

# FACTORS AFFECTING OUTSOURCING DECISIONS FOR FACILITY MANAGEMENT SERVICES

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## ABSTRACT

*This research aimed to explore factors that affect outsourcing decisions for Facility Management (FM) services in Thailand. It was based on the result of 290 respondents authorized to make decisions on outsourcing Facility Management services. Due to differences in each business field, factors that affect outsourcing decisions were also dissimilar. The goal of decisions, in general, was to choose outsourcing services instead of using in-house resources which reflected business needs in terms of management, strategy, economics, or others to help facilitate and increase the competition level. The results of decision makers' perceptions showed that important factors in different industries considerably varied. The most important factors were management and quality factors which were strongly supported by the Core Competency theory. Meanwhile, the Transaction Cost Economics theory was still significant but not regarded as a top priority for business concerns in the present uncertain period.*

**Keywords:** *Outsourcing, decision factors, facility management*

## 1. INTRODUCTION

The real estate sector in Thailand was one of the fastest-growing sectors [1]. The facility management (FM) market is also expected to grow, with the increasing acceptance rate of outsourcing services spreading out of the central business district area in Bangkok and the government's plan to invest in infrastructure. The FM landscape in Thailand is highly competitive and mature with a high outsourcing rate to major multinational companies, and many local services for established end-user sectors [2-3]. Companies that compete in the FM market offer basic services such as cleaning and repairing equipment and systems [4]. Insufficient market education including standards to be used as a reference, leads them to choose to manage their operations in-house [3].

The economic situation in Thailand and around the globe is constantly changing including the Industrial Revolution 4.0, the context of business adaptation, therefore, changes rapidly and is hardly predictable. Furthermore, the unexpected COVID-19 pandemic during 2019-2020 has strongly impacted Thailand's economy, resulting in weaker business confidence, and reduced household income as well as consumption [5]. Business downsizing has long been used to cut costs and increase productivity. Companies will later choose to outsource to optimize their limited budgets [6].

The most important factor to win outsourcing contracts in the market is pricing [2]. The pandemic situation and faster digital disruptions might be thereby a huge opportunity for outsourcing. In the highly competitive FM market, FM service companies that have limited resources need the information to influence customer decision-making. Pricing competition with a small margin is regarded as an ineffective alternative. For customers, pricing might be the most important factor in the final step for selecting a vendor with other factors left behind. Finding the right factors in each customer's sector could be done by utilizing FM service

companies to provide solutions for customers' needs and support the growth of the Thai real estate sector in the future.

## **Related Work**

To clearly understand outsourcing decisions for FM services, the following section is divided into three parts, namely outsourcing concepts, outsourcing-related theories, and Facility Management concepts and customer segments.

### *Outsourcing concepts*

Outsourcing is defined as the contracting-out process of services that were previously performed in-house to an external service provider to increase organizational efficiency and effectiveness [7] by placing more concentration on core activities and increasingly offering non-core activities to outsourcing services [8]. An outsourcing decision is a version of a "make" or "buy" decision in which an organization decides to carry out an activity using in-house staff (make) or contract out to an external service provider (buy) and must ensure that these limited resources are channeled towards the most important and productive activities [9]. The in-house FM has the advantage of long-term human resource development, allowing flexibility in internal management, and support for long-term financial analysis. However, an unclear scope of work can lead to lowering customer satisfaction, the difficulty of personnel performance measurement, and soaring supervision costs. Outsourced FM provides more time for company employees to mainly focus on organizational core competencies. It helps control quality as well as standard of services based on innovation and technologies and also reduces operational expenses. Outsourcing, on the contrary, has the limitation of flexible management, loyalty from outsourcing personnel, and risk of confidential information loss, leading to an unsustainable organization in the long run with heavy hidden costs from contracts [10]. The cycle of the outsourcing process consists of preparation, vendor(s) selection, transition process, relationship management, and reconsideration. Outsourcing decision factors are influential in the preparation phase to gather initiative ideas, perform information analysis, and accomplish strategic purposes that could be employed as motivating factors for an organization to decide.

