

A STUDY ON THE FACTORS INFLUENCING CORPORATE PERFORMANCE FROM AN ENVIRONMENTAL PERSPECTIVE

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Abstract: In recent years, global warming, environmental pollution, resource depletion, and other issues have drawn global attention. People are increasingly aware of the importance of environmental protection, prompting businesses to consider the impact of human development on ecological environments and natural resources while ensuring economic growth. Based on the theory of sustainable development, this study aims to address the following research objectives: (1) To explore whether corporate performance is influenced by environmental accounting management tools, and (2) to explore whether corporate performance is influenced by green supply chain management.

To explore factors influencing corporate performance, this study designed a questionnaire, focusing on environmental management accounting tools and green supply chain management. The data for this study were collected from companies across various industries nationwide. Sample selection did not limit the industry or geographic region of the companies. The survey questionnaire was designed and generated using the "Questionnaire Star" platform, and the questionnaires were distributed by WeChat. This study collected 245 valid questionnaires and the effective response rate of the survey was 94.8%. Data were analyzed using SPSS to explore the specific impacts of these factors on corporate performance. Finally, it was concluded that (1) accounting management tools are significantly and positively correlated with corporate performance; and (2) green supply chain management is significantly and positively correlated with corporate performance. This facilitates guiding businesses to establish management systems based on green supply chain management, emphasizing the role of environmental accounting management tools in governance. It enhances corporate management capabilities and operational efficiency, offering a new approach for achieving carbon reduction and improving corporate performance.

Keywords: Environmental Management Accounting Tools, Green Supply Chain Management, Corporate Performance, Influencing Factors

Introduction

After experiencing the four industrial revolutions of mechanization, electrification, automation,

and intelligence, the world has entered the "Industry 4.0" era. Continuous advancements in science and technology have significantly boosted productivity, leading to rapid global economic development (Yan, 2019). However, this substantial material wealth has been built on the extensive consumption of resources, the environment, and society. In recent years, global climate change, air pollution, the greenhouse effect, and various extreme natural disasters have frequently occurred. This has prompted scholars at home and abroad to shift the focus of economic development towards sustainability, striving to find a low-carbon, environmentally friendly, and sustainable economic development model.

China has achieved remarkable accomplishments during its period of rapid economic development. In this process, numerous enterprises pursued rapid economic growth by choosing a path of high energy consumption, high emissions, and high pollution. This one-sided economic pursuit has caused severe and irreversible damage to the natural environment (Sun, 2022). Consequently, China has begun actively promoting a transition in its development approach, shifting from rapid economic growth to high-quality development. The country has proposed the concept of "building an ecological civilization," aiming to establish a green, low-carbon, and circular economic system. It has repeatedly emphasized the need to promote comprehensive green transformation in economic and social development. Following the principles of sustainable development and developing a low-carbon economy are crucial pathways to enhance both environmental and economic benefits. Therefore, enterprises, as creators and participants in the socio-economic fabric, should not only focus on economic growth but also prioritize environmental concerns. However, how enterprises can enhance corporate performance while fulfilling environmental responsibilities is a question worthy of attention and exploration.

Research Objectives

Environmental management accounting tools, as an intrinsic management tool, can provide accurate and comprehensive information to improve output, reduce consumption, lower costs, promote corporate performance, and foster sustainable development (Deng & Wen, 2016). Xu (2022) introduced the concept of green supply chain management, suggesting that integrating low-carbon environmental principles into processes such as raw material procurement, product design, manufacturing, transportation, sales, and recycling can not only reduce the negative environmental impact of enterprises but also optimize overall benefits, thereby enhancing corporate performance.

1) To explore whether corporate performance is influenced by environmental accounting management tools.

2) To explore whether corporate performance is influenced by green supply chain management

Literature Review

Theory of Sustainable Development

The World Commission on Environment and Development defines sustainable development as meeting the contemporary economic needs of society while considering the Earth's environment and resources, thereby safeguarding the long-term interests of future generations. This theory encompasses three dimensions: economic sustainability, ecological sustainability (Alkahtani et al., 2021), and social sustainability. Economic sustainability involves developing new technologies, promoting economic growth, reducing resource waste, enhancing corporate profitability, and achieving comprehensive social progress under the premise of environmental protection. Ecological sustainability emphasizes pursuing economic growth within the limits of environmental sustainability to protect natural resources. Social sustainability underscores the importance of human quality, aiming for harmonious development of individuals and society.

