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The impact of supply chain management on firm performance: The case of Vietnam

Nguyen Dinh Hoan[a*], Nguyen Thi Thao Anh[b] and Nguyen Thi Lan Anh[a]

[a]*Academy of Finance, 58 Le Van Hien, Duc Thang Ward, Bac Tu Liem District, Hanoi, Vietnam*
[b]*Banking Academy, 12 Chua Boc, Dong Da District, Hanoi, Vietnam*

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The objective of the research is to determine the impact of supply chain management and enterprise factors on enterprise performance. Research results showed that improving supply chain efficiency can improve business performance, so the governments should improve supply chain efficiency, especially perfecting the green supply chain to increase the operational efficiency of businesses and the economy. The study also suggests that businesses should seek equity financing to further improve business performance, and at the same time need to improve debt management capabilities to help businesses be more capable and achieve high financial efficiency.

1. Introduction

Businesses are considered as an important entity in every economy, so countries always have appropriate policy solutions to stimulate business development and increase their contribution to the economy. international. When given favorable conditions to develop, businesses have the ability to achieve higher financial performance, and therefore businesses have more resources to invest in future business development and increase their contributions to the economy. Therefore, the goal of improving business performance of enterprises becomes urgent (Tran et al., 2022). Business development cannot ignore the role of the supply chain. Businesses need input materials, so they need to have a good connection with the supply chain system to reduce production costs and increase business efficiency. Indeed, a strong supply chain reduces a business's capital costs, and therefore the business has more resources to develop its business and achieve financial performance. Furthermore, when a business is able to have an effective supply chain, it can help make the process of consuming products at the business more convenient, so the products at the business have the ability to reach a large market, giving businesses the opportunity to seek profits and develop (Nguyen & Mai, 2021). The above reasons confirmed the importance of the supply chain to the financial performance of businesses. Therefore, businesses always pay attention to the supply chain related to the business's goods trade activities run smoothly. Furthermore, an enterprise's supply chain is often influenced by the national strategy for logistics and supply chain development through national mechanisms and policies. Therefore, developed countries often have open policy mechanisms that help businesses participate in various supply chain activities, and this helps reduce businesses' connection costs and increase production and business efficiency. Vietnam is known as a country with rapid economic development in recent years. From a country with a closed economy and no foreign trade activities, Vietnam implemented the reform process in 1986 and has achieved a number of achievements in socio-economic development. The number of businesses in Vietnam is increasing rapidly and is aiming for 2 million businesses by 2025, and this affirms the role of businesses in the Vietnamese economy. Businesses have the ability to create new jobs and contribute to the national budget and economic output. Therefore, businesses always aim to achieve financial efficiency to create more resources for businesses to develop and increase their contribution to the economy.

* Corresponding author
E-mail address hoannd@hvtc.edu.vn (N.D. Hoan)

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Therefore, the research aims at evaluating the impact of the supply chain on the financial performance of businesses becomes urgent. Through the research results, it is possible to evaluate the role of the supply chain and especially its impact on corporate financial performance. From there, the study proposes a basis for increasing business efficiency in the future.