### *Outsourcing-related theories*

Outsourcing has been approached by applying a series of different theories. This research has gathered 11 different theories related to outsourcing and systematically analyzed the most popular theories in the preparation phase of outsourcing, which are the Transaction Cost Economics theory (TCE) and Core Competency Theory. Transaction costs specifically refer to the gross cost of running the system [11]. The decision and the extent of outsourcing depend on the transaction costs associated with outsourcing versus internalization. TCE might neglect collaborative arrangements but still serve as an appropriate fundamental decision-making tool to ensure the economic efficiency of firms [12]. Core Competency Theory is, however, used to develop a framework to analyze how firms leverage their resources to meet the demands of international competition [13] and improve the competitiveness of the organization [14] by using core competency as the collective knowledge of an organization, especially how to coordinate diverse production skills and integrate multiple streams technologies. From previous studies, the TCE Theory focuses primarily on cost and investment based on financial terms, but the Core Competency Theory focuses on qualitative aspects of an organization for competitiveness. In addition to outsourcing decision studies collected directly to gather previous outsourcing decision factors on a wide variety of services including its risks and

benefits, 51 more factors were categorized into seven economic groups quality, management, technological, strategic, functional, and environmental factors.

### *Facility Management concepts and customers segments*

Facility Management is defined as a professional integration of processes within an organization to maintain costs and ensure functionality, comfort, safety, and efficiency of the built environment to improve the quality of life of people and the productivity of the core business by integrating people, place, process, and technology [4, 15-16]. That is a clear definition concerning both outsourcing-related TCE and Core Competency theories. Regarding the five FM services spheres, they are composed of building operation and maintenance, support services, environmental management, IT and telecommunications, and property management [17]. The current FM situation in Thailand shows that companies mainly focus on routine jobs [1]. The FM practice at the level of place factor is eminently acceptable for Thai people, especially those feeling proud seeing their physical resources in excellent condition and simply satisfactory when knowing they are cost-effective [18].

The FM customer segments were investigated based on various types, which are sizes, solution types, deployment types, and vertical types. With regards to vertical types, they are divided into Banking, Financial Services, and Insurance (BFSI), Government, Healthcare, Manufacturing, Retail, Telecom and IT, Real Estate, and others [19]. The vertical type is rather specific business industries. The information about customer segments in Thailand according to vertical types indicated that they have high potential and need to outsource FM services because they must remain under the law of The Energy Conservation Promotion Act B.E.2535 to efficiently control their total energy consumption. Large-scale organization has more complicated management. The Department of Alternative Energy Development and Efficiency (DEDE) has categorized vertical types of designated buildings into nine segments, which are department stores, offices, hotels, hospitals, education, farms, electricity authorities, water supplies, and others segments [20].

### **Our Contribution**

From previous studies, one of the most important factors in winning outsourcing contracts is pricing or a supporting cost-effective factor. Among a faster digital-disrupted society together with a new trend of business downsizing, other factors apart from the economy-related ones, however, might play a vital role in decision-making among Thai customers. Moreover, this research specifically focused on the factors playing crucial roles in FM services outsourcing decisions made by authorized decision-makers.

### **Paper Structure**

The rest of the paper is organized as follows. Section 2 explains the research methodology used in this study, which includes data collection through online questionnaires, and outsourcing decision factor analysis. Section 3 presents results and discussions. Section 4 concludes the paper and presents recommendations and a clear direction for future research.

