FACTORS INFLUENCING THE BUSINESS EFFICIENCY OF CONSTRUCTION ENTERPRISES OPERATING IN MEKONG DELTA REGION

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Abstract: This study aims to analyze factors influencing construction enterprises' business efficiency in the Mekong Delta region. The research data comprises 100 enterprises operating in provinces such as Bac Lieu, Ca Mau, and Can Tho City. The multiple regression method is used to test the correlation between factors. Estimated results show that factors influencing the business efficiency of construction enterprises in the Mekong Delta region include the educational level of business owners, management experience, and type of enterprise. Among these, the management experience of business owners is the strongest factor impacting the business efficiency of construction enterprises in the Mekong Delta region.

Keywords: Business, construction, efficiency, enterprises, Mekong Delta region.

I. Introduction

In recent years, the construction industry in the Mekong Delta has emerged as one of the most rapidly developing sectors, significantly contributing to the economic growth of both the region and the country. However, conducting business in this field also faces numerous challenges and factors affecting business performance.

Mekong Delta possesses unique geographical, cultural, and economic characteristics, creating a distinctive business environment for construction enterprises. Studying factors influencing business performance in the construction industry in this region not only helps businesses understand opportunities and challenges but also contributes to the industry's sustainable development. This sector plays a crucial role in building infrastructure and facilitating the province's economic, cultural, and social development, thus contributing to the national industrialization and modernization efforts.

With the general trend of economic development and deeper integration into the global economy, local governments

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must demonstrate their role through reasonable policies to motivate and enhance the business performance of construction enterprises in the Mekong Delta. This research will focus on analyzing factors affecting the business performance of enterprises in the construction industry in the Mekong Delta. Understanding these factors will help businesses in the industry develop effective and sustainable strategies for the future.

II. Theoretical Basis and Literature Review

2.1. Theoretical Basis

According to the general concept defined by the Law on Enterprises 2020, an enterprise is an economic organization with legal status, primarily engaged in production and business activities, exchanging products and goods in the market to maximize the benefits among parties to achieve its objectives. Therefore, a construction enterprise is also an economic organization with legal status, dealing in unique products (high-value products with long production times) in the construction market to maximize profits. Construction enterprises are established based on the legal framework of each country, depending on the specific stage of socio-economic development. In a market economy, the diversity and richness of construction enterprise types are necessary to promote economic growth.

Business performance efficiency is an economic category reflecting the level of resource utilization (labor, machinery, equipment, capital, and other factors) of a unit to achieve set objectives. Simply put, business efficiency is the maximum output result per unit of input cost. Business efficiency can only be achieved based on labor productivity and quality management. To achieve increasingly higher and more stable business efficiency, business managers must not only have a firm grasp of potential resources such as labor, materials, and capital but also a deep understanding of market supply and demand, competitors, and more. Understanding the strengths and weaknesses of the enterprise to fully exploit existing capabilities, take advantage of market opportunities, and apply effective business strategies will help the enterprise grow more robust and develop further.

The primary indicators for evaluating the business performance of an enterprise include Return on Equity (ROE), Return on Sales (ROS), and Return on Assets (ROA).

2.2. Literature Review

In recent years, numerous studies have analyzed the business performance efficiency of enterprises, including those in the construction sector. These studies consistently show that various factors influence business performance efficiency. Hansen et al. (2002) indicated that the age of an enterprise affects its survival and development. Additionally, research groups such as Hansen et al. (2002) and Kokko and Sjoholm (2004) demonstrated that the scale of operations is one of the factors impacting performance efficiency.

Furthermore, Hansen et al. (2002) and Khoi et al. (2008) highlighted that government support policies and the educational level of business owners influence the production and business efficiency of small and medium-sized enterprises (SMEs). Nam and Nghi (2011) identified several factors affecting business performance efficiency, such as government support policies, social relationships, the educational level of business owners, and revenue growth rate.

Additionally, Tan et al. (2015) found that the business performance efficiency of

SMEs in Bac Lieu province is correlated with factors such as access to support policies, the experience of the business owner, gender, educational level, scale, social relationships, age of the enterprise, and type of enterprise. Moreover, Tan et al. (2020) showed that the factors influencing the business performance efficiency of construction enterprises in Bac Lieu province include the educational level of the business owner, management experience, and type of enterprise.

