Environmental Performance and Financial Performance: A Resource-Based View Conceptual Framework

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ABSTRACT

The relationship between environmental performance and corporate financial performance remains debated, despite empirical studies on the topic. Previous studies report positive, negative, and insignificant associations, reflecting differences in environmental indicators, financial measures, research designs, and industry contexts. However, existing research has not sufficiently clarified the mechanisms through which environmental outcomes generate financial value or the conditions under which such benefits vary. Utilizing the resource-based view (RBV) and the natural-resource-based view (NRBV), this conceptual paper develops an explanatory framework that links environmental performance to financial performance through resource efficiency, while considering industry environmental intensity as a moderating factor. Environmental performance is conceptualized as observable reductions in emissions, waste, and resource consumption rather than the adoption of environmental policies, certifications, or disclosure practices. A critical comparison of prior studies highlights inconsistencies arising from the use of absolute versus intensity-based environmental indicators, accounting versus market-based financial measures, and short-term versus longer-term assessment periods. Integrating the RBV and NRBV, the paper argues that environmentally beneficial outcomes may reflect firm-specific capabilities in pollution prevention, organizational learning, and the productive use of resources. These capabilities can create economic value when they translate into reduced input consumption, lower operating costs, and more effective asset utilization. Nevertheless, financial gains may be delayed or weakened by environmental investments, compliance costs, and industry-specific production requirements. Accordingly, the framework proposes a positive direct relationship between environmental and financial performance, an indirect relationship through resource efficiency, and a moderating role for industry environmental intensity. The paper contributes theoretically by distinguishing environmental outcomes from underlying capabilities, specifying a plausible value-creation mechanism, and explaining contextual variation in financial consequences. As a conceptual study, it does not claim empirical validation. Instead, it outlines directions for future panel-data research that employs verified environmental indicators, distinct profitability measures, and controls for reverse causality. These propositions offer a more conditional understanding of corporate environmental value creation.

Keywords: environmental performance, financial performance, Resource-Based View, Nature-Resource-Based View, resource efficiency.

INTRODUCTION

Environmental problems are a major concern for companies because their business activities depend on natural resources and produce waste, emissions, and other environmental impacts. Today, firms are expected to reduce the negative effects of their production and operations while remaining competitive. As a result, environmental questions are seen as more than just matters of meeting regulatory requirements and are also considered an important part of business strategy and long-term performance. Environmental performance refers to the extent to which a company reduces the environmental impacts of its operations, typically measured by lower greenhouse gas emissions, less waste, reduced water use, and decreased material or energy consumption. On the other hand, financial performance refers to a firm's ability to earn returns on the resources it uses, with return on assets (ROA) and return on sales (ROS) being the usual measures. Even though these two concepts are different,

better environmental performance can affect resource use, operating costs, stakeholder perceptions of the company, and financial risks, thereby creating a possible link between them.

There is now a more direct way of evaluating the relationship between environmental and financial performance. Galama and Scholtens (2021) reviewed 34 studies and found that lower greenhouse gas emissions were associated with better financial performance. Oestreich and Tsiakas (2024) also found a negative relationship between carbon emissions intensity and profitability among S&P 500 companies. Evidence concerning firms in Africa shows that higher greenhouse gas emissions intensity is connected with lower return on assets and return on equity (Le & Nguyen-Phung, 2024). Nevertheless, the nature of the association depends on the measurement method and the organizational context; therefore, a positive link should not be taken to imply an automatic causal effect. Other recent studies have examined related but separate concepts. Nogueira and others (2023) reviewed the research on environmental sustainability practices and found generally favorable associations with firm performance. Hu and Zhao (2024) discovered a positive relationship between a general evaluation of environmental performance and profitability in Chinese listed companies, even though their indicators also include management-related signals. It therefore follows that conclusions drawn from practices, environmental ratings, or certifications should not be taken as automatic proof of actual emissions or waste reductions.

Although positive associations have been reported, existing studies do not fully establish why environmental outcomes translate into financial returns or why the strength of the relationship differs across industries and financial indicators. The research gap is therefore explanatory rather than the absence of prior studies: emissions-based investigations document associations, while broader practice-based measures sometimes combine managerial actions with actual outcomes. This paper contributes by distinguishing outcomes from practices, identifying operational resource efficiency as a potential value-creation mechanism, and considering industry environmental intensity as a boundary condition. The resulting framework extends the direct relationship without presuming that all environmental improvements are profitable.