2. Literature Review

The study by Wang et al. (2023) argued that effective supply chain management can bring many benefits to businesses, it requires managing the flow of raw materials, information and capital in the supply chain to ensure economic sustainability, environment and society. Therefore, finding sustainable sourcing to apply corporate social responsibility to supply chain management and having a plan to make sustainable sourcing in the supply chain is the year to capture the impact of the supply chain. affect the company's performance. Conducting research on 42,461 observations from 128 independent samples in 158 empirical studies, the research suggested that supply chain management can improve operational, economic, environmental and social performance and enable the company improves its ability to innovate, and this enables the business to further improve its operating efficiency to increase its contribution to the economy. Another possibility, Asante-Darko and Osei (2024) confirmed that businesses have recently begun to pay attention to the competitive advantage of the supply chain, especially the factor of building a sustainable supply chain to create sustainable supply chains. company's financial capacity and efficiency. Research conducted in Ghana, the study suggests that there is a relationship between supply chain efficiency and corporate financial performance. That means improving supply chain efficiency has the ability to reduce a business's costs, thereby allowing the business to have more financial resources to develop the business. The study affirms the importance of government policies to improve supply chain efficiency, connectivity and promote sustainable supply chains to create advantages for businesses in particular and the economy in general. Fu et al. (2022) asserted that economic, social, technological and political changes have changed many economic relationships, and affected customers and changed operating processes in organizations. Supply chain management is increasingly gaining attention worldwide and plays an important role in industries and industry activities in the management of capital, information and material flows and the participation of companies in supply chain, linking for sustainable development. The goal is to improve supply chain outcomes and work together to overcome today's global business challenges. Fu et al. (2022) also argued that technological advancement and competition also require organizations to use strategies to streamline their business operations. At the same time, effectively implementing a supply chain will significantly improve corporate financial and operational efficiency. This highlights the important role of the supply chain in promoting corporate financial and operational efficiency.

In addition to the supply chain management factor and its impact on corporate finances, specifically the financial performance of the business. There are a number of other factors that affect business operations, especially energy factors. Indeed, with traditional energy supplies gradually running out and pressure from climate change increasing, the need to switch to renewable energy has become a top priority in many business sectors. . The impact of renewable energy use on business performance has attracted the attention of both the research and business communities. Besides, fossil energy has been playing an important role in providing energy sources for businesses. However, the use of fossil energy not only causes negative effects on the environment but can also affect the business performance of businesses. One of the key issues facing businesses is the cost of fossil energy use and its impact on profits and competition. Li et al. (2019) investigated the impact of implementing renewable energy systems on the financial performance of manufacturing enterprises. The results of this study showed that businesses that adopt renewable energy typically have lower operating costs and higher financial performance than their competitors that do not use renewable energy.

