

# **Criteria Affecting the Selection of Logistics Service Provider for Retail Small and Medium Enterprise in Thailand**

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## **Abstract**

Small and medium enterprises (SMEs) in the retailer business are important for Thailand. It is one of the driving forces of the country's economic and social development. As a result, the retail business is more competitive both in terms of product quality and reducing lead time of customer responsiveness. The organization has a great management of logistics which have a comparative advantage. Many organizations usually choose outsourcing company to manage their logistics activities. Because logistics providers have more resources, experience, and efficiency than their own. The objective of this paper is to propose criteria for selecting the logistics service provider to the small and medium enterprises in the retail. The beginning, literature reviews were searched and verified concerning the criteria from the related retail industry. Then, the researcher ranked the frequency of the decision criteria discussed in descending order. The top 5 from 89 criteria are Cost/Price, Service quality, Financial Performance, Delivery Performance, and Information technology/System. In this paper, the selected criteria from the top 20, the first to eleventh criteria would be the highest frequencies, respectively. The others would be considered appropriate due to the few frequencies of duplicate criteria. The result from this paper shows that there are 8 main criteria and 5 sub-criteria to suggest the small and medium enterprises in the retail. The criteria would be applied for weighting by Analytic Hierarchy Process (AHP) is one of Multi Criteria decision making method that paper present sample weighting as a guide for those interested in education and the organization needs to be used to rank the alternative of logistics service provider.

## **Keywords**

Criteria; Multi Criteria decision making; AHP; Logistics Service Provider; Outsource;

## **1. Introduction**

Now a day, the gross domestic product in Thailand has increased because of the global economic recovery. In addition, the company develops of the selling model for meeting the increasing competition of domestic business. Small and medium enterprise (SMEs) in the retailers grew by 5.9 percent in the first quarter and 6.0 percent in the second quarter of 2016, expanding at the fourth rank in all categories. In the retail industry has a competition to rapid meeting the customer requirement. Logistics management is important to the organization because it is part of the supply chain. Which is the process of planning, implementing, and controlling the efficient, effective flow and storage of goods, services, and related information from point of origin to point of consumption for the purpose of

conforming to customer requirements (Council of Logistics Management, 1991). Logistics activities consist of many activities, most of which focus on transportation and storage. Transportation is moving resources from one location to another location. The role of transport in the supply chain is to focus on the movement of product from the seller to the consumer, which must be satisfied with the right time and the quality of the goods. The storage is managing the area and resources related to keeping the product and material in perfect condition before delivery to the customer with the lowest cost. Many organization uses outsourcing to manage their logistics. Outsourcing also participates in logistics activities such as connecting information, responsibility for the risk that may occur under the contract. Outsourcing can be supporting the resources and expert personnel for improving problem and reducing risk in logistics process (Sheikh and Rana, 2012). The decision to selectively provide logistics are critical in many organizations. This has a long-term impact on the costs and performance associate of logistics. So, the organization must decide on the selection of efficient logistics service providers.

Therefore, decision criteria are critical for selection of logistics providers, resulting in an analysis of the rank of alternatives based on the multiple criteria decision-making method. The objective of this paper purposed is to propose the criteria that affect the selection of logistics service providers. Especially in small and medium enterprises in the retail business from Literary Review and frequency ratings of adoption decisions. Also, offers an example of the application of decision criteria that have been used to weight importance by the AHP method to the guide for those interested in education and small and medium retail organizations, which want to rank the alternative of logistics providers in the future. The remainder of this paper is arranged as follows. In the next section, it Literature Review. Later in section 3, Methodology. In section 4, it reported a result of criteria and weighting. And in section 5, it presents the conclusion of the study.