LITERATURE REVIEW

Environmental performance

Environmental performance refers to the environmental effects resulting from a company's business activities and the extent to which its operations reduce their negative impact on the natural environment. In practical terms, satisfactory environmental performance can be demonstrated by reductions in air and greenhouse gas emissions, wastewater, and solid waste, in the use of toxic substances, and in unnecessary consumption of materials, water, or energy. There is a necessary difference to be drawn between environmental activities and environmental results. Getting a certification, drawing up an environmental policy, carrying out a recycling scheme, or making public sustainability information is an example of a management practice or a signal. Although such actions may help firms improve the environment, they do not, in themselves, show that the firms have a lower environmental impact. For reasons of conceptual consistency, environmental performance within this framework primarily refers to observable outcomes rather than to voluntary disclosures or the presence of environmental management practices.

Environmental indicators must also be carefully interpreted; for instance, a decrease in emissions per unit of output may indicate efficiency improvements even if total emissions rise due to increased production. Similarly, less waste being produced might be the result of reduced business activity rather than cleaner production methods. Hence, future research should take into account absolute outcomes, intensity-based measures, and the context in which environmental improvements take place.

Financial Performance

Financial performance is the extent to which a company is able to derive financial benefits from its operations and from the effective use of its resources. The financial results of companies can be assessed using accounting indicators, such as ROA and ROS, or market indicators, such as valuation measures. Although these different measures are related, they do not capture exactly the same aspects of performance: ROA looks at profit relative to assets employed, while ROS looks at profit derived from sales.

The fact that cleaner production exists has consequences for the link between environmental and financial performance. It might enhance the productivity of machinery and other assets and thus could help to improve ROA. On the other hand, ROS can be influenced by product pricing, sales volume, market competition, and the recognition of environmental expenses. Furthermore, investments in environmental improvements can occur before any financial savings or reputational advantages become apparent. As a result, the employment of different financial indicators and time frames may lead to inconsistent results in earlier studies.

Recent evidence suggests that improved environmental outcomes may coincide with better financial performance. Galama and Scholtens (2021) conducted a meta-analysis of 34 studies, using 74 effect sizes, and found that firms with lower greenhouse gas emissions generally achieved stronger financial results. Their results also suggested that carbon-policy stringency influences the strength of the relationship. As a synthesis focused specifically on emissions, this provides more direct evidence for the present paper than studies that assess environmental practices alone. Oestreich and Tsiakas (2024) examined S&P 500 firms and identified a robust negative cross-sectional association between carbon emission intensity and profitability. Similarly, Le and Nguyen-Phung (2024), using data from African firms, found that greater greenhouse gas emissions intensity was associated with lower accounting-based financial performance, including ROA and ROE. These findings are consistent with the interpretation that firms achieving lower emissions intensity may also possess resource efficiencies or capabilities relevant to financial returns, although the designs do not by themselves establish causality.

Hu and Zhao (2024) analyzed Chinese listed companies and reported that stronger environmental performance was associated with improved profitability, with potential mechanisms including green innovation, reduced financing constraints, and revenue improvement. Their comprehensive indicator, however, includes elements beyond direct environmental outcomes. The present framework, therefore, draws on their evidence cautiously and distinguishes environmental achievements from managerial practices, certifications, and external recognition. In terms of operations, companies that prevent emissions or reduce waste may need fewer raw materials, use less energy, and incur lower costs for disposal or remediation. Improved resource efficiency can lead to cost reductions and more effective use of the company's operating assets. Apart from direct cost implications, firms with strong environmental performance can improve their relationships with stakeholders and reduce their exposure to environmental controversies. Therefore, a positive relationship is expected when measurable environmental improvements are supported by productive capabilities and when the financial benefits exceed the related investment and operating costs.