III. Research Methodology

3.1. Research Model

The business performance of enterprises, particularly construction enterprises, is influenced by various internal and external factors. Specifically, the following factors were considered when constructing a research model related to the business performance of construction enterprises in the Mekong Delta region.

Internal factors within the enterprises include characteristics such as type, scale, revenue growth rate, and operational duration; attributes of the business owner such as gender, education level, management experience, and social relationships.

External factors affecting business performance include various macroeconomic factors. However, this study focused solely on small and micro-construction enterprises to simplify the measurement of variables in the research model. The author included the variable "Government Support Policies" in the research model as a proxy for external

factors influencing the business performance of construction enterprises in the Mekong Delta region. Studies by Hansen et al. (2002), Khoi and colleagues (2008), Nam and Nghi (2011), and Tan and colleagues (2015) have shown that Government Support Policies impact the production and business performance of enterprises in certain provinces within the Mekong Delta.

Based on theoretical foundations concerning business performance and related empirical research models, the research model examining factors influencing the business performance of construction enterprises in the Mekong Delta is formulated as a regression equation as follows:

$$Y = a_0 + a_1X_1 + a_2X_2 + a_3X_3 + a_4X_4 + a_5X_5 + a_6X_6 + a_7X_7 + a_8X_8 + a_9X_9 + \varepsilon_i \qquad (1)$$

In which:

The dependent variable (Y), business performance efficiency, has been measured in various empirical studies using financial indicators such as ROA, ROE, and ROS. However, due to limitations in survey accessibility to businesses and based on previous research approaches, this study measures the business performance efficiency of construction enterprises using the financial indicators ROA and ROS as the dependent variable (Y). These economic indicators are averaged over three years (2021 - 2023).

The independent variables are described in Table 1 below:

Table 1: Explanation of measurement variables in the model

No	Variable	Symbols	Explanations of measurement variables	Basis for variable selection
1	Business efficiency	Y	ROA and ROS	Nam and Nghi (2011) Tan et al. (2015)
2	Gender	X1	Dummy variable: 0 represents female; 1 represents male.	Tan et al. (2015)

No	Variable	Symbols	Explanations of measurement variables	Basis for variable selection
3	Educational level	X2	Continuous variable: number of years of education of the business owner	Hansen et al. (2002), Khoi et al. (2008); Nam and Nghi (2011); Tan et al. (2015).
4	Experience	X3	Continuous variable: number of years in a managerial position.	Tan et al. (2015); Tan et al. (2020)
5	Social relationships	X4	Dummy variable: 1 if the business owner has relatives working in associations, organizations, or state agencies; 0 otherwise.	Nam and Nghi (2011) Tan et al. (2015).
6	Type of enterprise	X5	Dummy variable: 1 if the enterprise is a sole proprietorship; 0 if it is a limited liability or joint stock company.	Tan et al. (2015); Tan et al. (2020)
7	Age of Enterprise	X6	Number of years the enterprise has been operating.	Hansen et al. (2002); Tan et al. (2015)
8	Support policies	X7	Dummy variable: 1 if there is capital support; 0 if there is no.	Hansen et al. (2002); Khoi et al. (2008); Nam and Nghi (2011); Tan et al. (2015)
9	Labor	X8	Number of employees in the enterprise.	Hansen et al. (2002), Kokko and Sjoholm (2004); Tan et al. (2015).

Source: Compiled by the author, 2024.

3.2. Research Data

The random sampling method was employed in this study. To ensure representativeness, the necessary sample size was determined using Yamane's (1967) formula for sample size determination: $n=N/(1+N.e^2)$ (2).

Where:

n: is the sample size required for the survey

N: is the total population under study

e: is the sampling error (e not exceeding 10% ensures the sample adequately represents the population).

Currently, many construction businesses are operating in the 13 provinces and cities in the Mekong Delta region. Due to time and budget constraints, the author selected several provinces and municipalities to conduct a representative survey. According to formula (1), 60 enterprises were surveyed for data analysis. These enterprises were selected for the study using random sampling based on the research area. Specifically, the author surveyed 30 enterprises in Bac Lieu province, 30 in Ca Mau province, and 40 in Can Tho city, totaling 100 construction enterprises selected randomly using the Excel random function for the survey. The survey was conducted by sending survey links to business owners, CEOs, or heads of business development departments using a predefined questionnaire.