## **2. RESEARCH METHOD**

### **Data Collection**

The population for this study is 3,207 Thailand-designated building companies from the listings of Thailand-designated buildings in 2019 by DEDE [20]. The proportional sample comprised 290 companies involving outsourcing decisions on FM services. They were categorized into six customer segments. The questionnaire consists of the general information of respondents, companies' characteristics, FM outsourcing, and 51 outsourcing decision factors on a 5-point Likert scale, 5 indicating 'most influencing', 4 indicating 'high influencing', 3 indicating 'average influencing', 2 indicating 'little influencing', and 1 indicating 'least influencing'. The questionnaire has a value of Cronbach's Alpha 0.963 which indicated high internal consistency [21].

Online questionnaires were sent to the selected companies' respondents through emails and the Line application was collected from the listings of Thailand-designated building companies. They were later obtained by using the Yamane formula to determine the sample size and proportional stratified random sampling conducted according to the proportion of the population in each segment. A simple random sampling is then carried out without putting back until the required number was reached [22].

After calculating the sample size and contacting selected companies' respondents, only one respondent from the water supply and one respondent from electrical authority segments were obtained, representing insufficient data to represent the total population of each segment. Similarly, the farm segment has some limitations regarding the contactable information of the respondents. Only one questionnaire was responded to, not showing a good representative of the segment.

Then, this research studied six customer segments from 290 companies in total. There are 75 department stores, 66 offices, 57 hotels, 26 educational institutes, 28 hospitals, and 38 other companies. There are 51 managing directors and those with an upper level, 129 managers, 20 assistant managers, and 90 chiefs/senior officers. All these persons were treated as respondents and they have participated in organizational outsourcing decisions on FM services. 73% was the highest number showing that most respondents' companies chose outsourcing security. The second most popular service at 70% is building appliance testing. And the third most popular service is cleaning which was at 66%.

### **Data Analysis**

On a 5-point Likert scale, 5 indicating 'most influencing' and 1 indicating 'least influencing'. The analysis method for identification of highly affected outsourcing factors is mean with standard deviation. It was computed to determine the perceptions of the respondents [23]. For the interpretation, the criteria for average mean value were [24] as follows; 4.51 – 5.00 means 'most influencing', 3.51 – 4.50 means 'high influencing', 2.51 – 3.50 means 'average influencing', 1.51 – 2.50 means 'little influencing', and 1.00 – 1.50 means 'least influencing' regarding the outsourcing decision. By interpreting the mean value with the above criteria as referred from [24], the mean value and standard deviation are obtained from the results of the answers. The mean is compared with the interpretation criteria to get the opinion level of the sample. Then use t-test performed generalized the population with a significant level at 0.05. Statistical tools were later employed for comparing different outsourcing decision factors

between different customer segments using F-tests (One-way ANOVA) and Scheffe's method to compare the means of more than two samples for adjusting significance levels in a linear regression analysis to account for multiple comparisons [25].

### 3. RESULTS AND DISCUSSIONS

The most important outsourcing decision factors for FM services in Thailand-designated building companies are management factors which exhibited a high influencing level. The second rank is quality factors which showed a high influencing level. And the third rank is technological factors which showed a high influencing level. The last deciding factor is environmental factors which showed an average influencing level.

**Table 1.** Group of outsourcing decision factor rankings from all customer segments by mean scores

Ranking	Thailand-designated companies		Department Store		Office		Hotel		Education		Hospital		Others	
	Factors	Mean	Factors	Mean	Factors	Mean	Factors	Mean	Factors	Mean	Factors	Mean	Factors	Mean
1	M	3.90*	M	3.73*	M	4.10*	Q	3.77*	M	3.88*	M	4.48*	M	3.81*
2	Q	3.78*	S	3.63*	Q	4.02*	T	3.75*	Q	3.71*	T	4.11*	Q	3.68*
3	T	3.67*	Q	3.57*	S	3.90*	M	3.68*	E	3.35	Q	3.97*	T	3.59*
4	S	3.64*	T	3.54*	E	3.87*	S	3.51*	T	3.30	S	3.92*	E	3.56*
5	E	3.56*	N	3.48	T	3.76*	E	3.46	S	3.14	F	3.84*	S	3.51*
6	F	3.46	F	3.45	F	3.59*	F	3.39	F	3.05	E	3.62*	F	3.38
7	N	3.23	E	3.41	N	3.30	N	3.23	N	2.33	N	3.39	N	3.08