Corporate Performance

The concept of corporate performance is broad and multifaceted. Some scholars define it from a management perspective as the ability of a company or individual to complete tasks and achieve goals. From an economic standpoint, corporate performance in business operations is defined as the capability to realize the potential value of resources (Huang et al., 2021). According to Li (2021), corporate performance refers to the operational achievements obtained within a specific organizational environment, accurately reflecting the operational efficiency and final outcomes of the entire company.

Enterprises can allocate resources more reasonably and improve resource utilization rates by using environmental management accounting tools, thereby enhancing corporate performance. Simultaneously, governments can utilize the information provided by environmental management accounting tools to strengthen assessments of enterprises, promoting sustainable development throughout society. The ultimate goal of green supply chain management is to achieve sustainable development for both enterprises and society as a whole, emphasizing the need to enhance environmental focus while improving corporate performance (Yang et al., 2021).

Environmental Accounting Management Tools

Environmental management accounting is the "greening" of management accounting. The International Federation of Accountants (IFAC) considers environmental management accounting as a new system that enables effective management of both environmental and economic performance within enterprises. According to Bennett (2000), environmental management accounting is a system that facilitates enterprises in achieving sustainable development by utilizing analysis of both financial and non-financial information, strengthening internal management, and ultimately enhancing corporate profitability.

Environmental management accounting tools demonstrate specific purposes and effectiveness at various stages of management accounting development, continuously meeting the personalized

needs of enterprise management. They serve as direct vehicles for enhancing economic benefits and creating value within organizations (Han & Han, 2020). Environmental management accounting tools integrate environmental performance and economic performance, helping enterprises effectively manage resource utilization and environmental costs. They also enhance corporate competitiveness and sustainability, thereby significantly improving overall performance levels.

Xiao (2005) categorized environmental management accounting tools into two main types: The first type included methods based on environmental cost management, such as total cost assessment, life cycle analysis of products, and activity-based costing. The second type comprised methods based on resource management, including resource efficiency accounting, input-output analysis, and material flow cost accounting. Tsai et al (2014) concluded through research that activity-based costing and life cycle assessment can better control environmental costs for enterprises.

Green Supply Chain Management

Green supply chain management involves integrating environmental factors into every aspect of traditional supply chain management (Zhu & Zhao, 2005). Tseng et al. (2019) describe the concept of green supply chain management as integrating environmental management into traditional supply chains. This includes collaboration with upstream suppliers, logistics providers, and downstream clients to share information and knowledge, thereby enhancing environmental performance. Green supply chain management is a management model in which enterprises use internal and external communication to reduce adverse environmental impacts, promoting the synergistic development of both environmental and economic performance (Tian & Zhu, 2016).

Pik-Yin et al. (2018) believed that seven elements—internal environmental management, green cooperation with customers, eco-design, investment recovery, supplier selection, supplier evaluation, and supplier environmental collaboration—affect green supply chain management to varying degrees. Green procurement, green design, green manufacturing, green marketing, and green logistics are key elements driving the greening of the entire supply chain (Han, 2015). By selecting environmentally-friendly products and suppliers during the procurement phase, optimizing product life cycle in the design phase to reduce environmental impact, adopting clean production technologies in manufacturing, emphasizing environmental benefits in marketing, and using low-carbon and efficient transportation methods in logistics, businesses can not only reduce resource consumption and environmental pollution but also enhance their market competitiveness and sustainability (Cousins et al., 2019). These practices significantly elevate both environmental and economic performance within organizations.

Methodology

To investigate factors influencing corporate performance, this study designed a questionnaire consisting of two main parts. The first part collected basic information about the respondents and their

respective companies. The second part focused on two primary factors: environmental management accounting tools and green supply chain management. The environmental management accounting tools scale included dimensions of environmental cost management and resource management, comprising 8 questions. The green supply chain management scale encompassed Green procurement, green design, green manufacturing, green marketing, and green logistics, totaling 16 questions. Data analysis was conducted using SPSS to examine the specific impacts of these factors on corporate performance from an environmental perspective, offering scientific insights and strategic guidance for business decision-making.