Despite the positive outcomes, some researchers have raised concerns about whether improvements in environmental performance consistently result in increased profits. Companies may need to invest in new machinery, pollution control systems, employee training, or the redesign of their production processes. Such expenditures could temporarily raise operating costs or reduce short-term financial returns. Consequently, the economic impact varies depending on the type of investment, the efficiency gains achieved, and the timeframe used to evaluate performance. Despite the positive outcomes, some researchers have raised concerns about whether improvements in environmental performance consistently result in increased profits. Companies may need to invest in new machinery, pollution control systems, employee training, or the redesign of their production processes. Such expenditures could temporarily raise operating costs or reduce short-term financial returns. Consequently, the economic impact varies depending on the type of investment, the efficiency gains achieved, and the timeframe used to evaluate performance. The evidence available today should be interpreted with caution. Menon and colleagues (2024), in their systematic review of Servitization and its impact on environmental and economic performance, emphasized that the existing body of evidence is diverse. They observed that the perceived benefits vary with the business model and the methods used for measurement. Since this review focuses on servitization, it has implications for the wider economic-environmental trade-off and does not provide a direct estimate of the effect of lower pollution on profitability. Similarly, Kanzari et al. (2022) reviewed how financial performance is assessed during transitions to circular business models and highlighted the need for longer-term financial evaluation. This suggests that the timing of expenditure and benefits can change the observed association. Studies using emissions intensity may capture a different construct than those using absolute emissions, while investments in pollution prevention need not yield the same immediate returns

as end-of-pipe controls. Negative or insignificant estimates should therefore be interpreted in light of the indicator, context, and estimation strategy rather than excluded from the theoretical discussion.

A comparison of research designs clarifies the unresolved issue. Galama and Scholtens (2021) aggregate evidence from studies on greenhouse gas emissions, providing a broader synthesis while pooling estimates across different settings and measures. Oestreich and Tsiakas (2024) examine carbon-emissions intensity and profitability among S&P 500 firms; their cross-sectional association cannot fully distinguish environmental effects from differences in productivity or firm characteristics. Le and Nguyen-Phung (2024) examine African firms and accounting-based financial outcomes, offering a different institutional setting. By contrast, Hu and Zhao (2024) use a broader environmental-performance construct, which limits direct comparison with studies of observed emissions. Nogueira et al. (2023) synthesize environmental sustainability practices rather than exclusively environmental outcomes. These differences mean that apparently consistent positive findings need not estimate the same relationship. Evidence also leaves open whether efficiency gains translate environmental benefits into profits, whether financially stronger firms invest more in environmental improvements, and whether sector-specific exposure alters returns.

Reverse causality should also be taken into account. Companies with considerable financial resources may find it easier to obtain clean technologies and invest in environmental improvements. It does not necessarily imply that the profitability of firms demonstrating environmental effectiveness is directly attributable to their environmental performance. Subsequent empirical research should account for prior financial performance and investigate potential lagged relationships.

THEORETICAL BACKGROUND

Resource-Based View Theory

The resource-based view holds that some of the reasons firms perform differently may be explained by the resources and capabilities they control. Barney (1991) stated that resources that are valuable, rare, inimitable, and not easily substituted can serve as a source of long-term competitive advantage. These resources include not only physical and financial assets but also intangible knowledge, organizational routines, managerial skills, and reputation. Yet just because a firm possesses certain resources does not mean these will automatically lead to a competitive advantage; the organization must be able to use them effectively in productive activities.

In 1995, Hart extended the RBV by introducing the natural-resource-based view, which views the relationship between a firm and the natural environment as a potential source of competitive advantage; he regarded pollution prevention, product stewardship, and sustainable development as strategic approaches supported by organizational capabilities. These perspectives show that environmental improvements can be seen as a sign of a firm's ability to combine technology, skills, employee participation, and managerial knowledge in a manner that competitors find difficult to replicate. From this point of view, environmental performance is not, in itself, a valuable capability but rather an observable result that can be the outcome of capabilities such as efficient production, pollution prevention, and continuous improvement. If a company reduces waste and resource use by improving its internal procedures, these capabilities may, at the same time, contribute to the creation of financial value. Thus, the theory of a positive relationship depends on the economic value of the resources and capabilities underlying better environmental performance, not on the assumption that being environmentally responsible automatically leads to profit.

