructure are; The long-term investment horizon that pension funds have, The requirement for relatively security like returns. Through public-private partnerships and development of Infrastructure Investment Trusts that the government can attract pension funds to invest in top priority projects like roads, bridges and renewable energy as these investments not only serve the pension funds' beneficiaries but also the country. The processes leading to enhancement of diversification and governance practices of pension fund management also ensure that such funds are used optimally. In the long run, the Indian government can get the best of both worlds that help to develop a sustainable and robust pension system which is also economically productive and beneficial for the country's future generation by leveraging pension fund.

## ***2.3 ESG Principles in Pension Fund Investments***

The consideration of ESG factors in pension funds investment has risen in recent years because of the realization of their suitability for institutional investment.

Sustainability is now considered mandatory to manage different potential threats and achieve higher future returns. Several empirical studies suggest that better-performing companies having sustainable ESG strategies in their business cover the advantages of having a better corporate image, happy employees, and enhanced operational effectiveness (Xie et al., 2018; Iamandi et al., 2019). In addition, ESG factors are relatively new on the financial materiality list that affects investment and portfolio management, Amel-Zadeh & Serafeim (2018).

It is useful to examine better practices of ESG integration from a global perspective and apply them to the Indian scenario. For instance, Nordic institutional investors have engaged in private methods to deal with ESG hazards, affirming that active investor participation yields positive results in corporate governance (Semenova & Hassel, 2019). Such strategies can work in India, where institutional investors are expected to talk to firms about ESG matters in a bid to enhance responsibility. However, the applicability of these practices needs to be done in the Indian context, keeping the social, economic structure, legal requirements, and corporate governance issues in mind (Yan et al., 2022). That is why, according to recent works, the creation of a more localized ESG rating could add to the effectiveness of ESG integration in India to some extent.

However, there are issues with how engagement strategies are being adopted, even as companies increase their focus on ESG. Skeptics emphasize that a strong ESG imperative may create 'greenwash' when firms may merely pay lip service to ESG compliance (Simpson et al., 2022). Further, there is often a disconnect between ESG performance and financial returns; in a way, research has shown that high indexes of ESG do not always translate to better performance (Teng et al., 2022; Ademi & Klungseth, 2022). This poses questions about whether ESG engagement is genuinely enhancing company stewardship and whether there is a divergence between investor and company practice.

Overall, the success of such engagement approaches in influencing corporate sustainability depends on the readiness of corporate organizations to integrate ESG principles into organizational values. Studies also reveal that internal stakeholders who integrate ESG plans with their organisational goals record significant improvement in SP (Clementino & Perkins, 2020). However, the problem is how to advance ESG integration throughout the corporate value chain and across all relevant governance layers (Aldowaish et al., 2022). In addition, the subject of integrating ESG principles into pension fund investments

is tightly connected with the broader opportunities to advance corporate sustainability and businesses' financial outcomes; however, the managing of the risks linked with these opportunities should be done prudently. The recommended strategies, therefore, include integrating international benchmarks and standards to fit the Indian environment and the attainment of a sincere corporation commitment to the principles of ESG to support sustainable development by pension funds.

#### **2.4 Marketing ESG-Conscious Pension Funds**

Sustainable investments have grown to be an important market development that has been noticed, especially regarding the pension fund. Over the years, the world has become more sensitive to climatic change and social issues, and this has pushed many investors to finance their projects based on their virtues. This change is evident from the progressively growing assets under management within sustainable ESG-friendly funds globally Meira et al. (2022). This trend is also gradually emerging in India as pension funds stepped up their interest in the use of ESG indicators in investments due to both new regulations and shifting demand from clients (Alda, 2019).

The branding and communication of ESG-aware funds are critical in the development of a flow of investors. There should be clarity and rigorous standards, and sustainability should be demonstrated through those investments that are made. According to Hauff & Nilsson, published in 2022, it is evident that conveying ESG strategies helps improve investor confidence. For example, ESG labels and certifications act as a marketing strategy promoting the use and adoption of sustainable and responsible investing (Sim & Kim, 2022). But the problem arises with these claims to prevent the concept of 'green-washing' whereby funds may claim ESG, then investment in these particular funds is encouraged (He et al., 2023).

