The Management Efficiency of Construction Material Shops in Lopburi Province

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Abstract

This research aimed 1) to study the management efficiency level of construction material stores in Lopburi Province and 2) to study the factors affecting the management efficiency of construction material stores in Lopburi Province. A questionnaire was used to collect data from 227 construction material store operators in Lopburi Province. The statistics used for data analysis were frequency, percentage, mean, standard deviation, and multiple regression analysis.

The results of the research found that 1) the management efficiency of construction material stores in Lopburi Province, both overall and in each aspect, was at the highest level in planning, monitoring and evaluation, budgeting, coordination, and organization, respectively. 2) Organizational management factors, government policies, organizational management strategies, logistics systems, and marketing strategies influenced the management efficiency of construction material stores in Lopburi Province.

Keywords: Efficiency, Management, Construction

Introduction

The construction industry is a major sector worldwide and contributes a substantial share to the gross domestic product (GDP) of many countries, thereby playing a crucial role in national economic development. The construction materials market emerges from economic relationships formed during the production, distribution, and exchange of building materials. Prices of construction materials are influenced by multiple factors, including market demand, accessibility and availability of production inputs, production conditions, and access to raw materials and material resources. Global economic crises have exerted significant impacts on the economic and social systems of numerous countries, consequently affecting the construction materials market.

Analyzing price fluctuations in construction materials enables construction organizations and policymakers to address operational and strategic challenges. Such analyses support the identification of market trends, optimization of investment and awareness strategies, estimation of future profits and losses for construction material firms, adjustment of procurement and trading activities toward more profitable operations, and the formulation of effective government policies aimed at promoting and stabilizing the construction materials market (Gercekovich et al., 2020).

At present, the construction materials business is regarded as one of the most significant components of Thailand's economic system due to its substantial contribution to national income generation. This sector is characterized by high economic value, with annual circulation reaching the trillion-baht level. According to the Economic and Business Research Center of Siam Commercial Bank (2023), total sales of construction materials in Thailand in 2023 amounted to approximately 1.07 trillion baht, reflecting a growth rate of 1.8% compared to 2022, when nationwide sales totaled 1.05 trillion baht. The deceleration in growth was attributed primarily to declining prices of key construction inputs, particularly steel bars. In contrast, construction material sales in 2022 increased by approximately 3% compared to 2021, when total sales were recorded at 1.02 trillion baht, indicating a moderation in market expansion in 2023 (Economic and Business Research Center of Siam Commercial Bank, 2023).

Beyond its macroeconomic contribution, the construction materials business plays a crucial role in employment creation and career development, while also supporting continuous operations in related industries such as construction contracting and real estate development. As a result, the construction materials sector is widely recognized as a key upstream industry that underpins the performance and sustainability of Thailand's construction and real estate sectors. Sales of construction materials tend to move in the same direction as investment in the real estate sector, as construction material costs account for approximately 60% of total construction value. Major construction materials represent nearly half of total construction material sales and can be broadly classified into structural materials—such as steel bars, ready-mixed concrete, and cement—and decorative materials, including ceramic sanitary ware and ceramic tiles, which together reflect the close linkage between construction activity and material demand (Economic and Business Research Center of Siam Commercial Bank, 2023).

Consistent with this pattern, the Economic and Business Research Center of Siam Commercial Bank (2023) reported that the overall value of Thailand's construction industry in 2023, encompassing both public and private sectors, reached approximately 1.403 trillion baht, representing a 5% increase compared to 2022. Growth was driven primarily by public-sector construction, with government investment valued at around 817 billion baht and expanding by approximately 10%, supported by large-scale infrastructure projects and new project bidding. These projects included airport expansion and improvement initiatives, urban rail transit systems, high-speed rail development, and expressway construction, which were closely aligned with government efforts to support economic recovery, particularly in the tourism sector.

In the private sector, construction activity in 2023 expanded by approximately 4%, reaching a value of about 586 billion baht. This growth was largely driven by the launch of new residential developments nationwide, as well as increased investment in commercial real estate projects, including office buildings and retail spaces, aimed at supporting the recovery of purchasing power from both domestic and foreign investors (Economic and Business Research Center of Siam Commercial Bank, 2023).

The construction materials business in Thailand has continued to expand in response to rising demand from both domestic and international markets. This growth is closely aligned with the overall value of construction investment in the country, which has been driven primarily by government spending on large-scale infrastructure projects. Key initiatives include projects under the Eastern Economic Corridor (EEC) and nationwide expansions of road and rail transportation networks. These public investments have stimulated demand for construction materials across multiple segments of the industry (National Economic and Social Development Council [NESDC], 2023).