Note: \* indicating a high influencing level, E = Economic factors, Q = Quality factors, S = Strategic factors, M = Management factors, F = Function-characteristic factors, T = Technological factors, N = Environmental factors

#### Outsourcing decision factors of each customer segment

In Table 1, management factors were located on the top rank of a department store, office, education, hospital, and other segments but the hotel segment has quality factors instead. The top-rank segments had a mean score at a high influencing level. The analysis results were positive confirming the hypothesis that economic factors did not include in the top ranks. Moreover, the top 3 ranks among 51 outsourcing factors are 'reducing the management load', 'saving the management time', and 'improving quality requirements' respectively. The results were supported by core competency theory more than TCE theory. Management and quality factors could significantly contribute to the customer benefits and delivery of value in a systematic shorter period. On the other hand, economic factors were ranked as highly influencing in the office, hospital, and other segments, showing economic factors were still important to evaluate outsourcing decisions, especially in these three segments. The identification of significant differentiation of each factor among customer segments was measured with F-test (One-way ANOVA) and Scheffe's method.

**Table 2** A comparison of outsourcing decision factors among different groups of customer segments using F-test (One-way ANOVA)

Factors	Thailand-designated building	Department Store	Office	Hotel	Education	Hospital	Others	F	Sig.
	(n = 290)	(n = 75)	(n = 66)	(n = 57)	(n = 26)	(n = 28)	(n = 38)		
	Mean	Mean	Mean	Mean	Mean	Mean	Mean		
1 Economic	3.56	3.41	3.87	3.46	3.35	3.62	3.56	4.04	.001
2 Quality	3.78	3.57	4.02	3.77	3.71	3.97	3.68	3.35	.006
3 Strategic	3.64	3.63	3.90	3.51	3.14	3.92	3.51	7.40	.000
4 Management	3.90	3.73	4.10	3.68	3.88	4.48	3.81	7.38	.000
5 Function-characteristics	3.46	3.45	3.59	3.39	3.05	3.84	3.38	4.60	.000
6 Technological	3.67	3.54	3.76	3.75	3.30	4.11	3.59	4.32	.001
7 Environmental	3.23	3.48	3.30	3.23	2.33	3.39	3.08	7.77	.000

### Outsourcing decision factor comparison among different customer segments

From Table 2, a comparison of perceptions of respondents from Thailand-designated building companies in FM services outsourcing decision factors was shown using F-test (One-Way ANOVA). The outsourcing decision factors in all 7 groups differed significantly with the statistical significance level at 0.05. The differences were later tested by Scheffe's method for adjusting the significance level in a linear regression analysis to account for multiple comparisons.

Based on mean scores in the Scheffe analysis result, the economic factors and quality factors affected office segments more than the department store segment. Management factors affected the office segment more than the hotel segment and affected the hospital segment more than the department store, hotel, and other segments significantly. Strategic factors affected the hospital and department store segments more than the education segment and affected the office segment more than the hotel and education segments significantly. Function-characteristic factors affected hospital and office segments more than education segments. Technological factors affected hospital segments more than department store and education segments significantly. Environmental factors affected the education segment less than the department store, office, hotel, hospital, and other segments significantly. All factors analysis were differentiated with the significant level at 0.05.

### Discussions

The research results identified the factors in determining the outsourcing of FM services across different industries in wide aspects.