IV. Results and Discussion

4.1. Characteristics of Business Owners

The following information describes the gender, educational level, and managerial experience of business owners, as shown in Table 2:

Table 2: Characteristics of business owners regarding gender, educational level, and managerial experience

Indicators		Female		Male		Total	
		Frequency	%	Frequency	%	Frequency	%
Educational level	Level 2	8	22.22	12	18.75	20	20.00
	Level 3	10	27.78	25	39.06	35	35.00
	College / University	18	50	27	42.19	45	45.00
Total		**36**	**100.00**	**64**	**100.00**	**100**	**100.00**
Experience	From 1 to 5 years	15	41.67	13	20.31	28	28.00
	From 6 to 10 years	10	27.78	26	40.62	36	36.00
	Over 10 years	11	30.55	25	39.06	36	36.00
Total		**36**	**100.00**	**64**	100.00	100	100.00

Source: Processed from survey data of 100 construction enterprises in the Mekong Delta, 2024.

The results from Table 2 show the gender and educational characteristics of construction enterprise owners in the Mekong Delta as follows: Among the total of 36 female owners, only 8 have a middle school education, accounting for 22.22%; 10 have a high school education, accounting for 27.78%; and 18 have a college/university education, accounting for 50.00%. This indicates that female owners have a relatively high level of education, which may be attributed to the region's increasing cultural and social conditions and educational level. On the other hand, among the 64 male owners, only 12 have a middle school education, accounting for 18.75%; 25 have a high school education, accounting for 39.06%; and 27 have a college/university education, accounting for 42.19%. Thus, the majority of male owners have a higher level of education compared to female owners. Additionally, among the 100 surveyed enterprises, only 20 owners have a middle school education, accounting for 20%; 35 owners have a high school education, accounting for 35%; and 45 owners have a college/ university education, accounting for 45%. Therefore, most owners have a relatively high level of education. Moreover, many owners have management experience in the construction field, with 72 owners having management experience of 6 years or more and only 28 owners having management experience of 1 to 5 years. Overall, the management experience of owners is a strength of construction enterprises in the Mekong Delta.

4.2. Characteristics of Enterprises

The situation regarding the number of years in operation and the number of employees in construction enterprises in the Mekong Delta is shown in Table 3 below.

Table 3: The number of years in operation and number of employees of construction enterprises

Indicators	Mean	Standard Deviation	Min	Max
Age of Enterprise	6.98	2.88	3	15
Labor	21.43	16.75	8	67

Source: Processed from survey data of 100 construction enterprises in the Mekong Delta, 2024.

The results from Table 3 show that enterprises are relatively young. Specifically, the average number of years in operation is 6.98 years, with the longest being 15 years, the shortest being three years, and a low standard deviation of 2.88. This indicates that the enterprises have a relatively low number of years in operation and are evenly distributed among the surveyed enterprises. Additionally, the number of employees in these enterprises is relatively high. Specifically, the minimum number of employees is 8, and the maximum is 67, with an average of 21.43 employees and a standard deviation of 15.75, which is lower than the average value. This indicates that these enterprises have a fairly even distribution of employees, with the number of employees concentrated around the average of 21.43.

Detailed information about the types of operations of these enterprises is shown in Figure 1 below.

Figure 1 shows that most construction enterprises in the survey sample are joint-stock and limited liability companies. Specifically, enterprises in the form of limited liability companies and joint-stock companies account for 53%, while private enterprises account for 47%. This is because most of the surveyed enterprises have relatively small operational scales.
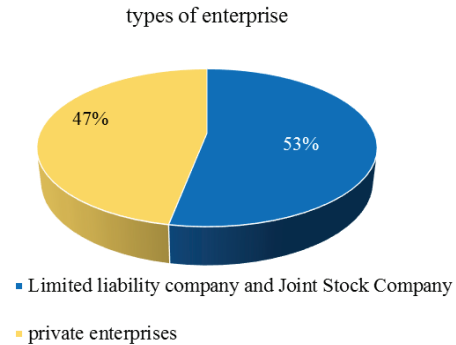

types of enterprise

47%   53%

■ Limited liability company and Joint Stock Company

■ private enterprises

Figure 1: Types of Operations of Construction Enterprises

Source: Processed from survey data of 100 construction enterprises in the Mekong Delta, 2024.

