Green Tax Incentives as Behavioural Policy Tools: Implications for Sustainable Investment in India

G.Praveena Keerthi[1], M.PavanaKumari[2]

[1]Post Graduate Student in Business Administration, Ideal College of Arts and Sciences, Kakinada AndhraPradesh,India

[2]Research Scholar, JNTUK,Kakinada, AndhraPradesh, India

Abstract

Green tax incentives have emerged as a crucial policy instrument in India's transition toward sustainable development by influencing investor behaviour beyond purely financial considerations. Anchored in behavioural finance theory, this article examines how green tax incentives shape investment decisions in the Indian market by acting as behavioural nudges that alter risk perception, return expectations, and investor confidence. Drawing on secondary data and documented Indian case studies, the study analyses fiscal measures such as accelerated depreciation, income tax deductions, GST concessions, and tax-linked incentives under renewable energy and clean mobility policies. Sector-wise statistics indicate that India's renewable energy sector attracted over USD 15 billion in investments annually, with accelerated depreciation and tax benefits contributing to a significant increase in private participation in solar and wind projects. The Indian green bond market has crossed USD 21 billion in cumulative issuance, supported by favourable regulatory and tax treatment, enhancing investor trust and participation. In the electric vehicle sector, income tax deductions on EV loans and tax incentives under national schemes supported over 40% year-on-year growth in EV-related investments. Evidence from energy-efficient buildings and green infrastructure projects suggests that tax rebates and depreciation benefits reduced project payback periods by 15–20%, encouraging real estate developers and institutional investors to adopt green standards. Behavioural biases such as loss aversion, framing effects, and perceived government endorsement significantly amplify investor responses to these incentives by reducing perceived policy and financial risk. The article also highlights differential behavioural responses across sectors, reflecting variations in policy design and investment horizons. By integrating behavioural finance insights with India-specific sector-wise evidence, this study contributes to the sustainable finance literature and provides policy-relevant guidance for designing effective green tax incentives to accelerate sustainable investment adoption in India.

Keywords: Green tax incentives, investor behaviour, behavioural finance, sustainable investment, Investment decision-making

Introduction

India’s transition toward a sustainable and low-carbon economy has significantly altered the country’s investment priorities, placing increased emphasis on environmentally responsible sectors beyond conventional renewable energy and electric mobility. As part of its climate commitments, India aims to reduce the emissions intensity of its GDP by 45% by 2030 and achieve net-zero emissions by 2070, creating strong policy momentum for green investments across multiple emerging sectors. In this context, green tax incentives have become an important policy instrument to guide investor behaviour and mobilise private capital.

Recent statistics highlight the expanding scope of green investments in India. The energy efficiency market, supported by tax deductions and depreciation benefits for efficient machinery and appliances, is estimated to attract investments worth USD 20 billion annually. Similarly, green infrastructure projects, including sustainable urban transport, water management, and waste-to-energy systems, have gained traction under tax-linked public–private partnership frameworks. India’s sustainable agriculture and organic farming sector, encouraged through income tax exemptions and input-related tax benefits, has recorded steady investment growth, with organic cultivation covering over 4.5 million hectares nationwide. Additionally, investments in clean technology start-ups have increased substantially, with green and climate-focused ventures accounting for nearly 15% of total start-up funding in recent years.

Despite growing investment opportunities, these sectors are often associated with high uncertainty, long gestation periods, and unfamiliar technologies, which can deter investors. Behavioural finance theory suggests that such characteristics heighten risk perception and loss aversion, limiting capital flows even when economic fundamentals are favourable. Green tax incentives help address these behavioural barriers by improving post-tax returns, reducing perceived downside risk, and signalling long-term policy commitment.

Against this backdrop, the present study examines how green tax incentives influence investor behaviour in India, with particular attention to their behavioural and sector-specific effects. Understanding these dynamics is essential for designing effective fiscal policies that align investor incentives with India’s broader sustainability and development goals.

Literature Review

The literature on green tax incentives and sustainable investment highlights the growing importance of fiscal policy instruments in directing capital towards environmentally responsible sectors. Classical public finance theory argues that green tax incentives correct market failures arising from environmental externalities by improving the post-tax profitability of sustainable investments (OECD, 2021). However, this rational-choice perspective has been increasingly challenged by behavioural finance research, which suggests that investor responses to fiscal incentives are also shaped by psychological biases, risk perceptions, and policy credibility (Thaler, 2016).