Consumer behaviour in managing pension fund responsibility systematically in India exposes concerns about sustainable investments. The research into Generation Y investment preferences indicates that millennials are more willing to consider environmental concerns when investing (Ibid). This demographic shift is a perfect opportunity for pension funds to aim to deliver on the expectations of the modern, sophisticated, socially responsible investor. Still, there are still some research gaps about ESG investments, specifically about the management of the perceptions, knowledge, and engagement of the wider investor base, which might limit the further development of sustainable

funds (Soler-Domínguez et al., 2020).

The opposing arguments hold that with the increase in ESG investment, investors are yet to overcome their fears about financial performance. According to certain research, ESG funds might experience worse funds than conventional ones, although this has led to debates concerning the balance of conscionable investment besides financial profit (Cerqueti et al., 2022). Such a perception may likely dissuade prospective investors who give a premium to the financial performance aspects without concern for sustainability. Thus, the necessity ensues for pension funds to prove that the incorporation of ESG factors can result in good financial performance so that they would attract more clients and followers (Pisani & Russo, 2021). In essence, fan marketing of ESG-conscious pension funds is still in its early stage, and major issues such as consumer perception, concerns about performance, and risks of greenwashing still persist. Through proper branding and transparency, pension funds are in a position to convene with investors and make the financial world more sustainable.

### 2.5 Gaps in Existing Literature

The presented literature analysis highlighted several important research gaps arising from the existing literature on pension fund investments in infrastructure and ESG principles in the Indian context. Firstly, limited literature research exists exploring the inclusion of ESG principles more pointedly regarding pension fund investments for infrastructure in India. Global understandings of ESG factors are continually becoming apparent, but their deployment in infrastructure financing by pension funds, particularly in emerging markets such as India, remains marginal. Also, there is a lack of research on marketing strategies that target ESG-sensitive pension funds in these markets. There is a rising need to communicate the benefits of investing sustainably in response to the increasing interest in green investment, despite the fact that this area is poorly covered. Last of all, the relationship between value creation measured by financial performance, the incorporation of ESG factors, and the improvement of business positioning remains another knowledge gap. Further studies are required to understand how these elements can be incorporated into pension funds to achieve sustainability in the Indian context.

## 3. Method and Instruments

The current work employs a qualitative exploratory research approach and uses semi-structured interviews as the main data collection tool. The qualitative

data collection method is appropriate to the study because the research topic is complex and constantly evolving, and it covers infrastructure investment, ESG principles, and market positioning (Qi et al., 2023). Since these areas are rather new and untouched in the Indian setting, the use of qualitative methods offers the right and proper means of collecting rich data regarding different experiences, perceptions, and approaches of stakeholders (Husband, 2020).

The exploratory nature of the study enables the researchers to detect patterns and associations that have not yet been well developed in theory (Makri & Neely, 2021). Semi-structured interviews allow for the analysis of both rigor and guidance while focusing on detailed answers, but at the same time, staying in line with the goal of the study. This approach is suitable for learning how pension funds manage the relationship between the development of infrastructure and ESG compliance, as well as for learning how such pension funds effectively market themselves to attract other like-minded investors (Lim, 2024).

### 3.1. Sample Selection

The study has identified potential respondents who are directly or indirectly involved in pension fund investment and ESG non-compliance issues in India. Purposive sampling was used to recruit participants based on the specialization and experience that will be of value in the study (Beedell, 2021). This sampling technique fits the qualitative research paradigm because the aim of the study is to obtain detailed perceptions from those who are in direct contact with the phenomenon of interest (Campbell et al., 2020). The data was received from pension fund managers, ESG compliance officers, marketing practitioners, and the Indian financial sector policymakers and regulators. The number of participants chosen is 15 because it allows for the selection of participants with different views and is manageable. The sample selection tries to conclude diverse types of pension funds and stakeholder involvement to increase external validity inside India. The study seeks to attain respondent diversity while focusing on operational feasibility.

### 3.2. Data Collection

Semi-structured interviews were used in data collection since they allow for guided responses and additional insights to be collected. It is an approach that guides the researchers in tackling the research objectives while offering the participants the flexibility that they need

to come up with one or more distinct case studies and strategies (Naz et al., 2022). Interviews were conducted face-to-face or through online and mobile applications, depending on the participant's availability (De Villiers et al., 2022). The researcher has created an interview guide with open-ended questions focusing on four main themes: pension funds' investment approaches to link infrastructure development with ESG considerations, obstacles encountered when implementing ESG criteria, marketing techniques that promote ESG-related product appeals, and perceived ESG versus financial returns and market appeal coherence. Participants were asked for their permission to record the interviews, and data collection will proceed until data analysis reaches a state of "theoretical saturation" is achieved (Guest et al., 2020).

