LEX LOCALIS-JOURNAL OF LOCAL SELF-GOVERNMENT
ISSN:1581-5374 E-ISSN:1855-363X
VOL. 23, NO. S2(2025)

FACTORS IMPACTING WILLINGNESS OF ENTERPRISES FOR GREEN INVESTMENTS: AN EMPIRICAL STUDY

Dr. Swapandeep Kaur[1], Dr. Abhay Singh Chaudhary[2], Dr. Priya Sharma[3], Dr. Neeraj Kumar[4], Pooja Khurana[5], Dr.Geetika Sharma[6]

[1]Assistant Professor, Chandigarh Group of Colleges, Jhanjeri, Mohali -140307, Chandigarh School of Business, Department of Business Management.
[2]Assistant Professor, Department of Business administration, Chandigarh business School of Administration, Chandigarh Group of Colleges, Landran,Mohali, 140307
[3]Assistant Professor, Shoolini University Centre For Distance And Online Education, Solan, (H.P.) India, Shoolini University of Biotechnology and Management Science.
[4]Associate Professor, Department of Business Administration, Swami Vivekananda Institute of Engineering and Technology, Banur-140601, Punjab, India.
[5]Lecturer, Department of commerce,MIMIT Malout -152107,Punjab, India
[6]Associate Professor, Chandigarh Business School of Administration, Landran

*Corresponding Author: Swapandeep.j3185@cgcuniversity.in
Neeraj_kumar@sviet.ac.in[4]
Khurana0727@gmail.com[5]
drgeetikasharma.sus@gmail.com[6]

Abstract
The cumulative global emphasis on environmental sustainability has pushed enterprises to integrate green investments into their strategic frameworks. Hence, this study examines the factors persuading enterprises' intentions to adopt green energy solutions, focusing on economic, organizational, and regulatory factors. Using a binary logistic regression model, the research analysesthe data from 365 enterprises of hilly states of India. The findings reveal that key operational focus and awareness significantly drive green investment decisions, whereas outmoded enterprise characteristics, such as tenure, industry type, and ownership structure, display weaker influence on the adoption of green practices. Despite the rising interest in green investments, high financial risks, long payback periods, and regulatory uncertainties remain the critical barriers. The study further underscores the need for targeted policy interventions, financial incentives, and increased awareness programs to accelerate green adoption. The insights added for this study can help policymakers and industry leaders develop tailored strategies to foster sustainable business practices, ensuring a balanced approach to economic growth and environmental conservation.

Introduction

The impact that environmental protection has on the lives of local people has made it a major concern for governments around the world. There is a dilemma where environmental preservation and economic growth frequently conflict with each other. By incorporating all stakeholders in the process and taking environmental considerations into account when making investment decisions, businesses are currently attempting to strike a balance between these two. Concurrently, for the past 30 years, the United Nation has been trying to unite nations in the fight against climate change.

The 26th Annual Summit, known as COP26, was held in Glasgow from October 31 to November 13, 2021. The main goal of this conference of parties was to reach an agreement on how to tackle climate change and the measures that shows significant impact included improving climate resilience, reducing greenhouse gas emissions, and providing necessary funding (Razzak et al., 2023; UNFCC, 2021). For that purpose, the key goals of UN were to achieve net-zero emissions by mid-century, limit global temperature rise to below 1.5°C, preserve natural habitats and communities, mobilize sustainable finance, and work together to address climate challenges.

Moreover, achieving net-zero emissions by the middle of the century, keeping the rise in global temperatures below 1.5°C, protecting communities and natural ecosystems, raising sustainable finance, and cooperating to address climate issues were the main objectives of the conference of parties. In the spitting, as environmental degradation becomes more widely acknowledged, businesses are using green innovation to integrate ecological sustainability into their development objectives. This entails developing eco-friendly goods and procedures that contribute to energy conservation and pollution reduction. Along with that, financial success and environmental sustainability are increasingly dependent on green innovation (Dong et al., 2021; Chen & Feng, 2019). Undoubtedly, green innovation is hampered by a number of issues, including high risks, unpredictable results, low returns, and lengthy payback times.According to research, businesses are under more pressure as a result of tighter environmental laws and heightened customer awareness.

Study on green investment shows that stringent environmental regulations and increased consumer awareness have put more pressure on companies subsequently, addressing environmental issues strategically, companies can gain competitive advantages. However, high investment costs and risks associated with environmental management often discourage companies from pursuing green innovations (Jaffe et al., 2005; Rennings, 2000).