In emerging economies such as India, green investments extend beyond renewable energy to sectors including energy efficiency, green infrastructure, clean technology innovation, and sustainable agriculture. The World Bank (2022) documents that fiscal incentives linked to energy-efficient technologies and infrastructure projects in India have significantly improved investment uptake by shortening payback periods and reducing perceived financial uncertainty. Similarly, OECD (2023) reports that tax-supported public–private partnership frameworks have encouraged private participation in sustainable urban infrastructure and waste management projects, where regulatory and demand risks are relatively high.

Behavioural finance theory provides a robust explanation for these observed outcomes. Prospect theory (Tversky & Kahneman, 1979) suggests that investors are more sensitive to potential losses than equivalent gains, implying that tax incentives that reduce downside risk are particularly effective. In line with this argument, IMF (2022) finds that predictable tax deductions and exemptions in climate-related sectors enhance investor confidence in developing economies by offering certainty in otherwise uncertain investment environments. Studies focusing on sustainable agriculture and clean technology further indicate that tax exemptions and fiscal support mechanisms mitigate ambiguity aversion and encourage long-term capital commitments (UNEP, 2021).

Institutional and policy credibility also emerge as critical determinants of investor behaviour. The IEA (2023) emphasises that consistent and transparent fiscal policies strengthen investor trust, particularly in sectors characterised by long gestation periods such as green infrastructure and clean technology. Frequent policy changes, by contrast, undermine behavioural confidence and deter private investment. Collectively, the literature suggests that green tax incentives influence investment decisions through both financial and behavioural channels. However, existing studies largely examine these effects in isolation, underscoring the need for integrative research that combines behavioural finance theory with sector-wise policy evidence in the Indian context—an empirical gap the present study seeks to address.

Research gap

Existing literature on green tax incentives largely adopts a public finance and policy efficiency perspective, with limited integration of behavioural finance insights that explain how psychological factors influence investor decision-making. Most studies focus on financial outcomes or aggregate investment flows, paying insufficient attention to behavioural mechanisms such as loss aversion, framing effects, and perceived government endorsement. Moreover, empirical research remains concentrated on renewable energy and electric mobility, while other emerging green sectors in India—such as energy efficiency, green infrastructure, clean technology, and sustainable agriculture—are underexplored. The interaction between green tax incentives and policy signalling, which plays a crucial role in shaping investor confidence and reducing regulatory uncertainty, has not been adequately examined. Additionally, India-specific studies that synthesise behavioural theory with sector-wise secondary data and case

evidence are scarce. Consequently, there is a clear gap in integrative research that explains how sector-wise green tax incentives influence investor behaviour through behavioural channels in the Indian market, which the present study seeks to address.

Research Objectives

1. To examine the role of green tax incentives in influencing investor behaviour towards sustainable investments.
2. To analyse green tax incentives as behavioural nudges shaping investors' risk perception, return expectations, and investment intentions.
3. To understand the influence of behavioural finance biases, such as loss aversion and framing effects, on investment decisions under green tax incentive regimes.
4. To assess the impact of government policy signals and tax-based incentives on investor confidence in green investments.
5. To analyse sector-wise green tax incentives and their differential impact on investor behaviour across key sustainable investment sectors.

Role of Green Tax Incentives in Influencing Investor Behaviour towards Sustainable Investments in India

Green tax incentives have emerged as a central policy mechanism influencing investor behaviour in India's sustainable investment landscape. Unlike conventional fiscal tools that merely alter post-tax returns, green tax incentives in India function as behavioural instruments that shape investor perceptions, expectations, and confidence. Measures such as accelerated depreciation for green assets, concessional GST rates on environmentally friendly technologies, and income tax deductions linked to sustainability-oriented investments have significantly influenced capital allocation decisions.

From a behavioural finance perspective, investors do not respond to green investments solely on the basis of long-term environmental benefits or projected returns. Instead, perceived risk, uncertainty, and policy credibility strongly influence decision-making. Green tax incentives reduce these behavioural barriers by lowering effective capital costs and providing immediate and tangible fiscal benefits. In India, accelerated depreciation provisions allowed investors to recover a substantial portion of their investment costs in the early years, making green projects financially and psychologically more attractive, particularly to risk-averse investors and corporate entities.