Strategic factors influenced education decisions at the average influencing level, which was less than the office and department store, and hospital segments which prioritized the high influencing level. The critical conditions supporting this analysis are: The COVID-19 epidemic led the government to take measures to close institutions. Allowing schools and universities to urgently manage distance learning to provide comprehensive and highly effective distance learning for all students depends on several factors [26]. Changing the teaching mode is challenging. Therefore, education attaches importance to the management that must accompany the teaching quality. This situation supports the quality and management factors

more than the strategic factors of the office, department store, and hospital segments. These also support functional characteristics factors that affected the education segment more than the office and hospital sectors due to preparation infrastructure supporting core business to transform classroom teaching to online format urgently.

In the office segment, to keep business continuity during the COVID-19 pandemic, many organizations have implemented a remote working policy for employees to work from home. Strategic facility management (FM) supported remote working policies by developing organizational norms [27]. In addition, entire teams and leaders needed to perform multiple disciplines and make decisions quickly to collaborate with suppliers and customers, all to keep the business running [28]. Department store is another group that has been affected by government lockdown measures. It is necessary to focus on strategy significantly to increase online sales channels to reduce the impact of shopping center closures. In the hospital segment, strategic factors need to improve and focus on the company's core competencies and to adapt long-term plans in line with an initiative global "Medical Hub" policy in the Kingdom [29]. In other countries, Thai private healthcare providers benefit from a cooperative approach to expanding their businesses overseas. A more competitive multinational market for supplies and talent is expected to boost Thailand's healthcare system [30]. In addition, environmental factors affect the education segment's outsourcing decision less than the other five segments, which are classified at the little influencing level. Moreover, the education decision-maker ranks all environmental factors at the bottom of all 51 outsourcing decision factors.

In office segments, employees were kept safe by launching a 'work from home (WFH)' policy. In such conditions, organizations consider reducing unnecessary expenses, such as office rent and building maintenance [31]. In addition, they were challenged with managing work demands while sustaining employees' productivity and commitment [32, 33]. Thus, economical and quality factors influence outsourcing decisions in office segments more than the department store segment that, prioritizes proper management of department stores for hygiene and safety concerning COVID-19 epidemic control measures, as shown in the top-ranking factors of the department store segment.

The above circumstances also resulted in the office segment giving more importance to strategic and management factors than the hotel segment, which prioritized quality factors. Thailand tourism report in Q4, 2022 supported quality factors that Thailand has built a solid reputation for tourism over the past decades and boasts a healthy infrastructure for reputable hotels. The Amazing Thailand campaign moved away from quantity to measuring tourism success towards quality, such as increasing the average length of stay and overall quality of visitor experience [34].

In addition, management factors affected the hospital segment more than a department store, hotel, and other segments. For example, with patients' high expectations, management factors such as better responsibilities and accountabilities from building and maintenance service can be safer and more reliable equipment, less service cost, less equipment downtime, more revenue, and more effective use of workforce [35]. Moreover, effective hospital supply chain management is cost reduction and key service enhancements via devoted logistics and audit trail support [36].

Technological factors affected the hospital segment more than the department store and education segments because problems are related to low-level medical devices' operability and undetected high risks resulting from the use of technology in developing countries. In addition,

technology has reached high levels of complexity, sophistication, and expected level of quality [37]. These situations make technology factors more severe than the other two segments.

FM service providers can use such research results combined with other important information about each business sector at that time to consider developing products and services including offering solutions that meet the needs of customers more efficiently. Moreover, FM providers can use this information as a criterion for the proposal that could be important elements that support the procurement possibilities.

On the other hand, other segments could represent general customers with unknown requirements or business focus points; the reason for outsourcing could answer management aspects and increase quality with cost reduction. But the best decision will come from real customers' insights, and solutions should be offered at an appropriate time also.