It is evident from prior studies that government regulations are essential in motivating industries to implement green innovations. Reducing the environmental effect of corporate operations and integrating environmental responsibility into strategic planning are the main goals of green investments. Hence, companies with superior environmental practices or those creating alternative energy technology may be eligible for these investments (World Green Economic Council, 2021), energy efficiency, carbon capture or sequestration, and low emission energy supply are the three primary pillars of green investments (Eyraud et al., 2011; Inderst, 2012; Tran et al., 2020; Hong & Kostovetsky, 2012).

Furthermore, the primary challenge in green innovation is developing effective investment strategies and motivating companies to adopt them. Henceforth, governments need to strengthen policies to attract private finance and funding for green growth. Aligning and reforming regulations can help overcome obstacles to green investment and create an environment that attracts both domestic and international investments (Hynes, 2009).

Need for the Study

As the global community grapples with the escalating challenges of climate change, the authoritative for sustainable business practices has gained unprecedented prominence. Enterprises, traditionally driven by financial profitability, are now compelled to integrate environmental responsibility into their strategic frameworks. However, the Intentions of businesses to invest in green technologies remains a complex and multifaceted issue influenced by economic, regulatory, and organizational factors.

The significance of this study stems from the urgent need to comprehend the determinants influencing green investment decisions of the enterprises. While global summits such as COP26 have underscored the necessity for collaborative action to mitigate environmental degradation, the actual adoption of green investment strategies by businesses continues to face barriers which includes high initial costs, long payback periods, regulatory uncertainties, and insufficient awareness. This study aims to bridge the gap between policy initiatives and corporate behaviour by identifying the factors that either facilitate or hinder green investment among enterprises.By evaluating enterprises' Intentions to adopt green technologies, this study provides empirical insights that can inform policymakers, industry leaders, and stakeholders on how to create an enabling environment for sustainable business practices. The research seeks to illuminate the interplay between financial viability and environmental sustainability, demonstrating how regulatory support, awareness programs, and strategic

incentives can drive a paradigm shift towards eco-friendly investments. Understanding these dynamics is critical to fostering a sustainable economic landscape where environmental and business goals align harmoniously.

Literature Review

Zhang et al. (2013) conducted a study to assess enterprises' Intentions to adopt cleaner production technologies in China using the Theory of Planned Behaviour framework. The study found that perceived attitudes and social pressure had a significant positive impact on adoption, while perceived behavioural control had a negative impact. The findings highlighted the importance of social pressure in promoting cleaner production behaviour. The study recommended that policymakers provide economic incentives and regulatory enforcement to encourage adoption, as well as establish grants or policies to foster innovation in cleaner production.

Tran et al. (2016) reported on the rise of green finance and its opportunities in Singapore. The study highlighted challenges such as lack of public-private collaboration, short-term financial systems, and greenwashing. The recommendations emphasized the need to adopt environmental, social, and governance standards to foster a conducive culture for green projects and grow the green economy.

Adepoju and Akinwale (2019) investigated the factors influencing micro and small-scale businesses' readiness to embrace renewable energy technology in Lagos State, Nigeria. A survey of 300 enterprises revealed that factors such as spreading information, effective government regulations, confidence in others, developing renewable energy markets, and technical acceptability influenced adoption. The study suggested collaboration between private businesses and government bodies to promote adoption.

Skordoulis et al. (2020) assessed respondents' Intentions to invest in photovoltaics (solar energy). The study found that most investments were made in solar energy due to financial factors and government subsidies. Recommendations included providing financial incentives, such as feed-in tariff subsidy policies, to increase investments in photovoltaics and designing effective policies for the wellbeing of investors in renewable energy.

Objectives

1. To evaluate the impact of key operations on enterprises' Intentions to adopt green energy solutions.
2. To identify the barriers and enablers for enterprises in adopting green energy technologies.

Research Questions

1. How do key operations of an enterprise influence its Intentions to adopt green energy solutions?
2. What are the main barriers and enablers that affect enterprises' adoption of green energy technologies?

Hypotheses

1. H1: Key operations of an enterprise have a significant positive impact on its Intentions to adopt green energy solutions.
2. H2: The primary barriers to adopting green energy technologies are high investment costs and associated risks, while government incentives and regulations act as enablers.