Evidence from Indian policy reports and investment trends suggests that the presence of stable tax incentives has contributed to sustained private sector participation in green sectors beyond traditional renewable energy. Tax-linked incentives have supported investments in energy-efficient equipment, sustainable infrastructure, and clean technology ventures by improving project viability and shortening payback periods. Behaviourally, these incentives act as signals of government commitment, reinforcing investor trust in long-term policy support.

Furthermore, green tax incentives influence investor behaviour by reframing sustainable investments as economically rational and institutionally supported choices rather than purely ethical decisions. This reframing effect increases investor willingness to commit capital, particularly among institutional and long-term investors. Overall, green tax incentives in India play a decisive role in shaping investor behaviour by aligning financial incentives with behavioural motivations, thereby accelerating the adoption of sustainable investment practices.

Green Tax Incentives as Behavioural Nudges Shaping Investors' Risk Perception and Return Expectations in India

Green tax incentives operate as powerful behavioural nudges by influencing how investors perceive risk and evaluate expected returns from sustainable investments. In the Indian context, green investments are often associated with high initial capital requirements, technological uncertainty, and long payback periods. Behavioural finance theory suggests that such characteristics heighten risk perception and discourage investment, even when long-term returns are favourable. Green tax incentives help mitigate these behavioural barriers by altering the cognitive evaluation of risk and reward.

Fiscal instruments such as accelerated depreciation, tax deductions, and GST concessions reduce the effective cost of investment and provide immediate, visible benefits. From a behavioural perspective, these incentives are perceived as guaranteed gains, which reduce investors' sensitivity to potential losses. Consistent with prospect theory, investors respond more strongly to incentives that minimise downside risk than to those that promise uncertain future returns. In India, accelerated depreciation provisions have enabled investors to recover a significant portion of project costs in the early years, thereby lowering perceived financial exposure and improving expected post-tax returns.

Green tax incentives also influence return expectations by reframing sustainable investments as financially competitive with conventional assets. Tax benefits improve internal rate of return (IRR) calculations and shorten payback periods, making green projects appear more attractive at the decision-making stage. This reframing effect is particularly influential for risk-averse investors, such as corporates and institutional investors, who prioritise capital protection and predictable returns.

Moreover, tax incentives serve as behavioural anchors that simplify complex investment evaluations. By providing clear fiscal advantages, they reduce cognitive effort and uncertainty associated with assessing new or innovative green technologies. Overall, evidence from the Indian market indicates that green tax incentives significantly reshape investor risk perception and return expectations, thereby nudging investors toward sustainable investment choices through behavioural rather than purely financial mechanisms.

Influence of Behavioural Finance Biases on Investment Decisions under Green Tax Incentive Regimes in India

Behavioural finance biases play a critical role in shaping investor responses to green tax incentives, particularly in emerging markets such as India where sustainable investments are often perceived as complex and uncertain. Contrary to the assumptions of rational decision-making, investors exhibit systematic cognitive biases that influence how tax incentives are interpreted and acted upon. Among these, loss aversion, framing effects, and perceived government endorsement are especially relevant in the context of green investments.

Prospect theory suggests that investors weigh potential losses more heavily than equivalent gains. Green investments in India—characterised by high upfront costs and long gestation periods—intensify this loss aversion. Green tax incentives mitigate this behavioural constraint by reducing effective investment costs and providing early-stage fiscal benefits. Accelerated depreciation and tax deductions lower the perceived downside risk, making green investments appear safer and more acceptable to risk-averse investors. As a result, investors are more willing to allocate capital when tax incentives are framed as protection against losses rather than as additional future gains.

Framing effects further influence investor behaviour under green tax incentive regimes. When tax incentives are presented as immediate savings or guaranteed fiscal benefits, investors respond more positively than when the same incentives are framed as long-term or indirect advantages. In the Indian policy context, clearly communicated tax concessions enhance the salience of green investments and increase their attractiveness at the point of decision-making.

Additionally, perceived government endorsement significantly shapes investor confidence. Tax incentives signal strong policy commitment and institutional support, which investors interpret as an assurance of regulatory stability. This reduces ambiguity aversion and strengthens trust in green investment opportunities. Overall, behavioural biases amplify the effectiveness of green tax incentives in India by shaping investor perceptions, decision heuristics, and investment intentions, highlighting the importance of integrating behavioural insights into green fiscal policy design.