The theoretical distinction between a capability, its environmental outcome, and its economic consequence is essential. Under the RBV, firm-specific routines, technical expertise, and coordination capabilities may be valuable because they improve productivity and are difficult for competitors to imitate (Barney, 1991). The NRBV connects those capabilities to pollution prevention and the management of the natural environment (Hart, 1995). Improved environmental performance is therefore treated here as an observable outcome, not automatically as a valuable resource itself. Operational resource efficiency is proposed as one route through which the underlying capabilities can produce economic value. This reasoning also implies a boundary

condition: the potential value of pollution prevention may differ between industries with high environmental exposure and those where environmental inputs and compliance pressures are less material.

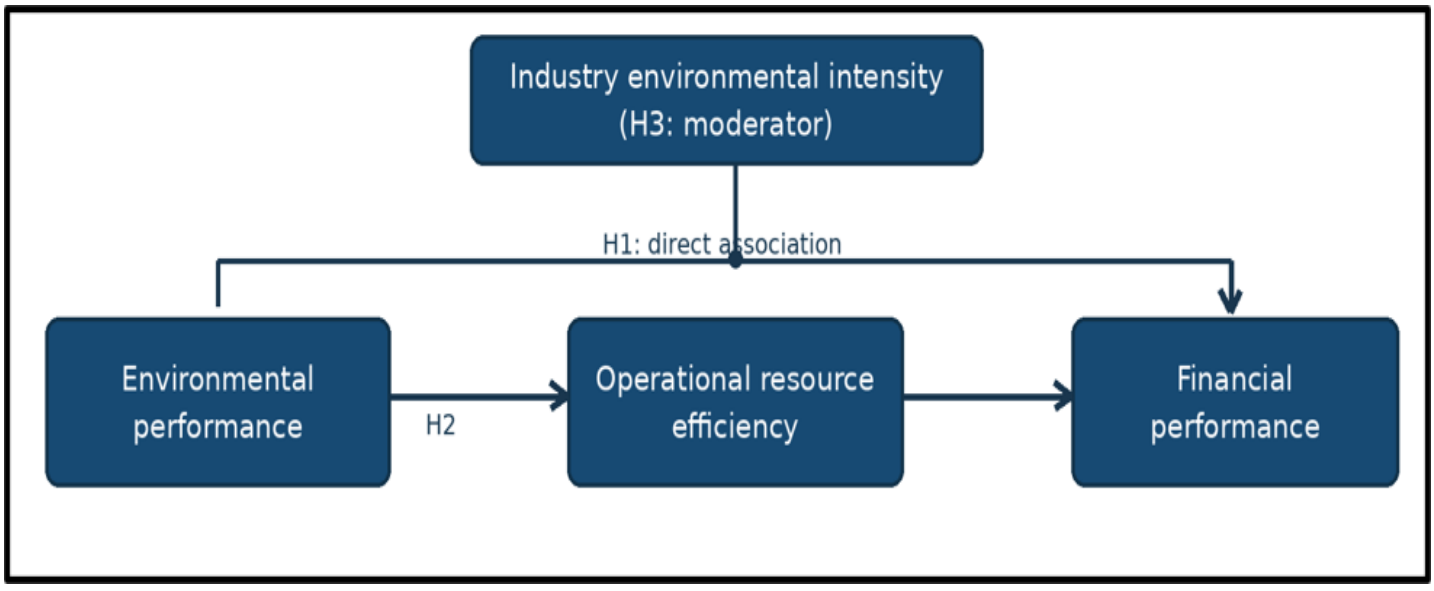
CONCEPTUAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

Building on RBV and NRBV, the framework first retains the original prediction that better environmental outcomes may be associated with stronger corporate financial performance. Reductions in emissions and waste may reflect pollution-prevention routines, process improvements, and managerial learning that also influence operating costs and asset productivity (Hart, 1995; Galama & Scholtens, 2021). However, an observed association should not be interpreted as proof that environmental improvement itself causes higher profits.

The framework further distinguishes a mediating mechanism and a boundary condition. Operational resource efficiency refers here to the productive use of energy, materials, and assets relative to useful operating output; it must be measured separately from environmental performance indicators such as emissions or waste intensity to avoid construct overlap. Where pollution-prevention improvements reduce input requirements or process losses, resource efficiency may help convert environmental gains into financial returns. Industry environmental intensity—such as a sector's relative dependence on energy- and emissions-intensive operations—is proposed to condition the financial relevance of environmental outcomes. Greater exposure can increase the value of avoided resource losses or environmental risks, although costly compliance investments may offset benefits. Thus, the moderation is theoretically plausible, but its direction and magnitude should be tested rather than presumed universal.