### 3.3. Data Analysis

The data collected for the study was subjected to thematic analysis, a rigorous qualitative research technique used to find, describe, and understand patterns in the data. Thematic analysis is considered best for exploratory research as it provides a structured way of making meaning out of complicated data collected. The following stages have been used in the analysis of the data: Data familiarisation, initial code generation, theme search, theme review, and defining and renaming the themes (Peel, 2020). Qualitative data was analysed manually with the help of software tools such as NVivo, which was used for coding and data storage (Mattimoe et al. 2021). The last section summarizes the results of the study and discerns patterns with regard to the function of pension funds for infrastructure development and the market positioning in consideration of ESG factors. The results were analysed and discussed within the framework of the present research, which helped advance knowledge of the discussed subject

and offer relevant recommendations. These findings aid in the development of a logical flow as to how results should be presented and discussed (Goldsmith, 2021).

### 3.4. Ethical Considerations

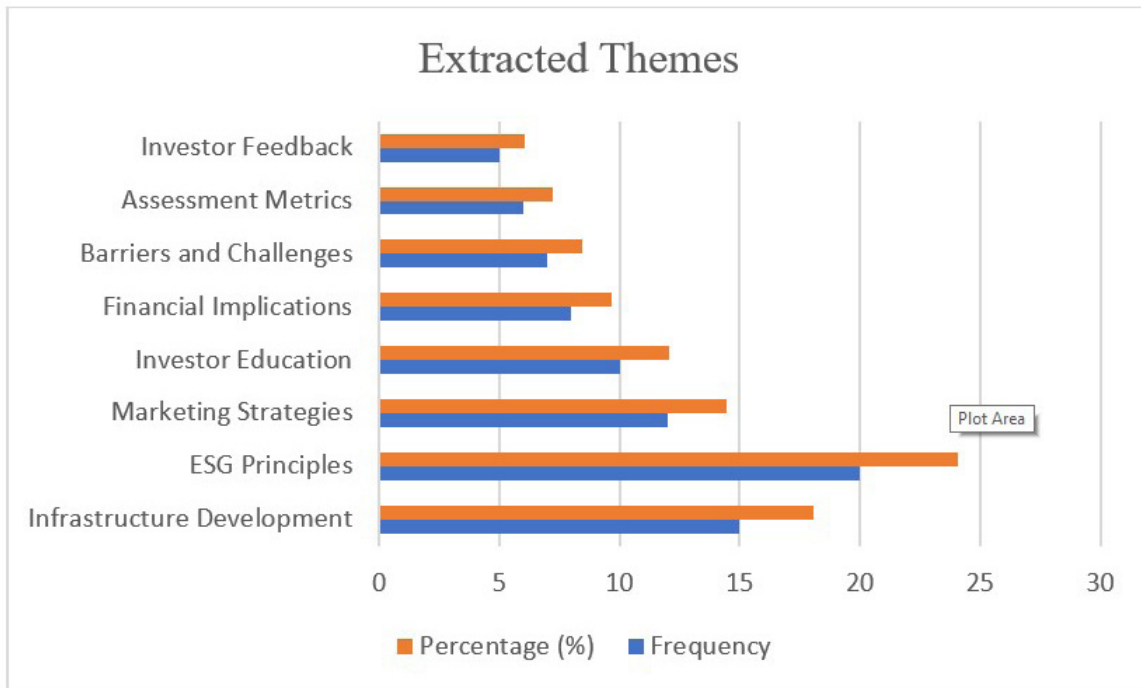
This research meets all ethical standards with respect to the participants and data collected. All interviewees will also receive information about the study, possible uses of the data, and their right to withdraw from the study at any point in time (Lobe et al., 2020). All participant's identities were anonymized, and all data collected was kept secure to ensure confidentiality. Recordings and transcripts of interviews will remain available only to the researchers and will be used only for research purposes (Kang & Hwang, 2021). Ethical approval was obtained from the institutional review board governing research on human subjects.