Research Methodology

1. Selection of Study Area

Solan, Dehradun, Jammu, and Rourke district was chosen for its concentration of large-scale enterprises. Hilly states of India were initially an agricultural economy, saw increased industrial investment due to central government incentives.

2. **Sampling Design**

A purposive sampling technique was employed to select enterprises. The enterprises are categorized into micro, small, medium, and large-scale based on annual turnover. The Krejcie and Morgan (1970) formula was used to determine the sample size, resulting in 365 enterprises proportionately divided among the three types of enterprises based on scale.

3. **Data Collection**

Data collection occurred from 2022 to 2023, using both primary and secondary data to achieve the study's objectives. A well-designed questionnaire, developed after extensive literature review and expert consultation, was used for data collection.

Primary Data

Primary data was collected on the following aspects:

- Socio-economic profile of respondents.
- Size of enterprises and number of employees.
- Types of green investment practices.
- Perception and awareness of green investment.
- Adoption of green investment practices.
- Factors and prerequisites affecting green investment decisions.
- Constraints restricting green investment decisions.

Reliability and Validity of the Instrument The questionnaire's reliability was assessed using Cronbach's α, which indicated high internal consistency (α = 0.880). Content validity was ensured through expert advice and necessary adjustments.

Secondary Data

Secondary data was obtained from reputable journals such as Scopus, Web of Science, and Elsevier, and publications from government departments like the Department of Industries Shimla, MSME Institute Chambaghat, Solan, MSME Baddi, Census 2011, Economic Survey of Himachal Pradesh, Krishi-Kosh, and Shodhganga

Findings

1. **Factors influencing the future Intentions of the enterprises for the adoption of wind and solar plants: Binary logistics**

The binary logistic analysis reveals that the model explains 38.9% of the variability in enterprises' Intentions to adopt wind and solar plants. Pharma and chemical enterprises, as well as those with higher awareness, are significantly more inclined to invest in green energy solutions. Enterprises with greater awareness are 1.76 times more likely to adopt wind and solar plants.

Table 1 Factors influencing the future Intentions of the enterprises for the adoption of wind and solar plants: Binary logistics

Particulars	Odds ratio	Standard error	Z	P>|z|	95 % confidence interval	
					Lower bound	Upper bound
Key operations of the company	2.217	0.436	4.04 ***	0.000	1.507	3.262
Type of enterprise	43.213	0.505	0.082	0.082	.621	3002.42
No of employees	3.161	2.522	1.44	0.149	.661	15.099
Business tenure	4.055	5.483	1.04	0.300	0.286	5.740
Ownership of the enterprise	0.661	0.223	-1.22	0.222	0.340	1.284
Awareness of wind and	1.763	0.277	3.60	0.000	1.295	2.401

solar plants			***			
Constant	1.01e-06	8.13e-06	-1.72	0.085	1.49e-13	6.865
Number of observations	365					
LR chi^2(6)	56.52					
Prob chi^2	0.0000					
Pseudo R^2	0.3891					
Log likelihood	-121.17483					

*Note: *** ,**& * represent significance at p≤0.01, p≤ 0.05 & p≤ 0.10 respectively*

The logistic regression analysis highlights that key operations and awareness of wind and solar plants play crucial roles in enterprises' readiness to adopt these green energy solutions, while the type of industry, number of employees, business tenure, and proprietorship show no significant impact (p >0.05).

2. **Factors Influencing the Future Intentions of Enterprises to Adopt Green Infrastructure: Binary Logistics**

The analysis explores predictors shaping enterprises' future Intentions to embrace green infrastructure. The overall binary logistics model is statistically significant (LR chi2 = 75.47, p < 0.001), explaining 26.21% of the variability in enterprises' Intentions to adopt green infrastructure. Key operations and awareness of green infrastructure have significant positive influences, with companies prioritizing key operations being approximately twice as likely, and those with higher awareness being approximately 2.5 times more likely, to adopt green infrastructure. In contrast, the type of industry, number of employees, business tenure, and proprietorship have low association with future Intentions.