Figure 1 presents the conceptual framework. It preserves the direct relationship while specifying the possible indirect pathway through operational resource efficiency and the conditional role of industry environmental intensity. The hypotheses are conceptual propositions requiring subsequent empirical testing.

Figure 1. Proposed conceptual framework integrating a mediation mechanism and an industry boundary condition



H1: Environmental performance is positively associated with corporate financial performance.

H2: Operational resource efficiency mediates the positive association between environmental performance and corporate financial performance.

H3: Industry environmental intensity moderates the association between environmental performance and corporate financial performance.

Contributions Of The Study

This framework makes three specific conceptual contributions. First, it separates measurable environmental outcomes from the adoption of policies, certifications, and disclosure practices, thereby reducing ambiguity in the independent variable. Second, it extends the RBV–NRBV explanation beyond a direct association: firm-specific pollution-prevention capabilities may jointly produce environmental outcomes and operational resource efficiency, providing a plausible, though not yet verified, mechanism linking environmental and financial performance. Third, it specifies industry environmental intensity as a possible boundary condition and acknowledges that accounting measures such as ROA and ROS capture different financial consequences. These propositions offer a more explicit explanation for why prior results vary by measurement, context and timing, rather than claiming the association itself is new.

For corporate managers, the framework recommends evaluating environmental responsibility based on tangible operating outcomes and economic consequences. Managers should assess improvements in resource consumption, pollution generation, and environmental risk, and determine whether these changes correspond with increased efficiency or cost savings. Firms should not assume that certification or disclosure alone will enhance profitability. Instead, managerial focus should be directed toward understanding how environmental achievements result from improvements in operating routines and resource utilization.

For regulatory authorities and other stakeholders, the conceptual argument indicates the importance of credible environmental information. Consistent emissions and resource-use indicators allow performance to be assessed beyond broad claims of environmental commitment. Nevertheless, the pursuit of corporate financial benefits should not be regarded as the only justification for environmental protection, which may also yield wider social and ecological benefits that do not appear in firm accounting returns. s.

Recommendations For Future Empirical Research

Future research should test H1–H3 using firm-level longitudinal data and, where available, independently verified environmental outcomes, such as greenhouse gas emissions intensity, absolute emissions, and solid waste intensity. Measures should be oriented consistently so that higher environmental performance scores reflect better outcomes. Operational resource efficiency could be operationalized using physical input productivity or process-yield indicators distinct from the environmental-performance measure; researchers must avoid defining the mediator with the same emissions or input-intensity ratio used for the predictor. Industry environmental intensity should be defined independently using sector classifications or external sector-level energy/emissions characteristics. ROA and ROS should be examined separately, with controls for firm size, leverage, capital intensity, growth, year, and industry effects. Lagged specifications may address delayed returns, while mediation and interaction tests can evaluate the proposed mechanisms. Reverse causality, self-selection, and unobserved firm characteristics still require careful identification strategies; longitudinal regression alone would not establish causality.

Researchers should avoid treating the presence of ISO 14001 certification, the number of sustainability disclosures, or environmental awards as direct substitutes for measured emissions and resource-use performance. Those indicators may be informative about environmental management or external recognition, but they do not necessarily capture real environmental impact. Similarly, improvements in emissions intensity should be considered alongside absolute emissions to ensure that production growth does not mask increases in total environmental burdens.

CONCLUSION

The environmental–financial performance relationship has been examined extensively, but differences in measures, contexts, and methods still prevent a universal conclusion. This paper, therefore, does not present the positive association as a novel discovery. Instead, drawing on RBV and NRBV, it specifies how environmental outcomes might reflect productive firm-specific capabilities and under what conditions those outcomes may be financially valuable.

The revised framework retains the expected direct association, proposes operational resource efficiency as a mediating pathway, and introduces industry environmental intensity as a possible moderator. It further distinguishes substantive environmental outcomes from practices and recognizes that environmental investments, delayed returns, and different financial measures can produce divergent results. These are theoretical propositions rather than empirically established effects. Future research can evaluate the hypotheses using appropriately separated constructs, longitudinal evidence, and credible strategies to address endogeneity.

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