### 4. Results

The frequency analysis presented in Table 01 and Figure 01 revealed the distribution of the emphasized aspects in the interviews. ESG Principles were cited most often (24.1%), which is evidence of their importance in the management of sustainable investments. Infrastructure Development comes second with 18.07 percent, which shows that it is crucial to strike a balance between development and the impact it has on the environment. Marketing Strategies (14.46%) and Investor Education (12.05) are the areas that highlight awareness creation on ESG-friendly funds. Costs and Benefits (9.64 %) and barriers and challenges (8.43 %) demonstrate issues of both the adoption and performance of ESG. A lower percentage for Assessment Metrics (7.23%) and Investor Feedback (6.02%) indicate they are the secondary importance but are crucial for enhancing ESG success and investor's trust.

*Table 1 Extracted Themes*

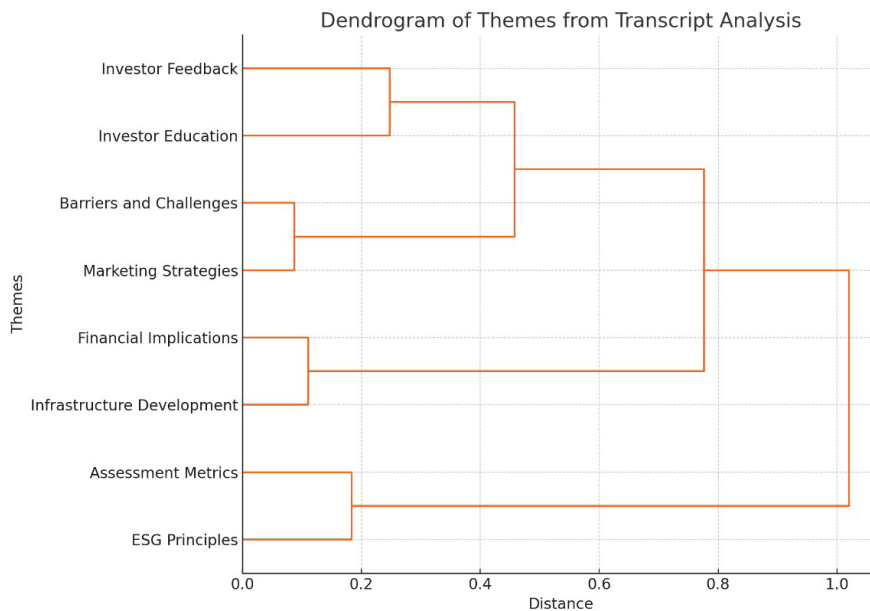
<b>Themes</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Infrastructure Development	15	18.07
ESG Principles	20	24.10
Marketing Strategies	12	14.46
Investor Education	10	12.05
Financial Implications	8	9.64
Barriers and Challenges	7	8.43
Assessment Metrics	6	7.23
Investor Feedback	5	6.02



*Figure 1 Extracted Themes*

The dendrogram presented in Figure 02, helps to group thematically related concepts, and stronger connections have been identified, like the connection between Infrastructure Development with ESG Principles to the association between Marketing Strategies and Investor Education. These links highlight where sustainability and

infrastructure complement each other and how education aids marketing. Ontology topics such as Barriers and Financial Implications create a separate cluster of risk and performance. This hierarchical grouping helps in appreciating the areas of thematic convergence and possible areas of focus and engagement to relevant stakeholders.



*Figure 2 Themes Cluster*

The world map presented in Figure 03 condenses the key terms extracted from interviews and identifies the keywords such as “ESG,” “infrastructure,” “investors,” and “sustainability.” Large word sizes also emerged as high-frequency terms, which include the key priorities in the critical area, such as linking ESG principles with

infrastructure and investor engagement. Smaller terms include ‘returns, and ‘metrics,’ showing more subtle issues of performance and measurement. This idea is manifested visually to condense ideas and goals, helping the researchers to focus on core issues and manage financial imperatives, regulatory restraints, and ethical concerns.



*Figure 3 Word Map*

**Theme 01: Infrastructure Development**

Pension funds’ involvement in financing infrastructure projects in India is on the rise, and all of them integrate ESG factors. Most of the participants felt that pension funds are used to finance sustainable projects. As one pension funds manager said: “We only invest in renewable energy; our pension fund invests in the solar farms, for instance, and to me, that considers value for the pension funds and at the same time embraces environmental conservation.” Another participant added, “Infrastructure investments are very important for our fund to have and provide long-term returns while fulfilling social requirements.” This is because, most of the time, the goals of generating profits and delivering ESG results are hard to align. One compliance officer thus said, “This is due to the fact that the initial cost of green projects scares away some players while the long-term yield justifies investment into green projects for pension fund portfolio.” Similarly, a policymaker said, ‘Our pension fund investments in smart cities, for instance, incorporate both the environment

and social factors, thus complementarity of growth and sustainability.’