Table 2 Factors influencing the future Intentions of the enterprises for the adoption of green infrastructure: Binary logistics

Particulars	**Odds ratio**	**Standard error**	**Z**	**P>|z|**	**95 % confidence interval**	
					Lower bound	**Upper bound**
Key operations of the company	2.003	.401	3.46***	0.001	1.352	2.968
Type of enterprise	1.66	1.08e+12	0.03	0.974	-	-
No of employees	3.694	3.991	1.21	0.226	0.444	30.701
Business tenure of the enterprises	3.62	2.34e+10	0.03	0.979	-	-
Ownership of the enterprises	1.234	0.591	0.44	0.661	0.4821	3.158
Awareness of green infrastructure	2.515	0.467	4.96***	0.000	1.747	3.621
Constant	8.17e-38	2.12e-34	-0.03	0.974	-	-
Number of observations	365					
LR chi^2(6)	75.47					
Prob chi^2	0.0000					
Pseudo R^2	0.2621					
Log likelihood	-106.21558					

*Note: *** ,**& * represent significance at p≤0.01, p≤ 0.05 & p≤ 0.10 respectively*

3 Factors Influencing the Future Intentions of Enterprises to Adopt Green Energy: Binary Logistics

The binary logistic regression analysis examines factors influencing future Intentions to adopt green energy. With an odds ratio of 4.384 and a negative z-score (Z=-1.52, p<0.01), likely due to coding of the independent variable, the analysis shows a decline in future Intentions from manufacturing to FMCG, pharma, and chemicals, indicating manufacturing firms are more inclined towards green energy. Business tenure, awareness of green energy, type of industry, and number of employees do not show significant associations with future Intentions. The likelihood ratio chi-square test (LR chi2 = 31.23, p < 0.001) confirms the model's relevance in predicting Intentions to adopt green energy, with a log likelihood of -72.902 and a pseudo R2 value of 0.2500, explaining 25% of the variability. The results highlight that key operations are a significant positive predictor of Intentions to adopt green energy.

Table 3: Factors influencing the future Intentions of the enterprises for the adoption of green energy: Binary Logistics

Particulars	Odds ratio	Standard error	Z	P>|z|	95 % confidence interval	
					Lower bound	Upper bound
Key operations of the company	4.384	1.759	-1.52***	0.000	1.996	9.627
Business tenure	3.197	2.603	3.68	0.153	0.648	15.775
Ownership of the enterprises	0.911	0.334	1.43	0.801	0.444	1.871
Awareness of green energy	0.742	0.145	0.025	0.128	0.506	1.089
Constant	1.587	3.055	0.24	0.810	0.0365	69.019
Number of observations	365					
LR $chi^2(6)$	31.23					
Prob chi^2	0.0000					
Pseudo R^2	0.2500					
Log likelihood	-72.902339					

*Note: *** ,**& * represent significance at p≤0.01, p≤ 0.05 & p≤ 0.10 respectively*

Conclusions & Discussion

This study presents a comprehensive analysis of the factors influencing enterprises' Intentions to invest in green energy solutions, shedding light on the underlying economic, organizational, and regulatory considerations. The findings reveal that key operational dynamics and awareness levels significantly impact the adoption of green investments, whereas traditional enterprise characteristics such as business tenure, industry type, and ownership structure exhibit relatively lower influence.

A key takeaway from the analysis is that enterprises with a strong operational focus on sustainability demonstrate a higher propensity to adopt renewable energy solutions. Logistic regression results indicate that businesses prioritizing environmental concerns in their core operations are more than twice as likely to invest in green infrastructure. Additionally, enterprises with greater awareness of renewable energy benefits show a significantly higher likelihood of adopting sustainable practices, reinforcing the critical role of education and

information dissemination in fostering green investment decisions. The study Highlighted that Hypothesis 1 is justified as key operations significantly impact green energy adoption, supported by strong statistical evidence ($p < 0.01$). Hypothesis 2 is partially justified; while financial risks are confirmed barriers, the role of government incentives as enablers lacks strong empirical validation. The study highlights investment costs and regulatory uncertainties as key challenges. Overall, key operations drive adoption, but policy support needs further analysis.

However, despite these positive indicators, the study identifies persistent barriers that deter businesses from fully committing to green investments. High capital costs, long payback periods, and perceived financial risks remain primary deterrents, alongside regulatory complexities and a lack of targeted government incentives. The findings underscore the necessity for policy interventions that not only reduce financial burdens but also create a stable and predictable regulatory environment to encourage long-term green investments.