4.3. Regression Model Estimation Results

A multivariate linear regression method was used to estimate and identify factors affecting the business performance of construction enterprises in the Mekong Delta. The regression results are shown in Table 4 below.

Table 4: Regression Model Estimation Results

Biến	Model with the dependent variable as ROA (1)		A model with the dependent variable as ROS (2)	
	β	P	β	P
Gender	0.003	0.764	0.014	0.618
Age of Enterprise	-0.001	0.653	0.009	0.254
Education Level	0.014	0.006***	0.012	0.220
Experience	0.022	0.008***	0.024	0.004***
Type of enterprise	-0.05	0.055**	-0.127	0.003***
Support policies	0.013	0.577	0.015	0.755
Social Relationships	-0.022	0.257	-0.024	0.346
Intercept	-0.142	0.008	-0.089	0.326
R^2	0.569		0.623	
N	100		100	

Source: Processed from survey data of 100 construction enterprises in the Mekong Delta, 2024.

*Note: **; ***: correspond to significance levels of 5% and 1%, respectively*

Before estimating the regression model, tests for multicollinearity and heteroscedasticity were conducted. The Variance Inflation Factor (VIF) results for both models indicated VIF = 1.67 < 5, suggesting no issues with multicollinearity. However, the Breusch-Pagan test for heteroscedasticity using the "hettest" command indicated significant heteroscedasticity in both models with Prob > chi2 = 0.000 < 1%. Therefore, the author employed robustness checks and re-estimated the coefficients (Table 4).

The estimation results in Table 4 indicate that among the seven independent variables included in the study:

Three variables significantly impact the model (1): Education level, management experience, and enterprise type. These variables are statistically significant at the 1% and 5% levels. Specifically, the enterprise-type variable negatively correlates with Return on Assets (ROA), indicating that joint-stock and limited liability companies operate more efficiently than private enterprises. The education level and management experience variables positively correlate with the ROA coefficient, meaning that higher levels of education and more management experience lead to higher operational efficiency.

Two variables significantly impact the model (2): Management experience and enterprise type. The enterprise-type variable negatively correlates with Return on Sales (ROS), and both variables are statistically significant at the 1% level.

V. Conclusion

The analysis of the business performance of construction enterprises in the Mekong Delta indicates that their operations are relatively efficient. However, the pandemic over the past years has significantly impacted the activities of enterprises in general and construction enterprises in particular, leading to a decline in industry profits during 2021-2023. This profit decline is primarily due to a sudden cost increase as a percentage of total revenue, driven by rising input costs.

Moreover, the regression model estimation results show that three variables have a statistically significant impact on the performance of construction enterprises in the Mekong Delta: education level, management experience, and enterprise type. Among these, the management experience of the enterprise owners has the strongest effect on the operational efficiency of the enterprises.

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CÁC YẾU TỐ ẢNH HƯỞNG ĐẾN HIỆU QUẢ HOẠT ĐỘNG KINH DOANH CỦA DOANH NGHIỆP LĨNH VỰC XÂY DỰNG TẠI ĐỒNG BẰNG SÔNG CỬU LONG

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Tóm tắt: *Mục tiêu của nghiên cứu này là phân tích các yếu tố ảnh hưởng đến hiệu quả hoạt động kinh doanh của doanh nghiệp thuộc lĩnh vực xây dựng đang hoạt động tại khu vực Đồng bằng Sông Cửu Long. Dữ liệu nghiên cứu gồm 100 doanh nghiệp đang hoạt động trên địa bàn các tỉnh như Bạc Liêu, Cà Mau và thành phố Cần Thơ. Phương pháp hồi qui đa biến được sử dụng để kiểm định mối tương quan giữa các yếu tố. Kết quả ước lượng cho thấy, các yếu tố ảnh hưởng đến hiệu quả hoạt động kinh doanh của DNXD khu vực Đồng bằng Sông Cửu Long bao gồm: trình độ học vấn của chủ doanh nghiệp, kinh nghiệm quản lý và loại hình doanh nghiệp. Trong đó, kinh nghiệm làm quản lý của chủ doanh nghiệp là yếu tố tác động mạnh nhất đến hiệu quả hoạt động kinh doanh của DNXD khu vực Đồng bằng Sông Cửu Long.*

Từ khóa: *Doanh nghiệp, Đồng bằng Sông Cử Long, xây dựng, hiệu quả, hoạt động kinh doanh.*

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