In parallel, private-sector housing construction has shown steady expansion in line with broader economic recovery trends. Following the easing of the COVID-19 crisis, improved economic conditions and household confidence have supported increased investment in residential construction. As a result, manufacturers and distributors of construction materials have benefited from higher revenues, although they continue to operate in an environment characterized by intense competition. This competition involves both domestically produced materials and imported construction products (Bank of Thailand, 2023).

Despite its growth potential, the construction materials industry in Thailand is considered highly competitive. Construction, renovation, and repair activities occur continuously, ranging from small-scale household repairs to large infrastructure developments. This has encouraged a large number of entrepreneurs to enter the market. Since 2021, the industry has experienced consistent growth due to several factors, including government infrastructure investment, expansion of transportation routes, and the recovery of private-sector projects in line with overall economic improvement. These factors have contributed to an average annual increase in construction investment value of approximately 4.9–5.2 percent (NESDC, 2023).

In terms of market structure, the industry comprises approximately 8,200 entrepreneurs, including large, medium, and small enterprises headquartered across the country. Amid ongoing economic uncertainty and fragile consumer purchasing power, competition among construction material businesses has intensified as firms seek to maintain and expand market share. The market includes both modern trade retailers and traditional operators, with businesses widely distributed across all regions of Thailand. No single firm dominates the market, resulting in a highly fragmented and competitive industry landscape (Kasikorn Research Center, 2024).

In addition to competitive pressures, the construction materials industry faces several significant risk factors related to rising cost structures. Key operational costs have increased, particularly labor expenses associated with the potential adjustment of minimum wages, as well as higher electricity tariffs for the business sector, which represent a major cost component for construction material entrepreneurs (Kasikorn Research Center, 2024).

Macroeconomic conditions have further intensified cost pressures. The depreciation of the Thai baht by approximately 3.3 percent in 2022 contributed to higher domestic inflation, leading to increased costs for construction materials that rely on imported raw materials and intermediate goods (Bank of Thailand, 2023). Moreover, the temporary shutdown of numerous blast furnaces in Europe and Japan in recent years significantly reduced global steel supply, resulting in sharp increases in steel and steel product prices. These price increases subsequently affected other construction material categories, including electrical equipment, plumbing materials, wood products, paints, hardware, and tools (World Steel Association, 2023).

Although steel prices have shown signs of stabilization in the current period, prices of construction materials in other product categories have continued to rise across all segments. This trend has been exacerbated by higher energy prices, particularly diesel and gasoline, which directly influence logistics and transportation costs. The reopening of China's economy following the lifting of its Zero-COVID policy led to a rebound in energy demand, further pushing global oil prices upward. At the same time, expectations that the Federal Reserve may delay interest rate hikes have contributed to sustained high oil prices, increasing transportation and distribution costs within the construction materials industry (International Energy Agency, 2023).

Beyond short-term cost pressures, the construction materials business also faces long-term structural challenges associated with technological advancement and the transition toward environmentally friendly and sustainable products. Compliance with environmental standards, adoption of green technologies, and investment in innovation are expected to significantly affect production costs and competitive dynamics in the future. As a result, construction material entrepreneurs must adapt their strategies to remain competitive amid rising costs and evolving market expectations (Kasikorn Research Center, 2024).

The overall situation of the construction materials business continues to expand in line with the value of construction activities, including both large-scale infrastructure projects and small-scale construction. However, despite growing demand, construction material entrepreneurs continue to face intense competitive pressure. As a result, business operators must adapt their organizational structures and enhance their business capabilities in order to remain competitive and sustainable in a rapidly changing environment.

Government policy plays a crucial role in supporting and promoting the construction materials industry, both directly and indirectly. Key policy measures include the development of entrepreneurs' digital knowledge and skills, investment in basic infrastructure projects, promotion of domestically produced construction materials, and the provision of low-interest financing to businesses in the construction materials sector. These policies are consistent with studies indicating that large-scale government infrastructure development—particularly investment in mass transit systems such as electric railway networks—stimulates private investment and

increases demand for real estate development, especially condominium projects located along transit corridors (Asian Development Bank [ADB], 2023; World Bank, 2022).