Furthermore, the study highlights the sectoral variations in green investment Intentions. Manufacturing enterprises exhibit a stronger inclination towards adopting green energy solutions compared to other sectors such as FMCG and pharmaceuticals. This indicates that industry-specific approaches may be required to tailor green investment incentives effectively. Governments and financial institutions must develop customized strategies that address sector-specific challenges and opportunities to maximize green investment adoption across diverse industries.

In conclusion, this study underscores the pivotal role of awareness, strategic incentives, and regulatory clarity in driving green investment decisions. Enterprises are increasingly recognizing the dual benefits of environmental sustainability and financial resilience. However, to accelerate the transition towards green investments, a multi-stakeholder approach is required, involving policymakers, industry leaders, and financial institutions. Strengthening incentives, mitigating risks, and fostering a culture of sustainability will be essential in ensuring that green investments become an integral component of corporate growth strategies. Future research should explore more granular industry-specific dynamics and examine the long-term financial performance of green investments to provide deeper insights into their economic viability and sustainability impact.

Limitations of the Study

The study has several limitations that must be considered. Its geographical scope is restricted to enterprises in the Solan district of Himachal Pradesh, which limits the generalizability of the findings to other regions with different industrial structures and policy environments. Additionally, the use of purposive sampling may introduce selection bias, as the study primarily focuses on large-scale enterprises, potentially overlooking the perspectives of micro and small businesses regarding green investments. Another limitation arises from the reliance on self-reported data, which may be influenced by social desirability bias, leading respondents to overstate their commitment to green investment initiatives. Furthermore, the study primarily examines enterprises' short-term intentions rather than their actual long-term investments, making it difficult to assess the sustained impact of green initiatives. Lastly, the research does not account for potential future shifts in environmental regulations and government policies, which could significantly impact enterprises' green investment decisions over time.

References

Razzaq A, Sharif A, Ozturk I, Afshan S.2023. Dynamic and threshold effects of energy transition and environmental governance on green growth in COP26 framework. *Renewable and Sustainable Energy Reviews* **179**:113-26

Anonymous. 2021. *The Glasgow Climate Pact- Key Outcomes from COP26*. United Nations Framework Convention on Climate Change, Germany.*https://unfccc.int* (4.43 PM, 3rd February 2022).

Dong W, Li Y, Lv X and Yu C. 2021. How does venture capital spur the innovation of environmentally friendly firms? Evidence from China. *Energy Economics***103**: 105582

Chen Y and Feng J. 2019. Do corporate green investments improve environmental performance: Evidence from the perspective of efficiency. *China Journal of Accounting Studies* **7:** 62-92.

Jaffe A B, Newell R G and Stavins R N. 2005. A tale of two market failures: technology and environmental policy. *Ecological Economics***54** :164-174.

Rennings K. 2000 Redefining innovation-eco-innovation research and the contribution from ecological economics. *Ecological Economics***32:** 319-332.

Eyraud L, Wane A, Zhang C and Clements B.2011.Who's going green and why? Trends and deteriminants of green investment. *IMF Working Papers* **11**:39.

Inderst G, Kaminker C and Stewart F. 2012. *Defining and Measuring Green Investments: Implications for Institutional Investors Asset Allocations.* Working Paper No. 24. Organization for Economic Co-Operation and Development,Paris. 54p

Hong H and Kostovetsky L. 2012. Red and blue investing: Values and Finance. *Journal of Financial Economics* **103**: 1-19

Hynes N. 2009. Colour and meaning in corporate logos: An empirical study. *Journal of Brand Management***16:**545–55.

Tran T, Do H N, Vu T H and Do N N M. 2020. The factors affecting green investment for sustainable development. *Decision Science Letters***9:** 365-86.

Zhang B, Yang S and Bi J. 2013. Enterprises' willingness to adopt/develop cleaner production technologies: an empirical study in Changshu, China. *Journal of Cleaner Production* **40**: 62–70.

Skordulis M, Ntanos S and Arabatzis G. 2020. Socioeconomic evaluation of green energy investments: Analyzing citizen's willingness to invest in photovoltaics in Greece. *International Journal of Energy Sector Management***14**:871-90.

Adepoju A O and Akinwale Y O. 2019. Factors influencing willingness to adopt renewable energy technologies among micro and small enterprises in Lagos State Nigeria. *International Journal of Sustainable Energy Planning and Management***19**: 69-82.

Krejcie, R.V., & Morgan, D.W., (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement* **30**: 607-610.