The questionnaire passed reliability testing with Cronbach's alpha coefficients of 0.824 for the environmental management accounting tools scale and 0.826 for the green supply chain management scale, both exceeding 0.7. It also passed validity testing with a Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy of 0.801 and a statistically significant Bartlett's test of sphericity ($p < 0.001$). Therefore, the questionnaire was deemed suitable for distribution.

The data for this study were collected from companies across various industries nationwide. Sample selection did not limit the industry or geographic region of the companies. The survey questionnaire was designed and generated using the "Questionnaire Star" platform, and the questionnaires were distributed by WeChat. The survey targeted primarily at business managers who had a general understanding of the environmental management accounting tools, green supply chain management, and corporate performance addressed in this study. In the end, this study collected 260 survey questionnaires, out of which 245 were deemed valid after screening.

Therefore, the effective response rate of the survey was 94.8%. Data were analyzed using SPSS to explore the specific impacts of these factors on corporate performance from an environmental perspective, providing scientific insights and strategic guidance for business decision-making.

Results

1) Descriptive Statistical

Among the participants, middle managers constitute the highest percentage, accounting for 36.3% of the total. Additionally, 72% of participants have been with their respective companies for over eight years, indicating that these companies may have effective employee retention mechanisms. More than half of the employees hold a bachelor's degree, suggesting that these companies place a significant emphasis on the educational background of their staff. Employees with a master's degree or higher account for 27.3%, demonstrating a high demand for highly educated professionals within these organizations.

Table 1: Descriptive Analysis

Items	Category	Number of People	Percentage (%)
Job Positions	Staff	35	14.3
	Frontline Manager	64	26.1
	Middle Manager	89	36.3
	Senior Manager	57	23.3
The term of office	Less than 3 years	47	19.2
	3-5 years	59	24.1
	5-8 years	67	27.3
	More than 8 years	72	29.4
Educational Background	Below Junior Collage	49	20.0
	Bachelor's Degree	129	52.7
	Master's Degree and above	67	27.3

2) Correlation Analysis

The correlation analysis results between environmental accounting management tools and corporate performance (Table 2) indicate that the correlation coefficient between environmental cost management and corporate performance is 0.745, which is significant at the 0.01 level. Similarly, the correlation coefficient between resource management and corporate performance is 0.772, also significant at the 0.01 level. Therefore, accounting management tools are significantly and positively correlated with corporate performance, with a strong correlation observed.

Table 2: Correlation Analysis Results of Environmental Management Accounting Tools and Corporate Performance

Dimension	Environmental Cost Management	Resource Management	Corporate Performance
Environmental Cost Management	1		
Resource Management	.679**	1	
Corporate Performance	.745**	.772**	1

3) Regression Analysis

The regression analysis indicates that environmental management accounting Tools have a significant and positive impact on corporate performance (see Table 3). The R² value of 0.549 suggests that environmental management accounting tools can explain approximately 54.9% of the variance in corporate performance, highlighting their importance in enhancing organizational outcomes. The F-value further confirms the significance of these results, indicating the overall effectiveness of the model. Additionally, the regression coefficient B is 0.723 with a P-value less than 0.05, demonstrating that environmental management accounting tools significantly and positively influence corporate performance.

Table 3: Regression Analysis of Environmental Management Accounting Tools and Corporate Performance

	Non-Standardized Coefficient		Standardized coefficient	t	p	R ²	Adjusting R ²	F
	B	Standard Error	Beta					
(Constant)	.659	.071	-	5.921	.000	.549	.553	247.327
Environmental Management Accounting Tools	.723	.068	.758	13.775	.000			

The correlation analysis results between green supply chain management and corporate performance (Table 4) indicate that the correlation coefficients between the various dimensions of green supply chain management and corporate performance are respectively 0.704, 0.731, 0.721, 0.717, 0.754, which is significant at the 0.01 level. Therefore, green supply chain management is significantly and positively correlated with corporate performance, with a strong correlation observed.