Additionally, these investments are influenced by the regulatory frameworks of the respective countries. One participant argues, ‘Policy certainty is crucial for directed pension fund infrastructure.’ However, inconsistencies cause problems. An analyst later postulated that; “Various policy disappointments slow down sustainable project launches, therefore straining the pension fund investment portfolio’s ESG readiness.” Still, pension funds retain their positivism. Said a senior manager: “We provide for pensioners’ financial security and the development of India by investing in renewable energy and urban infrastructure.” Lastly, a pension funds promoter quotes, “Pension funds are best suited to make sustainable infrastructure the new growth model,”

**Theme 02: ESG Principles**

Sustainability is a key consideration in pension funds to facilitate the achievement of global standards

on ESG compliance. A compliance officer quoted, “The current pension fund employs ESG factors such as carbon footprint and social impact cutting the risky exposures.” In the same manner, another participant said, ‘We incorporate other standards such as the GRI and the SDGs within the assessment process to achieve a holistic ESG conformity. One pension funds regulator highlighted that ‘ Due to the absence of standard guidelines, frameworks, and approaches, ESG reporting is not standard in India, which makes pension fund assessment a challenge. “ However, some of the funds use benchmark indices that are developed internationally. “Our firm is in sync with International standards in our possession, but we support domestic ESG codes,” said one of the participants.

Further, pension funds are gradually being appreciated for their sustainability-related purposes. One senior manager said, “ESG investments make our fund solid, especially in times of market volatility.” Another one mentioned, “Investors are particularly interested in our funds that are associated with ESG; our allocation of the market is enhanced.” Regulatory barriers persist. For instance, one participant opined that: “there is constant policy change which affects the ESG-aligned projects.” However, optimism remains as a compliance officer stated, ‘Our pension fund’s ESG approach incorporates the issue as much in terms of financial success as in terms of ethical considerations.’ These insights emphasize the necessary support to justify additional integration of ESG principles with pension fund investments.

### ***Theme 03: Marketing Strategies***

ESG marketing for pension funds is about willingness and credibility. “I remember a marketing manager who said this, ‘Our pension fund ensures proper disclosure of ESG data, and any third-party audit proves it is not greenwashing.’” Another noted, “Transparency in demonstrating environmental and financial yields which are important to investors is well understood.” In addition, one of the participants shared that we inform investors through webinars and reports about how beneficial investment in ESG is for both, financial and social outcomes; as he said “I have heard things like Millennials and Gen Z investors are becoming much more interested in our fund’s campaigns that are environment-friendly,”

However, there is a lack of external impediments to ESG investments, and there is scepticism about ESG returns. ‘Several investors view ESG-centric pension funds as yielding fewer returns, which we respond with statistics

on sustained performance,’ a compliance officer said. Further, there are also issues of the inconsistency of metrics used in project management. A senior marketer stated it is due to the fact that ‘The lack of consistent ESG standards complicates marketing.’ In addition, participants highlighted that positive feedback from the investor helps to polish their perceptiveness; as one fund manager said, “ESG compliance is now valued by investors; they also prefer to see real-life examples of how their earnings can also be good, said a manager. Another commented, “The investment success stories of our fund make a lot of impression, more so; it draws a pool of different investors.”

### ***Theme 04: Investor Education***

One of the key measures for the development of ESG-friendly pension funds is investor training, which contributes to the explanation of links between sustainable business priorities and their impact on financial outcomes. A marketing manager was kind enough to say this; “At our company, we hold webinars and workshops exposing how pension fund investment is safe while promoting ESG.” Another participant continued, “The case studies of the projects that are in accordance with ESG standards can help investors in terms of making them believe into sustainable investment.” Millennials and Gen Z populations are of major concern to pension funds as they are the younger demographic population. According to a compliance officer, the young investors insist on their funds being aligned. Another participant said, “As you know we have campaigns that are designed for young investors through our pension fund here, there and everywhere, it is all about the social relevance of your investments as well as the stability of the returns that you get.”