Furthermore, regional connectivity in trade and investment has strengthened linkages among related industries, including real estate development, construction contracting, and construction materials. Government policies aimed at enhancing cross-border connectivity and infrastructure investment therefore contribute to growth across these interconnected sectors and help stimulate trade and investment at both national and regional levels (World Bank, 2022).

At the firm level, construction material entrepreneurs must implement effective organizational management strategies to align their operations with current economic and competitive conditions. Sound corporate management strategies enable businesses to reduce operational risks, develop human resources in line with labor market demands, allocate budgets effectively, maintain liquidity, and apply technology to improve operational efficiency. Corporate strategy is generally defined as a systematic plan for allocating limited organizational resources to achieve objectives, create competitive advantages, and minimize risk in an uncertain business environment (Porter, 2008). Similarly, corporate strategy can be viewed as a set of actions designed to respond to changes in competitive conditions and to strengthen an organization's position relative to its competitors (Hitt et al., 2020).

In addition, logistics management is a critical component of the construction materials business. The industry requires efficient procurement processes, warehouse management, and transportation systems, particularly because construction materials are bulky, heavy, and require large storage areas. Effective warehouse management, systematic material handling, and reliable transportation processes are essential to support timely product distribution. Since logistics encompasses the flow of products from upstream suppliers to downstream customers through multiple operational stages, efficient logistics management is vital to overall business performance and cost control in the construction materials industry (Christopher, 2016).

In addition, construction material entrepreneurs must implement effective marketing strategies that emphasize key elements such as product pricing, product quality, distribution channels, and sales promotion. A marketing strategy can be defined as a structured plan or roadmap for utilizing marketing resources to create differentiation and uniqueness in an organization's products or

services. It involves the identification of marketing objectives, the definition of target customer groups, and systematic market analysis in order to formulate and implement appropriate marketing plans over specific periods (Kotler & Keller, 2016).

This study focuses on the area of **Lopburi Province** and nearby provinces, which are characterized by a high concentration of real estate development projects from both the public and private sectors. The region is also considered an important area for infrastructure investment, reflecting continued government and private-sector spending on construction activities. As a result, demand for construction materials in this area remains relatively high and stable.

Customer behavior in the construction materials market within this region tends to be relatively consistent. Most customers purchase construction materials for purposes such as new building construction, renovation, repair, expansion, and interior decoration. Understanding these purchasing patterns is essential for generating insights that can benefit construction material entrepreneurs as well as relevant government agencies. The findings of this study are expected to provide useful information for business planning, policy supervision, and the formulation of strategies aimed at supporting economic growth and enhancing the competitive capabilities of construction material businesses.

Accordingly, this research focuses on the topic **"Management Efficiency of Construction Material Shops in Lopburi Province."** The results of the study can be used by entrepreneurs as a guideline for operational management, marketing strategy planning, and analysis of organizational potential in the construction materials business. Moreover, the study contributes to the development of an appropriate management model for construction material enterprises, enabling organizations to improve their competitive efficiency and achieve sustainable growth in the future.

Research Objectives

1. To study the level of management efficiency of construction material shops in Lopburi Province and
2. To study the factors affecting the management efficiency of construction material shops in Lopburi Province.

Research Hypothesis

H1 Government policy factors, corporate management strategies, logistics systems, and marketing strategies affect the management efficiency of construction material stores in Lopburi Province.

From the literature review, the conceptual framework can be drawn as shown in Figure 1.