#### **4. CONCLUSIONS AND RECOMMENDATIONS**

The study aims to identify and compare outsourcing decision factors of FM services among customer segments. The expected benefits are direct to FM providers for Develop products, services, and customized solutions to meet the customer needs for each customer segment. From research results, Thailand-designated building customers prioritize five factors to decide outsourcing FM services. These are management, quality, technological, strategic, and economic factors. In addition, the top three rankings are 'reduce the management load, save the management time, and quality improvement,' which arrange management and quality factors. From previous studies, the Transaction Cost Economics Theory, to ensure economic efficiency, is the most popular theory among others regarding outsourcing theories. From previous studies, the Transaction Cost Economics Theory, to ensure economic efficiency, is the most popular theory among others regarding outsourcing theories. However, this research supports more on the Core Competency Theory. The most important groups of factors, such as management and quality factors, support an organization to gain organization collective multiple productive skills and the integration methods of various technologies into a portfolio of core competencies for work and delivery of value for the purpose of competitive advantages. The transaction cost economics theory is the key element in the majority, especially office and hospital segments. It will be a far better solution if it incorporates economic factors at the same time. Furthermore, providers can employ these factors as criteria for developing products and services, as well as offering interesting solutions to meet customers' needs exactly. The combination of potential factors in a real practice started from many effective factors during the Covid-19 pandemic, which motivated various unpredictable factors. Climate change awareness of responsible investment has also gradually awakened [38]. These urgent real-time factors will be considered in outsourcing decisions that provide up-to-date solutions.

Factors in outsourcing are different for each group of customers. For the department store segment, the research results recommend providing management, strategic, quality, and technological factors responsively, which have been ranked on a high influencing level by mean analysis. Therefore, FM providers should focus on providing FM services to reduce management time, provide specialist skills, and promote the strategy for department stores to develop the technology. In addition, it aims to reach more customers, improve the quality of service to obtain workplace health and safety, such as popular FM services in department stores consisting of cleaning, security, or building appliance testing, and help them operate under legal measures stipulated by the government.



In the office segment, the research results recommend providing management, quality, strategic, economic, technological, and function-characteristic factors responsively, which have been ranked on a high influencing level by mean analysis. FM providers should focus on providing specialized management with predictable costs to improve quality requirements and increase responsiveness to market change according to free services or resources for core activities.

For solutions to hotel customers, the research results recommend providing quality, technological, management, and strategic factors responsively, which have been ranked on a high influencing level by mean analysis. FM providers should consider utilizing technology to increase confidence in building system safety. Including technology that enhances the quality of service for the hotel's customers to be more comfortable and enhance their brand image.

For the education segment, the research results recommend responsively providing management and quality factors, which have been ranked on a high influencing level by mean analysis. The management factors could help them enhance customer services, and quality factors are essential to the quality of education outcomes that directly affect customer orientation. FM providers should present the solutions with specialized management to reduce the management load and manage complex functions with predictable costs to enhance customer services.

In the case of the hospital segment, the research results recommend providing management, technological, quality, strategic, function-characteristic, and economic factors responsively, which have been ranked on a high influencing level by mean analysis. Moreover, previous research and this research results, including healthcare business trends, suggest that FM providers present the specialized management solution to save management load and time and ensure better responsibilities and accountabilities for helping them to improve and focus on the company's core competencies.

The last are other segments. The research results recommend providing management, quality, technological, economic, and strategic factors responsively, ranked on a high influencing level by mean analysis. FM providers could apply outsourcing theories to TCE and core competency theories to help them manage and increase quality with cost reduction to benefit responsiveness and procure higher competency.

Recommendation by the group of factors, the department store, office, and hospital segments prioritize strategic factors over the education segment. Also, function-characteristic factors have influenced the office and hospital segments more than the education ones. In the office segment, they prioritized the influencing of economic and quality factors more than the department store segment. Furthermore, the office segment prioritized influencing strategic and management factors. Therefore, if the FM solution is the best in providing management benefits, presenting to the hospital segment can be a stronger influence than a department store, hotel, and other segments, including the office segment more influence than the hotel segment. The hospital segment focuses on technological factors more than the department store and education segments. Therefore, the technological solution could be aligned with the hospital segment effectively. Moreover, environmental factors should be the last consideration for the education segment, which has less influence than the other five segments significantly.

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