## **2. Literature Review**

### **2.1 Outsourcing**

Logistic service providers have referred in many paper, Ogorelc 2007 said that using outsourcing is not a new strategy but it became more popular and steadily over the past year because of the complexity and severity of the global competition. The Leading companies were challenged in their logistics network management concerning the customer service. The use of logistics providers was the use of external logistics capabilities rather than the operation of the organization itself. This research proposed the perspective about the overall organization of the management from logistic provider, the importance of Logistics Capabilities and the current status of European Logistics Providers. They assumed that the transportation providers and other logistics activities is a key factor in the competition, which effects to the market share, the transportation costs and the profitability of the organization. Therefore, the executive should cooperate with the logistics service provider. Although the use of logistics service providers is likely to be good, they should be evaluated the worthiness and performance consistently. It is very necessary for countries becoming to be new members in the European Union. In many developed countries often used the external service providers to manage their logistics management. It can increase more competitive advantage in the market. In the other hand, many developing countries tried studying using the external service providers for handling the logistics reorganization in the future Kalinz ( 2015) presented the procedure for rearranging the supply chain performance of the enterprise, Mukwano, Uganda by gathering and comparing literature reviews in the field of developed countries. The purpose was to find the new process for industry improvement in the future. The result showed that the outsourcing is very effective to the organization because it can reduce cost of employment. In addition, an outsourcing has more capability in logistics operation because of their specialist compared with the capability of the company. Patil and Dolas (2015) told that the last few years ago, many industries have encountered challenge of the supply chain and logistics management competition in the field of customer responsiveness consisting of the operation improvement, reliability, lead-time reduction, and cost controlled by the third-party logistics service providers ( 3PL) . They have more resources and experience in practices than the enterprise concerning the warehouse, inventory, and transportation management. This research offered the role of third-party logistics service providers in the supply chain by dedicating the association between the supply chain and third-party logistics service providers using technologies, for instance, Enterprise Resource Planning (ERP), Electronic Data interchange (EDI) and E-business.

### **2.2 Outsourcing Selection Criteria**

In the selection of the logistics service provider most to focus on the price and performance of the providers. But in fact, there are many factors involved. Jharkharia et al. (2007) presented the results of example indicate that compatibility between the user and the provider companies is the most important determinant, which influences the

final selection process. In addition, the paper reviewed the papers to the selection of logistics service providers. In the top 20 ranks such as price, reliability, service quality, and on-time performance were used. Göl et al. (2007) proposed the criteria for selection of logistics services provider from a Turkish automotive company. The objectives will help establish the criteria for third-party logistics service providers selection. Which summarized as follows: integration, optimization, operation, and performance / quality. The result a total of 27 criteria were considered with respect to the general company considerations, capabilities, quality, client relationship, and labor relations of the third-party logistics providers. Knemeyer et al. (2005) presented paper has purposed a comparison of users and providers of third-party logistics service with respect to relationship marketing elements, such as trust and communication, as well as relationship marketing outcomes, such as retention and recovery. the result indicates statistically significant differences between third-party logistics users and providers across eight of nine relationship marketing elements, with the lone non-significant comparison involving the communication construct. There also statistically significant difference between third-party logistics users and providers for each of the four relationship marketing outcomes. Qureshi et al. (2008) develop an integrated model, in order to identify and classify, key criteria, and to study their role in the selection process of third-party logistics service providers for shippers' logistics need. The result is modeling helps to identify and classify the criteria. Which may be further used, to identify the potential third-party logistics service provider. The importance criteria like quality of service, operational performance, financial stability, optimum cost, and surge capacity are found as the linkage criteria. Hwang et al. (2016) study was to identify the key third-logistics service provider selection criteria for the integrated circuit (IC) manufacturing industry in Taiwan. The result shows that performance is the most important criterion group, followed by cost, service, quality assurance, intangible and information technology. At the detailed sub-criteria level, document accuracy, problem-solving capability, continuous cost reduction, value-added services and associated cost control capability are the top five criteria.