Table 4: Correlation Analysis Results of Green Supply Chain Management and Corporate Performance

Dimension	Green Procurement	Green Design	Green Manufacturing	Green Marketing	Green Logistics	Corporate Performance
Green Procurement	1					
Green Design	.645**	1				
Green Manufacturing	.772**	.781**	1			
Green Marketing	.749**	.714*	.772*	1		
Green Logistics	.698**	.724*	.761*	.769*	1	
Corporate Performance	.704**	.731*	.721*	.717*	.754*	1

The regression analysis indicates that green supply chain management has a significant and positive impact on corporate performance (see Table 5). The R² value of 0.512 suggests that green supply chain management can explain approximately 51.2% of the variance in corporate performance, highlighting their importance in enhancing organizational outcomes. The F-value further confirms the significance of these results, indicating the overall effectiveness of the model. Additionally, the regression coefficient B is 0.748 with a P-value less than 0.05, demonstrating that green supply chain management significantly and positively influence corporate performance.

Table 5: Regression Analysis Results of Green Supply Chain Management and Corporate Performance

	Non-Standardized Coefficient		Standardized coefficient	t	p	R ²	Adjusting R ²	F
	B	Standard Error	Beta					
(Constant)	.692	.087	-	4.732	.000	.512	.481	192.343
Green Supply Chain Management	.748	.071	.761	12.988	.000			

Discussion

1) Accounting management tools are significantly and positively correlated with corporate performance

This implies that the resources and efforts invested by enterprises in effectively managing environmental costs are closely positively correlated with their overall performance. Similarly, resource management plays a crucial role in corporate operations; effective resource management not only optimizes internal resource allocation but also significantly enhances overall corporate performance. Therefore, environmental accounting tools play an important role in driving corporate performance improvement. Enterprises should prioritize and actively implement suitable environmental accounting tools to achieve dual goals of sustainable development and enhanced corporate performance.

2) Green supply chain management is significantly and positively correlated with corporate performance

This indicates that the investment by enterprises in implementing environmental measures and promoting supply chain sustainability directly impacts their overall business performance and market outcomes. By effectively managing the environmental impacts within their supply chains, companies can not only reduce operating costs and resource waste but also enhance production efficiency and product quality. Therefore, actively adopting green supply chain management is a strategy to improve corporate performance, and a crucial step towards achieving long-term sustainable development goals.

Conclusions

1) Governments: Guiding enterprises to adopt environmental management accounting tools and strengthen green supply chain management

It involves various aspects such as technology, economics, and society. Therefore, it requires collective participation from the entire society, with policies and scientific advancements playing crucial roles in their application and dissemination. Government departments should intensify promotional efforts from the perspective of sustainable development to advocate for the adoption of environmental management accounting tools and green supply chain management. They should guide enterprises in the correct utilization of these tools and emphasize green consumption, encouraging citizens to prioritize purchasing goods that meet environmental standards. This approach will incentive enterprises to enhance their green supply chain management practices. Governments should enhance the environmental regulatory framework and strengthen enforcement efforts. Establishing environmental laws tailored to China's national conditions, setting standards, and increasing penalties for non-compliance are essential. Only under stringent enforcement conditions can enterprises proactively enhance their green management practices, thereby addressing environmental issues at their roots. Governments should establish a robust environmental economic system that combines regulation

with incentives. Measures such as tax incentives and fiscal subsidies should focus on supporting green environmental industries. This approach will encourage enterprises to adopt environmental management accounting tools, strengthen green supply chain management, increase research and development investments, elevate industrial standards, and enhance corporate performance.

2) Companies: rationally utilizing environmental management accounting tools and prioritizing green supply chain management

In the context of intense market competition and active advocacy for green development, businesses should recognize that adopting a path of environmental protection and sustainable development is an inevitable trend. Companies should proactively adapt to this change and acknowledge that neglecting environmental issues could adversely affect their operations. Companies should strengthen the use of environmental management accounting tools based on their specific circumstances, promote innovative practices within the organization, and elevate their environmental management capabilities. Emphasizing innovation in green design, companies should drive self-transformation by integrating green concepts throughout the entire product manufacturing process. Strengthening cooperation with upstream and downstream partners in the supply chain is crucial for promoting collaborative development. Companies should respond to environmental policies by actively enhancing their environmental performance. It is essential for companies to seize opportunities presented by government incentives and proactively comply with policy requirements to enhance their own green development and maximize economic benefits.

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