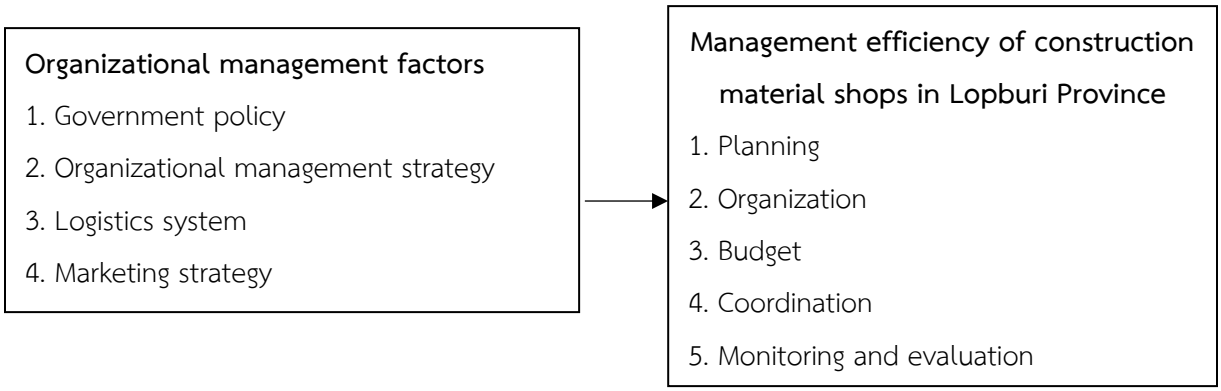

Figure 1: Conceptual Framework

Research Methodology

The population in this study consisted of 522 construction material shop operators in Lopburi Province, and the sample group of 227 was obtained from the Yamane sampling formula (Taro Yamane, 1973) with a reliability level of 95 percent using the stratified sampling method.

The research instrument is a questionnaire consisting of Part 1: Personal factors of the respondents, including gender, age, education level, average monthly income, and duration of business operation. The questionnaire is a multiple-choice type. Part 2: Organizational management factors. The questionnaire is a Likert scale with 5 levels of scoring: the highest equal to 5 points, the high equal to 4 points, the moderate equal to 3points, the slight equal to 2 points, and the least equal to 1 point. Part 3: Management efficiency of construction material shops in Lopburi Province. The questionnaire is a Likert scale with 5 levels of scoring: the highest equal to 5 points, the high equal to 4 points, the moderate equal to 3points, the slight equal to 2 points, and the least equal to 1 point.

Before using the data collection instrument, the objective consistency test (IOC) and the questionnaire reliability test via Cronbach's alpha were systematically conducted. The examination found that the IOC value was 0.839 and the Cronbach's alpha value was 0.973, indicating that the research instrument had sufficient quality (Polit & Beck, 2006; Hair et al., 2012). To obtain data, this study sent questionnaires to construction material shop operators in Lopburi Province. Descriptive statistics were used for data analysis, including frequency, percentage, mean, standard deviation, and multiple regression analysis.

Research Results

1. Personal factors of the questionnaire, most of the respondents were aged between 41 - 50 years, equals to 33.19 percent, most of them graduated with a bachelor's degree, equals to 37.17 percent, most of them had an average monthly income between 200,001 - 250,000 baht or more, equals to 33.18 percent, and most of them had been in business for 11 years or more, equals to 86 percent, respectively.

2. The management efficiency of construction material shops in Lopburi Province, both overall and in each aspect, is at the highest level in planning, monitoring and evaluation, budgeting, coordination, and organization, respectively.

Table 1: Mean and standard deviation of management efficiency of construction material shops in Lopburi Province

Management efficiency of construction material shops in Lopburi Province	$\overline{x}$	SD	Result
Planning	4.38	0.49	Very much
Organization	4.22	0.39	Very much
Budget	4.34	0.37	Very much
Coordination	4.32	0.37	Very much
Monitoring and evaluation	4.37	0.39	Very much
	4.33	0.32	Very much

3. The organizational management factors, government policy, had a β value of 0.235, organizational management strategy had a β value of 0.329, logistics system had a β value of 0.243, and marketing strategy had a β value of 0.131, which showed that they had a positive influence on the management efficiency of construction material stores in Lopburi Province with statistical significance at the 0.05 level, with Sig. Values of 0.000, 0.000, 0.001, and 0.002, which were consistent with the set hypothesis. When analyzing the correlation coefficient (R), it was 0.759, which showed that the group of independent variables had a high relationship with the dependent variable, and the prediction coefficient was 0.659, which showed that the group of independent variables affected the management efficiency of construction material stores in Lopburi Province by 64.1 percent, as detailed in Table 2.

In order, the equation can be written as follows.

$$Y= 0.947+0.329X_1 +0.243X_3+0.235X_1+0.132X_4$$

Table 2: Multiple regression analysis of factors influencing management efficiency of construction material shops in Lopburi Province.

Factors	Unstandardized (b)	SE	Standardized (β)	t	Sig.
(Fixed value)	1.101	0.104		10.632	0.000
Government policy	0.123	0.020	0.235	10.662*	0.000
Organizational management strategy	0.243	0.022	0.329	9.818*	0.000
Logistics system	0.192	0.032	0.243	4.405*	0.001
Marketing strategy	0.120	0.101	0.131	3.632*	0.002
R = 0. 756		Adjusted R^2 = 0. 659			
R^2 = 0.580		SE = 0.103			

* Statistical significance at the 0.05 level

Discussion & Conclusion

This study on the management efficiency of construction material shops in Lopburi Province presents key findings in accordance with the research objectives, with empirical results used to support the conclusions drawn.