### **2.3 Multiple Criteria Decision Making**

The outsourcing was usually selected by Multiple Criteria Decision-Making methodology. There are many tools for making a decision depending on the different decision criteria based on the purpose of the problem. Mahmoodzadeh et al. (2007) supported a new procedure to select the scheme by considering the criteria comparison for investment. The criteria they used were net present value, rate of return, benefit cost analysis, and payback period. Then, Analytic Hierarchy Process (AHP) was used to be a tool for analysis along with the theory of ambiguity score for qualitative assessment. They eliminated the bias of decision makers by pair-wise comparison method. After that, TOPSIS would be used to evaluate the best priority of six investment alternatives. Likewise, Perçin (2009) supported the third-party alternative analysis of Turkish automotive supplier enterprise called XYZ using Analytic Hierarchy Process (AHP) calculating weights and using TOPSIS for ranking the alternative. Ranking would be set by MCDM methodology, which was decided by three main criteria: the strategic, business and risk factors. There were 5 alternative companies, A1 to A5. The result showed that XYZ enterprise had selected A1 to be the best outsourcing of logistics services since the score was the top rank. Bottani and Rizzi (2006) suggested that the framework of logistics service providers have three processes. The first process was determining criteria for consideration. Another was selecting the logistics service providers based on qualitative criteria. The last was the selection of logistics service providers as appropriate. The research was used in the case study of Dairy industry in Italy by adopting the framework into its operation. The selection of logistics service providers is based on six experts to initially make an assessment from the qualitative information using fuzzy logic including 12 criteria and 3 alternatives, A1 to A3. Then, using TOPSIS was used to calculate the final score, showed that A3 alternative is the best. Wanitwattanakosol and Sopadang (2010) proposed Multiple Criteria Decision Making (MCDM) methodology to select the effective material vendor including three parts: the preliminary screening of sellers, scope of analysis of Fuzzy AHP method, and using Stochastic fuzzy method for selecting the best alternative. This method also improved understanding of how ambiguity in the judgmental ratio that may affect to all alternatives, led to the best solution. There are 4 main criteria and 10 sub-criteria evaluated 8 material vendors, then they would be cut off from 8 to 3 vendors. In this case, the stochastic analysis was used for the order of preference of the three vendors by considering an uncertainty in the input data. The method could calculate the overall weight variability of AHP as well as the uncertainty of AHP behavior by using Monte Carlo simulation for finding out which method appropriate with the problem. Kahraman et al. (2003) referred that using Fuzzy AHP to select the most potential supplier companies to meet the needs of the enterprise consistently and acceptable price. The possible criteria gained by inquiry from the purchasing managers of companies in Turkey for comparing all suppliers. The general criteria had divided into 4 kinds consisting of Vendor criteria, Product Performance Criteria, Service Performance Criteria, and Cost Criteria. The alternative companies in this research are FXM, EXB, and DXR. FAHP method was used for problem-solving because human error might be occurring when the score was defined. The result was shown; FXM

obtained the most score in every analogy.

### 3. Methodology

We have considered the criteria for selection of logistics service providers. There are 2 steps: 1) we screening to the most useful criteria in papers and grouped to the relation of each criterion. 2) we have examples weighting of the criteria in a case study by using the AHP method. The details of each step are as follows:

#### 3.1 Data Collect

The data collecting started to review 12 literatures in logistics service provider to consider the criteria for Small and medium enterprises in the retailer business. All of the literatures review are published in international journals and have the high impact factor for determining reliability of the criteria. The 89 criteria were selected, the top 20 criteria were arranged from frequently being used in the literatures for selecting the most useful criteria. After that we have interviewed Logistics and Supply chain management experts in a small and medium enterprises in the retailer business to consider the appropriate criteria that could consider the best logistics service provider. Then, we group of criteria by consider the meaning of each criterion. In grouping, we refer to a priority of the criteria based on the AHP method. The primary criteria were selected and weight important to rank the alternatives by MCDM later.

#### 3.2 Analytic Hierarchy Process

The weighting can be used in several methods depending on the decision maker. We use the Analytic Hierarchy Process (AHP) method as a popular. It is recognized as an efficiency to weighting. AHP is one of the tools for analyzing multiple criteria decision making. It was invented by Thomas L. Saaty in 1970. The advantage of AHP is used to multi-criteria variables in decision making that relate to quality and quantitative data. It is not complicated and designed to reflect the priorities of the criteria. That are below the level are Sub-criteria. Figure 1 show the priorities of the criteria.