Das and Mahalik (2023) measured renewable energy use and assessed its impact on the performance of manufacturing companies in India over the period 2011–2021. The authors believed that the impact of using renewable energy on the efficiency of businesses, including exports, may vary between industries. This suggests heterogeneity in energy policy formulation for different industries. Furthermore, Lin & Wang (2023) affirmed that using renewable energy sources can increase energy efficiency and reduce CO_2 emissions in enterprise production activities. Lin & Wang (2023) used business data of China's listed renewable energy companies from 2003 to 2021, empirical results showed that renewable energy business expansion contributes to bringing outstanding performance of businesses. Second, Chinese enterprises have achieved relatively higher efficiency improvement in expanding renewable energy business, mainly due to the directional transformation advantage of Chinese manufacturing enterprises. Finally, China's policy environment is favorable for professional enterprises to achieve superior performance when expanding their renewable energy business. Another study, Sovacool and Dworkin (2015) suggested that government incentives and support for renewable energy deployment in businesses, and concludes that this support policy can contribute important role in promoting the transition to clean energy. There are also many other studies that confirmed that appropriate energy use has the ability to improve business performance. Hulshof & Mulder (2020) also argued that there is no relationship between the use of renewable energy and the profits of businesses on the basis of panel data of 920 businesses in the period 2014–2018. Additionally, the results seem to show that companies are not willing to actively pay for renewable energy as a contribution to the environment. This implies that companies are only willing to contribute to climate change mitigation through the purchase of renewable energy when this is consistent with the goal of profit maximization. Shuai et al. (2022) systematically evaluated the international competitiveness of renewable energy products from the United States, China and India through the construction of a new multidimensional evaluation index. to estimate the international competitive advantage of renewable energy products exported from these countries. The results demonstrated that the overall international competitiveness of US renewable energy products is very strong, while China and India have rapid growth; and there are clear differences in the component factors that lead to international competitiveness between the three countries. Meanwhile, energy efficiency in the competitive portfolio of an industrial company, Wang et al. (2023) confirmed that the application of these measures in companies is still low. This is related to the issue of business performance, not only the use of energy sources but also how businesses use energy economically. Besides the above factors, the capital structure of a business is one of the most important factors affecting business performance and sustainability of the business. Capital structure not only affects solvency and interest rate requirements but also affects the balance between risks and benefits. Research by Myers and Majluf (1984) analyzed the impact of capital structure on the investment and development ability of businesses. The results of this study emphasize the important role of a stable and appropriate capital structure in creating favorable conditions for businesses to implement investment projects and business expansion. Zeitun and Tian (2007) studied the impact of capital structure on firm performance using a panel data sample of 167 Jordanian companies during the period 1989-2003. The authors' empirical results show that a firm's capital structure has a significant negative impact on its performance measures, in both accounting and market measures. . Graham and Harvey (2001) focused on the impact of capital structure on the ability of firms to overcome financial crises. The results of this study show that businesses with flexible and diversified capital structures can increase their ability to withstand unpredictable fluctuations in financial markets. Besides, the assets of a business play an important role in determining and shaping the performance of the business. Assets are not only an important source of capital but also affect the profitability, competitiveness and sustainability of businesses. Emeka and Kelvin (2023) examined the relevance of asset structure to firm performance with the situation of firms in Nigeria during the period from 2011 to 2020. The results of the study showed that: contrary to the Companies with low financial leverage, fixed asset ratio and customer asset ratio have a passive influence on the internal and external performance of companies with high financial leverage; Unlike low-leverage companies, the current assets ratio has a significant impact on the internal performance of high-leverage companies but tends to reduce external performance; the long-term asset ratio and intangible asset ratio have a passive influence on the internal and external performance of both low- and high-leverage enterprises. We also cannot help but mention the scale of a business, which is an important factor that shapes and affects its performance. From small and medium-sized enterprises to large corporations, scale plays a decisive role in management, competition and business development. Martini et al. (2023) examined the field of e-commerce as a strategy that can be used by micro and small industries (MSIs) to promote business performance in the current digital era. This study aims to examine the impact of e-commerce on MSI performance and the moderating role of firm size in this relationship. This study used secondary data from 1084 MSIs in Indonesia. The results showed that e-commerce significantly and positively affects MSI's financial performance. Firm size is found to reduce the impact of e-commerce on financial performance with a weakening effect. That means smaller MSIs achieve higher financial performance gains than larger MSIs by adopting e-commerce as a resource to improve customer base, brand recognition and advertising. In addition, the recent studies have also paid attention to the impact of external factors such as government policies and regulations on corporate asset management. Umar et al. (2023) addressed the moderating role of government support between trust and firm performance, studying the role of blockchain-enabled supply chain parameters on firm performance. company through trust. Governments address legal and security concerns related to blockchain technology and provide clear guidelines and standards for its use in supply chains, helping to build trust between companies and stakeholders. The research sample included 465 employees from textile industry companies listed on the Pakistan Stock Exchange. Empirical results do indicate that government support positively moderates the relationship between trust and firm performance.

In summary, through synthesizing related international research, we find that supply chain efficiency is a very important factor in promoting corporate financial efficiency, and at the same time, using renewable energy has can bring many economic and environmental benefits to businesses, in addition to a number of other factors such as fossil energy use, the impact of capital structure, assets in the business, business size, debt structure and some external factors such as government policies and regulations on corporate asset management. These issues with listed companies on the Vietnamese stock market are few, so this study was conducted in accordance with the research gap and has a good practical contribution.

3. Data and research methods

The research and collect data on businesses operating in the Vietnamese market. The data is collected and processed for errors, then used for data analysis. The sample size used for this study is about 190 enterprises, this sample size completely meets the minimum sample size requirement of 5 times the number of observed variables in the estimation model. Therefore, this sample size ensures the reliability of the study. This study uses mixture analysis. First, the study used qualitative analysis to analyze the reliability of the scale, then adjusted the scale accordingly. Next, the study performed quantitative analysis by performing reliability analysis through Cronbach's alpha, results of discovering EFA factors and regression analysis.