First, the research results indicate that the overall management efficiency of construction material shops in Lopburi Province, as well as efficiency in each specific dimension—namely planning, monitoring and evaluation, budgeting, coordination, and organization—was rated at the highest level. The high mean scores across all dimensions reflect that most entrepreneurs apply systematic management practices in their daily operations. In particular, the findings suggest that business operators emphasize clear planning processes, effective organizational structuring, appropriate budget allocation based on business liquidity, strong coordination with internal and external stakeholders, and continuous monitoring and evaluation of operational performance. These results demonstrate that well-structured management systems contribute directly to improved efficiency and effectiveness in business operations. This finding is consistent with prior research indicating that planning, organization, budgeting, coordination, and control are fundamental components of management efficiency and organizational effectiveness (Polit & Beck, 2006).

Second, the research results confirm that organizational management factors, government policies, organizational management strategies, logistics systems, and marketing strategies have a statistically significant influence on the management efficiency of construction material shops in Lopburi Province. The empirical evidence suggests that internal factors—such as organizational management and strategic planning—play a crucial role in guiding decision-making and resource utilization. At the same time, external factors, particularly government policies, help create a supportive business environment that facilitates stable operations and growth. In addition, efficient logistics systems enhance inventory control, warehouse management, and transportation efficiency, while effective marketing strategies improve customer reach, competitiveness, and sales performance. These results support previous empirical studies that emphasize the importance of strategic management, logistics efficiency, and marketing effectiveness as key determinants of organizational performance and management efficiency in business enterprises (Hair et al., 2012).

Overall, the findings of this study underscore the importance of adopting a holistic management approach that integrates effective organizational management, supportive government policies, well-defined management strategies, efficient logistics systems, and comprehensive marketing strategies. Such an integrated approach enables construction material businesses to enhance their management efficiency, strengthen competitiveness, and achieve sustainable growth in the long term.

Recommendations

Policy Recommendations

Based on the research findings, government policy was found to have a statistically significant and positive influence on the management efficiency of construction material shops in Lopburi Province (β = 0.235, $p < .05$). Therefore, relevant government agencies should place greater emphasis on formulating and implementing policies that enhance business efficiency and long-term competitiveness in the construction materials sector.

First, government agencies should continue to support and expand policies that promote organizational development and digital transformation among construction material entrepreneurs. This includes training programs focused on digital skills, inventory management systems, accounting software, and online marketing platforms, which can help businesses improve operational control and decision-making efficiency.

Second, the government should strengthen support for logistics and supply chain development, particularly for small and medium-sized construction material shops. Policies that encourage investment in warehouse management systems, transportation optimization, and logistics technology adoption would help reduce operational costs and enhance service quality, especially in regions with high construction activity such as Lopburi Province.

Third, financial support measures, such as low-interest loans and accessible working capital programs, should be tailored to the needs of construction material businesses. Given that most entrepreneurs in this study have extensive business experience and relatively high income levels, financial assistance should focus on productivity-enhancing investments rather than short-term liquidity alone.

Finally, government infrastructure and regional development policies should promote stronger linkages between construction material businesses and related sectors, including real estate development and construction contracting. This can be achieved by encouraging the use

of locally sourced construction materials in public projects and fostering cooperation between public and private sector stakeholders.

Recommendations for Further Research

Although the results of this study indicate that organizational management factors, government policy, organizational management strategies, logistics systems, and marketing strategies collectively explain a substantial proportion of the variance in management efficiency (Adjusted $R^2 = 0.659$), there remains unexplained variance that warrants further investigation.

First, future research should incorporate additional variables that may influence management efficiency, such as leadership style, service quality, technology adoption, supplier relationship management, financial management practices, and competitive intensity. Including these factors may provide a more comprehensive understanding of the determinants of management efficiency in the construction materials business.

Second, further studies should expand the research scope to include construction material shops in other provinces or regions. Comparative studies would allow researchers to examine whether the findings from Lopburi Province can be generalized to other areas with different economic and competitive conditions.

Third, future research may employ qualitative or mixed-methods approaches, such as in-depth interviews or case studies, to gain deeper insights into managerial practices and strategic decision-making processes that cannot be fully captured through quantitative questionnaires.

Finally, longitudinal studies are recommended to examine changes in management efficiency over time and to assess the long-term impact of government policies, strategic management practices, and logistics development on business performance and sustainability in the construction materials sector.

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