Further, establishing ESG investments as prominent barriers to education includes poor concern and negative attitudes towards such investments. A fund manager averred, “To this date, the majority of investors still perceive ESG funds as extreme and high risk, which means we have the challenge of proving their long-term gains.” Another added, “There is always too much pushback from conventional financiers who only look at the Topline rather than the bottom line.” In response, pension funds rely on clear and open communication. A marketing executive described one fund, saying: “Our fund provides detailed ESG reports to prove the environmental and social outcome of investments.” Combined, a senior manager said, “Investor education is trust, establishing their financial objectives with morally sound and sustainable

approaches.” This has been the emphasis on the education of the investors, and the outcome of this approach has been positive. Participants reveal that investors are more likely to fund ESG when the role of ESG in risk management is made clear to them.

### ***Theme 05: Financial Implications***

It is crucial that pension funds not only earn reasonable returns on investment but also do that sustainably by integrating ESG factors and clearing misconceptions about such investments being inferior. “Some people believe that ESG-oriented funds are less profitable, but, in fact, they may be more profitable in the long run,” said an investment analyst. One of the participants said, and rightly so, when they are averse to market shock that particularly hit some of the companies in our pension fund, ESG is real in as much as it is financially sustainable. Benchmarking is critical in assessing internal impacts on matters relating to finance. A fund manager said, “ROI and IRR requirements are paired with ESG ratings that help achieve financial goals as well as socially responsible investments.” Another participant’s view was also expressed in these terms: “When it is sorted by comparing ESG-aligned initiatives to traditional ones, the latter appears superior in terms of risk-adjusted returns.”

As for the risks, significant fixed capital costs are required for ESG-compliant infrastructure projects. “ESG initiatives may involve massive investments, especially in the generation of renewable energy, which may make short-term orientated stakeholders object,” an ESG officer said. Another form of increase is brought about by changes in regulatory frameworks. “Long-term ESG investments have some problems, one of them: constant changes in the policies,” commented a senior analyst. However, pension funds continue to hold positive expectations. “ESG investments capture more investors with a conscience, which makes the funds financially viable,” commented a participant. Another quote, “The emphasis on both financial performance and ESG performance enhances our market position.” Investor responses also support this tactic. “Some investors are understanding the financial gains that ESG funds provide,” said a fund manager. One stated, “Pension funds need to state that ESG investing is not only good, but it also generates good returns.”

### ***Theme 06: Barriers and Challenges***

There are several challenges that pension funds experience while trying to embrace ESG principles

in their investments to get localized financial gains. “Sustainability in terms of infrastructure calls for high initial investment, and this is a discouraging factor,” said one of the fund managers. Another participant stated, “Due to regulatory inconsistency in India, we encounter delays, which in turn affects the kind of project that we can invest in but should be ESG compliant.” Another challenge is investors’ scepticism of the reports and figures that are published about their investments by companies and other organizations. “They think ESG investing cannot generate good returns – this is from a marketing executive.” One compliance officer agreed with this, adding that “to help investors understand the longevity of prosperous ESG investments, one needs to carry out repeating education and demonstration of performance.” Internal issues crop up from time to time, such as the current issue of the absence of a unified set of metrics on ESG. ‘The lack of a standard practice adds challenges towards assessing as well as reporting on ESG performance, one senior analyst pointed out. Another participant said, “Creating company-specific ESG frameworks is needful but costly.”

However, as mentioned above, all participants stressed the role of resilience. An ESG officer adds: ‘Our pension fund mitigates the problem by implementing the international ESG standards and promoting the regional ones.’ Another aspect is cooperation with regulators as well. “Interacting with policymakers guarantees that the strategies of pension funds are consistent with the growing regulations in ESG,” mentioned a participant. The inability to meet operating costs and attract capital investments is the major hardship that is offset by positive responses from investors. A senior manager said, “The investors who consider ESG benefits are more inclined to invest in our fund.” Another said, “If barriers are to be effectively managed, it takes more than waiting for the problem to happen, and subsequently, it responds that it takes a proactive approach, which involves effective communication, high-quality and tested processes, and standard performance.”

### ***Theme 07: Investor Feedback***

Investor feedback is one of the most informative tools for pension fund strategies and can inform both investment and marketing strategies. “It is stated that investors demand more ESG compliance because it is seen as the key to long-term stability, according to a fund manager.” Another said, “Younger investors, especially Millennial investors, expect their pension funds to support ESG objectives.” One common thread in responses is the