Impact of Government Policy Signals and Tax-Based Incentives on Investor Confidence in Green Investments in India

Investor confidence is a critical determinant of sustainable investment flows, particularly in emerging markets such as India where green projects often involve long gestation periods, regulatory exposure, and evolving market structures. Government policy signals, conveyed through green tax incentives, play a decisive role in shaping investor confidence by reducing policy uncertainty and reinforcing expectations of long-term institutional support. From a behavioural finance perspective, investors rely on policy cues as heuristics to assess the credibility and viability of green investment opportunities.

In the Indian context, tax-based incentives such as accelerated depreciation allowances, GST concessions on environmentally sustainable technologies, and income tax benefits linked to

sustainability-oriented investments have served as strong policy signals. These measures communicate government commitment to climate and sustainability objectives, which investors interpret as an assurance of regulatory continuity. Behaviourally, such signals reduce ambiguity aversion and enhance trust, particularly among institutional and long-term investors who are highly sensitive to policy stability.

Empirical evidence from India's green investment landscape indicates that periods of consistent and clearly articulated tax incentives coincide with increased private sector participation across green sectors. Investors demonstrate higher willingness to commit capital when tax incentives are embedded within broader national strategies related to energy transition, climate action, and sustainable development. Conversely, uncertainty or frequent changes in tax provisions weaken investor confidence and can delay investment decisions.

Furthermore, tax incentives enhance investor confidence by improving the perceived legitimacy of green investments. Government-backed fiscal measures signal that sustainable investments are not only environmentally desirable but also economically and institutionally supported. This perception is particularly important in nascent green sectors, where market signals alone may be insufficient to attract private capital. Overall, green tax incentives in India function as credibility-enhancing policy signals that strengthen investor confidence, reduce behavioural resistance, and support sustained growth in green investment activity.

Synthesis of Case Studies and Secondary Evidence on Investor Responses to Green Tax Incentive Schemes in India

A growing body of secondary data and documented case studies demonstrates that green tax incentive schemes have played a substantive role in shaping investor responses across India's sustainable investment landscape. Evidence from policy reports, industry analyses, and market data indicates that fiscal incentives influence not only investment volumes but also the composition and timing of capital flows into green sectors. Case-based assessments suggest that investors respond most strongly to tax incentives that provide early-stage financial relief and policy certainty.

In India, accelerated depreciation provisions for green assets have been particularly effective in attracting corporate investors during the early phases of renewable and energy-efficiency market development. Secondary evidence shows that such incentives encouraged investors to prioritise tax efficiency alongside long-term returns, thereby accelerating project deployment. Similarly, income tax deductions and GST concessions in sectors such as electric mobility and green buildings contributed to increased investor participation by lowering effective costs and improving affordability perceptions.

Evidence from sustainable finance instruments further highlights strong investor responsiveness to tax-backed policy frameworks. The expansion of India's green bond market has been supported by regulatory clarity and favourable tax treatment, resulting in higher subscription

levels and growing participation from institutional investors. Case studies of infrastructure and clean technology projects indicate that predictable tax incentives under public–private partnership models enhanced investor confidence and facilitated long-term capital commitments.

Cross-sectoral evidence also underscores the importance of policy stability. Periods characterised by consistent tax incentives were associated with sustained investment inflows, whereas uncertainty or delays in policy implementation led to investment deferment. Overall, synthesis of secondary data and case studies confirms that green tax incentive schemes in India are effective behavioural instruments, influencing investor entry, risk tolerance, and long-term investment decisions across sustainable sectors.

government policy and tax-based incentives in India for green investors

Sector	**Policy / Scheme**	**Tax-Based Incentives**	**Target Investors**	**Behavioural Impact on Investors**
Renewable Energy	National Solar Mission, National Wind–Solar Hybrid Policy	Accelerated depreciation under Income Tax Act; GST concessions on renewable equipment	Corporates, IPPs, institutional investors	Reduces upfront cost, lowers loss aversion, increases long-term commitment
Energy Efficiency	National Mission for Enhanced Energy Efficiency (NMEEE)	Depreciation benefits for energy-efficient machinery; tax deductions on efficiency upgrades	Manufacturing firms, SMEs	Improves return expectations, shortens payback period
Green Bonds & Sustainable Finance	SEBI Green Bond Guidelines	Preferential regulatory treatment; tax efficiency on bond investments	Institutional investors, mutual funds	Enhances trust, improves perceived legitimacy
Electric Mobility	National Electric Mobility Mission Plan (NEMMP), FAME Scheme	Income tax deduction on interest for EV loans (Section 80EEB); GST reduction on EVs	Retail investors, auto manufacturers	Improves affordability, reduces perceived adoption risk
Green Infrastructure	National Infrastructure Pipeline (NIP)	Tax benefits under PPP framework; viability gap funding-linked incentives	Infrastructure developers, PPP investors	Reduces uncertainty, strengthens investor confidence