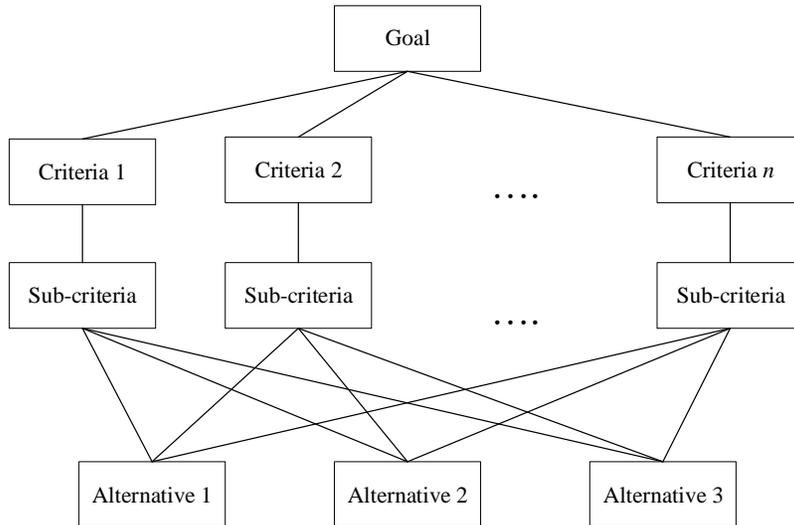


Figure 1. The priorities of the criteria

AHP used pairwise relative comparison for criteria and alternative weighting in the matrix. To make tradeoffs among the many objectives and many criteria, the judgments that are usually made in qualitative terms are expressed numerically. It's simply assigning a score out of a person's memory that appears reasonable, one must make reciprocal pairwise comparisons in a carefully designed scientific way. The Fundamental Scale used for the judgments is given in Table 2. Judgments are first given verbally as indicated in the scale and then a corresponding number is associated with that judgment. The vector of priorities is the principal eigenvector of the matrix. This vector gives the relative priority of the criteria measured on a ratio scale. That is, these priorities are unique to within multiplication by a positive constant. However, if one ensures that they sum to one they are then unique and belong to a scale of absolute numbers.

Table 2. 9-Point Hedonic Scale

9-Point Hedonic Scale	
9	Like Extremely
8	Like Very Much
7	Like Moderately
6	Like Slightly
5	Neither Like nor Dislike
4	Dislike Slightly
3	Dislike Moderately
2	Dislike Very Much
1	Dislike Extremely

Associated with the weights is an inconsistency. The consistency index of a matrix is given by Consistency Index (*CI*). The consistency ratio (*CR*) is obtained by forming the ratio of *CI* and the appropriate one of the following set of numbers shown in Table 3, each of which is an average random consistency index (*RI*) computed for *n* 10 for very large samples. They create randomly generated reciprocal matrices using the scale 1/9, 1/8, ..., 1/2, 1, 2, ..., 8, 9 and calculate the average of their eigenvalues. This average is used to form the Random Consistency Index *RI*. The equation used to validate the consistency rate:

- 1) The consistency Index (*CI*)

$$CI = \frac{\lambda_{\max} - n}{n - 1} \quad (1)$$

- 2) The consistency Ratio (*CR*)

$$CR = \frac{CI}{RI} \quad (2)$$

Table 3. Average Random Index (*RI*) (Saaty, 2008)

n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
RI	0	0	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.49	1.51	1.48	1.56	1.57	1.59

It is recommended that *CR* should be less than or equal to 0.10. Inconsistency may be thought of as an adjustment needed to improve the consistency of the comparisons. But the adjustment should not be as large as the judgment itself, nor so small that it would have no consequence. Thus inconsistency should be just one order of magnitude smaller. On a scale from zero to one, the overall inconsistency should be around 10% . The requirement of 10% cannot be made smaller such as 1% or 0.1% without trivializing the impact of inconsistency.

## 4. Result

### 4.1 Criteria Result

The result of collecting data and considering desire of the small and medium enterprises in the retailer business show that the top 20 criteria were separated to 13 criteria. They were the most appropriate to use in the small and medium enterprises in the retailer business. The arranged criteria were selected show in the table 3. We group the criteria and rank the important by AHP. There are 8 main criteria and 5 sub-criteria were shown in the Figure 2. And the definition of each criteria were shown in the table 4.

Table 3. Frequency of criteria in 12 papers

Criteria	Frequency	Göl et al. (2007)	Jharkharia et al.(2007)	Liu et al. (2011)	Yang, X. (2014)	Jayaram et al. (2010)	Knemeyer et al. (2005)	Qureshi et al. (2008)	Rajesh et al. (2011)	Hwang et al. (2016)	Efendigil et al. (2008)	Bottani et al. (2006)	Chan et al. (2006)
Cost /Price	12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Service quality	10	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	
Financial performance	8	✓	✓	✓	✓	✓		✓		✓		✓	
Information technology /Systems	7	✓	✓	✓				✓		✓		✓	✓
Delivery performance	7		✓	✓		✓		✓	✓	✓	✓		
Reputation of the company	7	✓	✓	✓			✓	✓	✓	✓			
Capability	6	✓	✓		✓			✓			✓		✓
Experience in the same industrial	4	✓	✓	✓						✓			
Reciprocity /Communication	4		✓				✓	✓	✓				
Performance	4		✓		✓					✓		✓	
Flexibility	3								✓	✓		✓	
Flexibility operation /delivery	2		✓					✓					
Flexibility billing /payment	2		✓		✓								