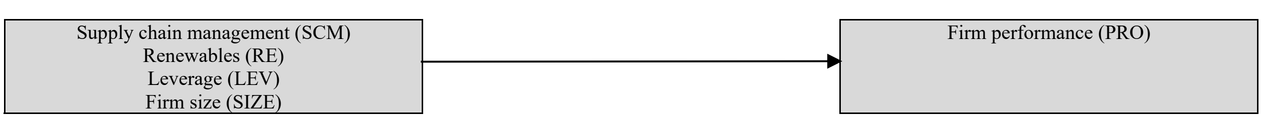

Fig. 1. Variables used in the model

Fig. 1 presents the variables used in the estimated model, interpreted as follows:

For the dependent variable (PRO), measures the financial efficiency of the business. A business with high financial performance has higher PRO and vice versa.

As for the independent variable, there are 4 variables: Supply chain management (SCM) is a variable that measures the efficiency of the supply chain. Businesses always want to have an effective supply chain to contribute to overall operations. business and improve profits. In addition, the variable Renewables (RE) reflects the ability to consume energy for production activities. Indeed, energy is a relatively important input factor in production activities, and when using energy sources effectively, it can improve corporate financial performance. Next, the Leverage variable (LEV) represents the ability to manage capital resources in an enterprise. Enterprises must balance between loan capital and equity capital to bring about the highest business efficiency. Finally, the variable Firm size (SIZE) reflects the size of the business. Large-scale enterprises often have huge advantages in the market and production, so large enterprises have higher economic efficiency than small enterprises.

3. Research results and discussion

3.1. Descriptive statistics

Descriptive statistics show that there are about 190 businesses selected in this survey sample, concentrated mainly in Hanoi and HCMC, and some other localities in Vietnam. Regarding the type of enterprise, there are only a few joint stock enterprises that have foreign capital with a controlling ratio of 5% or more, and the remaining are mostly enterprises with domestic capital. Regarding the level of supply chain management, most businesses are assessed to have average supply chain efficiency, accounting for 55.2% of businesses, showing that Vietnamese businesses need to further improve. on supply chain efficiency. Regarding energy sources, most businesses depend on renewable energy sources, accounting for 64.2%, with only about 25.3% of businesses starting to use fossil energy sources.

Table 1
Descriptive statistics

No.	**Quantity**	**Ratio %**
Kinds of firms		
Shared firms	170	89.5%
foreign invested firms (5%)	12	6.3%
Others	8	4.2%
Total	190	**100.00%**
Level of supply chain management	**Quantity**	**Ratio %**
Medium	105	55.3%
Good	80	42.1%
Others	5	2.6%
Total	190	**100.00%**
Energy source		
Fossil energy	122	64.2%
Renewable energy	48	25.3%
Mix energy	20	10.5%
Total	190	**100.00%**
Address	**Quantity**	**Ratio %**
Hanoi	115	60.5%
Ho Chi Minh City	65	34.2%
Other provinces/cities	10	5.3%
Total	190	**100.00%**

3.2. Cronbach's alpha, explanatory factor analysis and KMO test

Table 2 presents the results of KMO and Bartlett's test. As we can confirm they confirm the results of the survey.

Table 2
KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.81
Bartlett's Test of Sphericity	Approx. Chi-Square	3683.455
	Sig.	0

Source: Authors

Table 3 presents the summary of explanatory factor analysis and Cronbach Alpha. According to Cronbach's alpha analysis, these coefficients are all greater than 0.6 and therefore reflect scales with a high level of reliability, which is suitable for exploratory factor analysis. Based on KMO and Bartlett's tests, these tests show that these tests are satisfied, and EFA analysis shows that convergence phenomenon is likely to occur.