subject of ESG and its relation to investment returns. “To the investors I have come across, they are often worried about short-term gains at the expense of long-term stability,” said the compliance officer. One of them said, “Such findings felt confident and quota for ESG investments proved to sceptical investors.” Transparency is a typical requirement that investors tend to impose on firms. Engaging ESG reports and third-party audits are important in shaping perception among investors, observes a senior analyst. Feedback also informs of areas that need to be addressed or areas that require change. An example of an interviewee’s comment is as follows: “I have overheard investors seek better guidance with regard to evaluating the ESG performance,” quoted by a marketing executive. Another added, “Expanding the number of case studies helps our investors relate to the work of our fund.” Entice feedback or positive reinforcement influences change in the strategy of pension fund management. “If there is a move towards renewable energy and sustainable infrastructure, the investors back such projects, which inspires us to do more of them,” noted a fund manager. Another stated, “Having the investor’s feedback helps ensure that the pension fund being managed here is efficient to the current market standards.”

## 5. Discussion

The present study addresses an important barrier in sustainable finance involving the complementary function of pension funds in infrastructure development and ESG practices in India’s dynamic financial ecosystem. The objectives are clear: to drive growth in infrastructure, which is aligned with ESG compliance and catalytic marketing strategies. Qualitative exploratory methodology with semi-structured interviews is adequate to capture nuanced stakeholder perspectives. Thematic analysis adds to the data interpretation, whereas purposive sampling includes relevant stakeholders. However, the study could have built on its findings, drawing in quantitative measures to supplement the qualitative insights and adding further to their understanding of the impacts of ESG-aligned infrastructure investments.

This study finds that pension funds in India enable infrastructure financing while integrating ESG principles. The dual function is important for addressing the country’s immense infrastructure deficit, which is estimated at \$1.5 trillion by 2025. The participants stressed that investing in renewable energy projects like solar and wind farms is complementary to both ESG and financial stability

objectives. One participant explained, “There is no reason why pension funds cannot make sustainable infrastructure the new growth model.” Recent research supports this assertion as it shows that pension funds can efficiently bring the capital for sustainable infrastructure, both meeting the requirements of environmental and financial targets (Gregory, 2023).

However, the study also points to some of the challenges that pension funds are facing, such as regulatory inconsistencies, high startup costs, and aligning ESG long-term infrastructure investments. Ehlers et al. (2023) underscore these challenges, which echo findings concerning the lack of standardisation in ESG metrics required globally with an overall need nationwide, as is the case in India. Beyond that, poor institutional and regulatory frameworks make it difficult to integrate ESG activities into investment strategies in emerging markets (Said, 2023). While the GCCs have their own localized ESG frameworks, India lacks such localized ESG frameworks, posing unique barriers for pension funds that wish to align with global sustainability standards.

An additional important insight from the study is the critical importance of marketing strategies in the positioning of ESG-conscious pension funds. The participants noted the necessity of transparency, third-party audits, and targeted digital campaigns targeting younger groups. As demonstrated by Hauff and Nilsson (2022), clarity in demonstrating environmental and financial yields is paramount, and one participant added, ‘Transparency in demonstrating environmental and financial yields is crucial.’ However, as indicated by Simpson et al. (2022), the pernicious problem of greenwashing threatens the credibility of real efforts (Clementino & Perkins, 2020), and greenwashing can threaten investor trust if it is used as a greenwashing phenomenon that could undermine true ESG efforts.

The theme of investor education reared its head in the form of workshops, case studies, and transparent reporting to fill the gaps in awareness. This finding is consistent with Makhija (2023), highlighting the growing need for ESG literacy amongst institutional investors (Bhattacharjee & De, 2022). However, there is scepticism about ESG performance, as highlighted in studies conducted globally by Ademi and Klungseth (2022) that show mixed results on returns in ESG investments (Caporale et al., 2021). In particular, in emerging markets, this scepticism has been quite pronounced since the performance of ESG-aligned funds is unpredictable, given the regulatory and

infrastructural complexities.

Global studies put forth contrasting perspectives that ESG-aligned funds outperform in stable markets, but the predictability of performance is not guaranteed in emerging economies like India. This study helps to place these global findings in the context of India's unique socio-economic landscape and provides actionable insights for policymakers and fund managers. For instance, Gupta (2023) pointed to the need for country-specific governance factors to improve ESG performance in emerging markets (Gupta, 2023). This shows that localized dynamics are crucial to ESG strategy implementation, and hence, tailored approaches that take local dynamics into account. In addition, the study shows that pension funds can act as a catalyst for sustainable development by steering their investments to the nation's objectives. This corroborates the idea of Neto & Fontgalland (2023) that emerging markets such as India have a great potential for growth in sustainable finance as long as the right frameworks and incentives are set up. Combining ESG principles into the management of pension funds serves not only to achieve financial stability but also to advance purposes wider, hence confirming her place in the finance of sustainable development.