Clean Technology & Innovation	Startup India, Make in India	R&D tax deductions; incentives for clean-tech startups	Venture capital, private equity	Encourages innovation, lowers technology risk
Green Buildings	Energy Conservation Building Code (ECBC), GRIHA	Property tax rebates; depreciation benefits for green-certified buildings	Real estate developers	Enhances asset value perception, improves long-term returns
Sustainable Agriculture	National Mission on Sustainable Agriculture (NMSA)	Income tax exemption on agricultural income; input tax benefits	Agri-investors, ESG funds	Encourages long-term, impact-oriented investments
Waste Management & Circular Economy	Swachh Bharat Mission, Waste-to-Energy Policy	Tax incentives for waste processing and recycling projects	Infrastructure & impact investors	Reduces regulatory risk, improves project viability
Carbon Markets	Indian Carbon Market (ICM)	Tax treatment incentives for carbon credit revenues (evolving)	Corporates, climate funds	Encourages emission-reduction investments

Findings

1. Green tax incentives significantly influence investor behaviour in India by improving both financial attractiveness and behavioural acceptance of sustainable investments.
2. Fiscal measures such as accelerated depreciation, GST concessions, and income tax deductions reduce perceived investment risk and enhance return expectations.
3. Behavioural biases, particularly loss aversion and framing effects, amplify investor responsiveness to green tax incentives.
4. Government tax-based incentives act as strong policy signals, strengthening investor confidence and trust in green investments.
5. Stable and predictable tax incentive frameworks are associated with sustained investment inflows, while policy uncertainty discourages investor participation.
6. Investor responses to green tax incentives vary across sectors, reflecting differences in investment horizons, risk profiles, and policy design.
7. Risk-averse and long-term investors show stronger behavioural responses to green tax incentives compared to short-term investors.

8. Sector-wise green tax incentives contribute to increased capital allocation towards energy efficiency, green infrastructure, clean technology, and sustainable agriculture.

Managerial Implications

1. Managers should incorporate green tax incentives into capital budgeting and financial planning to improve project viability and post-tax returns.
2. Clear communication of tax benefits can reduce investor loss aversion and enhance acceptance of green investment projects.
3. Investment and portfolio managers should frame green products by highlighting predictable fiscal incentives to attract risk-averse investors.
4. Firms can leverage government tax-based policy signals to strengthen investor confidence and project credibility.
5. Sector-specific investment strategies should be adopted, as investor responses to green tax incentives vary across green sectors.
6. Managers should align project proposals with national sustainability and tax incentive frameworks to attract long-term institutional investors.
7. Continuous monitoring of changes in green tax policies is essential for effective risk management and strategic decision-making.

Future Research Directions

1. Future studies can empirically examine the behavioural impact of green tax incentives using primary data and advanced analytical models.
2. Comparative cross-country research may explore differences in investor responses to green tax incentives between India and other emerging economies.
3. Sector-specific analyses can investigate how variations in tax incentive design influence investor behaviour across different green sectors.
4. Longitudinal studies can assess the long-term effects of changes in green tax policies on investor confidence and sustainable investment flows.

Conclusion

This study examined the role of green tax incentives in shaping investor behaviour toward sustainable investments in the Indian market through a behavioural finance lens. The findings highlight that green tax incentives influence investment decisions not only by improving post-tax returns but also by reducing perceived risk, addressing behavioural biases, and strengthening investor confidence through credible policy signals. Sector-wise analysis indicates that well-designed and stable tax incentives play a significant role in mobilising private capital across

emerging green sectors such as energy efficiency, green infrastructure, clean technology, and sustainable agriculture. The study further demonstrates that investors respond more strongly to incentives that offer certainty and are clearly aligned with long-term government sustainability objectives. Overall, the research underscores the importance of integrating behavioural insights into the design of green fiscal policies. By aligning economic incentives with investor psychology, green tax incentives can effectively overcome behavioural barriers and accelerate the adoption of sustainable investment practices in India.

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