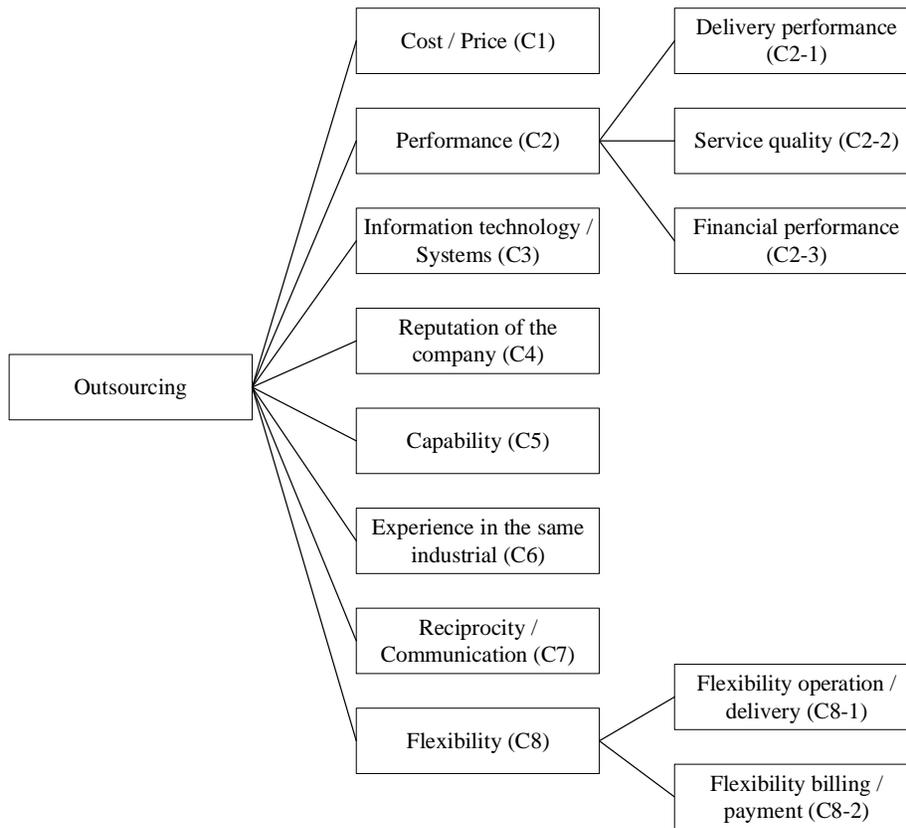


Figure 2. The priorities of the outsourcing selection criteria

Table 4. Criteria description

<b>Criteria</b>	<b>Code</b>	<b>Description</b>	<b>Reference</b>
Cost / Price	C1	It refers to the total cost of logistics outsourcing, which should be minimum.	Göl et al. (2007), Jharkharia et al. (2007), Qureshi et al. (2008), Knemeyer et al. (2005), Hwang et al. (2016)
Performance	C2	Provision of periodic evaluation of the performance of the provider enables the two parties to identify the gaps in service. On-time shipments, inventory accuracy, shipping errors, reduction in cash-to-cash cycle, logistics cost reduction, and reduction in customers' complaints may be used as the most important performance measures in logistics outsourcing.	Jharkharia et al. (2007), Hwang et al. (2016)
Delivery performance	C2-1	Two dimensions of PMD, namely "speed" and "reliability", are important for the satisfaction of the user.	Jharkharia et al. (2007), Qureshi et al. (2008), Hwang et al. (2016)
Service quality	C2-2	Quality of the provider includes many aspects such as on-time delivery, accuracy of order fulfillment, frequency and cost of loss and damaged, promptness in attending customers' complaints, commitment to continuous improvement, etc.	Göl et al. (2007), Qureshi et al. (2008), Hwang et al. (2016)
Financial performance	C2-3	A sound financial performance of the provider ensures continuity of service and regular upgrading of the equipment and services, which are used in logistics operations.	Göl et al. (2007), Qureshi et al. (2008), Hwang et al. (2016)
Information technology / Systems	C3	The advanced IT capabilities of a provider help in reducing uncertainties and inventory level. In some cases, the providers may allow the users to take advantage of their advanced IT capabilities. In such cases, the user companies need not invest in advanced IT capabilities just for the sake of tracking of goods and raw materials.	Göl et al. (2007), Jharkharia et al. (2007), Qureshi et al. (2008), Hwang et al. (2016)
Reputation of the company	C4	The reputation of a provider includes many aspects such as on-time delivery, accuracy of order fulfillment, frequency and cost of loss and damage, promptness in attending customers' complaints, commitment to continuous improvement, etc.	Göl et al. (2007), Jharkharia et al. (2007), Qureshi et al. (2008), Knemeyer et al. (2005), Hwang et al. (2016)
Capability	C5	The ability is the relationship between the logistics provider and the user, and involves their coordination to achieve common objectives. Abilities can be referred to the	Göl et al. (2007), Jharkharia et al. (2007), Qureshi et al. (2008)