In general, this study has significant implications for pension fund managers, regulators, and policymakers. The explanation of the dual role of pension funds in guiding infrastructure development along ESG principles lays out a path to sustainable investment strategies. The marketing insights serve as a reminder of the importance of being transparent and educating investors in order to bring in ESG-conscious stakeholders. The study also contributes to the academic literature by studying gaps that exist in ESG integration with emerging markets (EM), specifically in the case of India. These findings present options to policymakers for establishing standardized ESG frameworks that create confidence amongst investors and facilitate and promote the growth of sustainable infrastructure. This research finally bridges the discourses of theory and practice to contribute to the conversation on the path of sustainability in India.

### **5.1 Recommendations**

The Indian government should focus on improving both the structure of pension schemes and their utilization. The following suggestions can help improve pension fund participation and contribute to long-term infrastructure development:

**Expand and Incentivize Pension Fund Participation:**

**Inclusion of Informal Sector Workers:** The government of all countries ought to implement measures that will make the workers in the informal sector to embrace pension programs. Presumably for informal employees, it may be possible to extend the National Pension Scheme (NPS) alongside basic government matching contributions for lower paid employees. **Subsidize Contributions for Low-Income Groups:** For the unorganized workers, the government could open matching contributions schemes where it makes a matched contribution or a fixed contribution towards improving the pension fund of the workers.

### ***Increase Contribution Levels:***

**Mandatory Pension Contributions:** The government can require employers to contribute to pension for all employees as it happens in Australia and Canada. This would improve on the existing situation and make almost all workers improve on their retirement benefits. **Voluntary Top-Ups:** Incentivise people or offer them another CRA to save more for their pension than the statutory requirement for saving for retirement.

### ***Promote Financial Literacy and Awareness:***

**Awareness Campaigns:** It is imperative that the government comes up with campaigns throughout the country in regard to retirement savings and the pension funds. Such campaigns should aim at encouraging members of the low-income earners, farmers and other residents in the rural areas and the youths to embrace savings. **Simplified Pension Options:** Reduce pension schemes complexity and increase pension accessibility for people who still do not have a foundation in finance. There could be simpler pension schemes, which are cheaper and come with easier and less complicated terms factor for most people likely to be targeted.

### ***Leverage Pension Funds for Infrastructure Development:***

**Investing Pension Funds in National Infrastructure Projects:** Based on the findings of this research, increasing the pension assets equity overhaul, stability, and value and its contributions to the share of the India's gross domestic product can be enhanced significantly through increasingly the pension fund towards long term infrastructure investment. Infrastructure funds are ideal for such investment due to their long-time investment horizon and the relative stability that they require. The

government may do this through approval of Infrastructure Investment Trusts where pension funds are included in mega infrastructure projects of roads, bridges, energy and other aspects of urban development.

**Public-Private Partnerships (PPP):** The Indian government should promote the Public Private Partnership (PPP) between the government and pension fund for the projects in infrastructure. It means pension funds can invest in public infrastructure projects yielding long term stable returns for pensions and economy.

### ***Strengthen Pension Fund Management:***

**Enhanced Fund Management Strategies:** To make certain that pension funds are able to meet their funding requirements, the government ought to encourage improved management practices as well as offering pension funds the ability to invest in equities, property and infrastructure. **Government-Backed Infrastructure Funds:** The Indian government has the capacity of establishing Pension Infrastructure Funds (PIFs) where pension funds are accumulated targeting infrastructure development so that the funds are used in nation building as well as generating income for pensioners.

## **6. Conclusion**

This study has explored the dual role of pension funds in India as infrastructure development enablers and defenders of ESG principles. The study showed that Pension funds can be both profitable and environmentally sustainable by financing sustainable projects, such as renewable energy and smart cities. The implementation is challenging due to regulatory inconsistencies, high initial costs, and the lack of a standardized ESG framework. Transparency, marketing, and investor education are of great importance to ESG consciousness. Pension funds are catalysts of sustainable development, align financial stability with India's growth imperatives, and accommodate investors' evolving demands. In essence, the study has provided actionable insights for policymakers, fund managers, and stakeholders, highlighting the need for strategic frameworks to integrate environmental, social, and governance (ESG) analysis into the development of sustainable infrastructure financing.

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