Table 3
Explanatory factor analysis and Cronbach Alpha

		Component				Cronbach's alpha
		1	2	3	4	
Supply chain management (SCM)	**SCM1**	0.886				
	SCM3	0.862				0.81
	SCM4	0.856				
	SCM2	0.84				
	SCM5					
Renewables (RE)	RE1		0.854			
	RE3		0.838			0.832
	RE4		0.834			
	RE2		0.801			
Firm size (SIZE)	SIZE1			0.844		
	SIZE2			0.823		
	SIZE4			0.811		0.782
	SIZE3			0.799		
	SIZE5			0.776		
Leverage (LEV)	LEV1				0.802	
	LEV3				0.793	0.798
	LEV2				0.767	
	LEV4				0.745	
Firm performance (PRO)	PRO1				0.780	
	PRO2				0.793	0.765
	PRO3				0.796	
	PRO4				0.802	

Finally, we have presented a regression analysis between the firm performance as dependent variable and the other four independent variables, supply chain management, renewables, firm size and leverage as dependent variables. The regression results are shown in the following Table 4:

Table 4
Regression estimation

Factor		Unstandardized coefficient		Standardized coefficient	t	Sig.	Multicollinearity	
		Beta	S.E	Beta				VIF
1	_cons	2.110	0.211		4.231	.000		
	SCM	0.211***	0.054	0.245	3.324	.000	0.986	1.0142
	RE	0.354	0.042	0.387	1.053	.785	0.925	1.0811
	SIZE	0.114	0.038	0.142	1.064	.921	0.953	1.0493
	LEV	-0.345*	0.055	-0.356	2.878	.000	0.951	1.0515

Note: *** is significant at the 1% level

Table 4 suggests that supply chain management (SCM) and capital structure selection (LEV) have an impact on corporate financial performance, because the regression coefficients of these variables are statistically significant. However, the regression coefficients of energy consumption (RE) and enterprise size (SIZE) are not statistically significant, so the impact of these variables on financial performance cannot be confirmed. Supply chain management (SCM) has a positive impact on corporate financial performance, which confirms that improving the supply chain has a positive impact on corporate performance. Indeed, the supply chain is related to the ability to help businesses access input raw materials and help businesses optimize production activities, thereby improving supply chain efficiency, contributing to promoting business activities. business movements. Therefore, many countries have promoted strong supply chain management transformation associated with green supply chains and sustainable development to thereby increase supply chain efficiency and business performance of enterprises. This result is supported by research by Asante-Darko and Osei (2024) stating that businesses have recently begun to pay attention to the competitive advantage of the supply chain, especially the construction factor. Sustainable supply chain to create capacity and financial efficiency of the company. Specifically, improving supply chain efficiency has the ability to reduce business costs, thereby allowing businesses to have more financial resources to develop their business. Therefore, government policies to improve supply chain efficiency, connectivity and promote sustainable supply chains create advantages for businesses in particular and the economy in general. Capital structure choice affects the financial performance of the enterprise. This means that businesses prioritize choosing equity capital to increase business performance. Indeed, businesses in Vietnam are mostly small in scale, so financial resources are often lacking. strong, so when businesses seek debt financing, they may be affected by loan interest rate fluctuations, reducing the business's financial efficiency. However, when businesses seek funding from equity sources, they can feel secure in investing in fixed assets and developing the business.

4. Conclusion

Business development cannot lack the role of the supply chain. Therefore, businesses always pay attention to the supply chain related to the business to help the business's goods trade activities run smoothly. Research the impact of the supply chain and enterprise factors on the business performance of the enterprise. Using regression methods and the advanced quantitative analysis, the research results suggested that supply chain management has the ability to promote corporate financial performance, so governments should improve operational efficiency, and supply chain activities, especially perfecting the green supply chain to increase the operational efficiency of businesses and the economy. The study also suggested that businesses should seek equity financing to further improve business performance, and at the same time need to improve debt management capabilities to help businesses be more capable. achieve high financial efficiency.

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