		performance of the business strategy, technology capability, company culture, characteristic of the other logistics service provider, etc.	
Experience in the same industrial	C6	Prior experience of the provider in the product line of user is the added advantage to the user	Göl et al. (2007), Jharkharia et al. (2007), Hwang et al. (2016)
Reciprocity / Communication	C7	Reciprocity, or a mutual exchange between parties, is another relationship element. More specifically, some have argued that two-party relationships can be defined by what the two companies provide each other, the resources that they distribute, and the exchange that takes place.	Qureshi et al. (2008), Knemeyer et al. (2005)
Flexibility	C8	Flexibility, responsiveness, system flexibility index, early notification of disruptions, responsiveness to unforeseen, responsiveness to unexpected problems, time response capability, capability to quantitative change of demand, capability of expending, response capability to consumer's change, ability in handling changes of environment, capability to handle specific business requirements, capacity to accommodate and grow the client's business, ability to meet future requirement, convenient to use, ability to meet of exceed promises	Jharkharia et al. (2007), Hwang et al. (2016)
Flexibility operation / delivery	C8-1	Flexibility in operations and delivery may enable the user to give customized service of to its customers, particularly in special .nonroutine requests	Jharkharia et al. (2007), Qureshi et al. (2008)
Flexibility billing / payment	C8-2	Flexibility in billing and payment conditions increases good will between the user and the provider.	Jharkharia et al. 2007)

#### 4.2 The result example of weighting by AHP

We performed an example of decision making criteria for weighting to guide people who are interested in adopting these criteria. The example was calculated by the Analytic Hierarchy Process (AHP) method based on the Multi-Criteria decision making (MCDM) concept to compare the criteria by pair wise comparison followed by table 5. Each pair was weighted depended on the personal preference, but in fact, it depends on the decision makers adopting the concept to their organization. The weight of each criterion may vary according to the needs of the organization.

Table 5. Main criteria pairwise comparisons.

	C1	C2	C3	C4	C5	C6	C7	C8
C1	1	2	4	8	3	5	6	7
C2		1	3	7	2	4	5	6
C3			1	5	1/2	2	3	4
C4				1	1/6	1/4	1/3	1/2
C5					1	3	4	5

<b>C6</b>						1	2	3
<b>C7</b>							1	2
<b>C8</b>								1

Note: Consistency Index (CI) = 0.041; Average Random Index (RI) = 1.41; Consistency Ratio (CR) = 0.029;

The criteria were shown in table 5 composed of 8 main criteria: C1-C8. We only presented the value of one side metric because another side came from pair wise comparison. The four most important criteria were Cost / Price, Performance, Capability, and Information technologies / Systems. In addition, the weights of main criteria were shown in table 6.

Table 6. Weight of main criteria

<b>Code</b>	<b>Criteria</b>	<b>Weight</b>
C1	Cost / Price	0.328
C2	Performance	0.232
C3	Information technology / Systems	0.107
C4	Reputation of the company	0.023
C5	Capability	0.159
C6	Experience in the same industrial	0.071
C7	Reciprocity / Communication	0.048
C8	Flexibility	0.033

In terms of important weighting of the sub-criteria must be separated from the main criteria by comparing only the sub-criteria in the same group. This article consisted of two groups of sub-criteria: Performance and Flexibility. The comparison of decision criteria using pair wise comparison of the sub-criteria was shown in Table 7; Performance criteria. And Table 8 was the group of Flexibility criteria.

Table 7. Sub criteria pairwise comparisons of Performance criteria

	<b>C2-1</b>	<b>C2-2</b>	<b>C2-3</b>
<b>C2-1</b>	1	1/5	3
<b>C2-2</b>		1	7
<b>C2-3</b>			1

Note: Consistency Index (CI) = 0.032; Average Random Index (RI) = 0.580; Consistency Ratio (CR) = 0.056;

Table 8. Sub criteria pairwise comparisons of Flexibility criteria

	<b>C8-1</b>	<b>C8-2</b>
<b>C8-1</b>	1	3
<b>C8-2</b>		1

Note: Consistency Index (CI) = 0.000; Average Random Index (RI) = 0.000; Consistency Ratio (CR) = 0.000;

The summation of weights of each sub-criterion must be equal to the weight of the main criteria in that group. For example, the total weight of C2-1, C2-2 C2-3 must be accordingly equal to the weight of C2.

Table 9. Weight of sub-criteria

<b>Code</b>	<b>Sub-criteria</b>	<b>Weight</b>
C2-1	Delivery performance	0.044
C2-2	Service quality	0.169
C2-3	Financial performance	0.019
C8-1	Flexibility operation / delivery	0.025
C8-2	Flexibility billing / payment	0.008

In our mindset, a Cost/Price criterion was the most importance. The most organization had paid attention to their financial value because each organization has different financial potential. This criterion usually conflicted to the Performance criteria in term of the value of service performance compared to price. Therefore, the Performance was prioritized to the second-ranking and could be categorized to 3 sub-criteria: Delivery performance, Service quality,

and Financial performance. In the second group, we selected Service quality to be the most important sub-criteria. The next rank was Delivery performance and Financial performance. We had agreed that a good logistics service provider could empower the organization concerning over the operational efficiency and service reliability. The Capability was the third-ranking criteria involving to the resources of the organization, for instance, freight trucks, warehouse equipment, and related personnel. At last, the Information technology / Systems criteria was the fourth rank because nowadays, the technologies were adopted into the organization's operation continuously. It could facilitate the operation and give more convenient in the communication between the organization and the logistics provider to be more effective. The other criteria would be the additional components that advocated the overall decision making to be more complete, such as Flexibility describing the stretch in various aspects of logistics services that could be provided to the organization.

#### **4. Discussion**

In this paper, we proposed only some criteria for selection of logistics service providers based on literature review. Unlike the article by Jharkharia et al. (2007), which offered a review of the relevance of the selection of global logistics providers and ranked the top 25th criteria. Some criteria might not be appropriate for small and medium enterprises in the retail business in Thailand because of the differences in cultural resources, including the lifestyle of people in Thailand.

The criteria obtained from the article would be supported the decision maker to have the basis criteria for decision making. In fact, the selection of logistics service providers must consider the decision criteria from the requirements and the characteristics of the organization to provide the most suitable logistics service providers. Therefore, this paper was only providing preliminary information to have a decision support. Furthermore, it can also be used as a basis for assembling the other criteria.

#### **5. Conclusion**

The decision criteria used for selection of logistics providers for small and medium-sized enterprises in the retail business is very important because they can reflect the needs of the organization that lead to the effective result. The objective of this research is to propose the decision criteria for selecting the third-party logistics service providers in Thailand. The 89 decision criteria were derived by reviewing 12 relevant kinds of literature, which were published in the international journals. We had arranged the frequency rely on the article that had referred repeatedly and also inquiries from the entrepreneurship of the retail. In addition, the criteria would be validated by academic, logistics and supply chain management for reliability intensification. Eventually, 8 main criteria and 5 sub-criteria were selected to be final decision criteria. We then performed an example of weighting depending on the personal preference using the Analytic Hierarchy Process (AHP) based on the Multi-Criteria decision making (MCDM) concept. As a matter of fact, tools selection or weighting in decision making depend on many factors, for instance, the faced situation, problem, objective, and the needs of each organization. The given weighting examples presented that the four most important criteria are Cost / Price, Performance, Capability, and Information technologies / Systems at 0.328, 0.232, 0.159 and 0.107 weighted scores respectively. Consequently, the criteria from the research can be applied to the small and medium-sized enterprises in the retail business for selection of logistics service providers. People who interested in this strategy should adapt or adjust the criteria to suit your organizational characteristics. We will then apply the decision criteria to a retail business in Thailand to prioritize the needs of the organization and select future logistics providers.

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