# Proceedings

**รายงานการนำเสนอผลงานวิจัยในการประชุมวิชาการระดับนานาชาติ**

**International conference on “Implications of Research in Business, Economics, Management Social Sciences and Humanities (IRBEMH-MAY-2017)**

**โดย**

**อาจารย์ธนะสาร พานิชยากรณ์**

**วิทยาลัยโลจิสติกส์และซัพพลายเชน**

**ได้รับงบประมาณสนับสนุนจากกองทุนพัฒนาบุคลากร**

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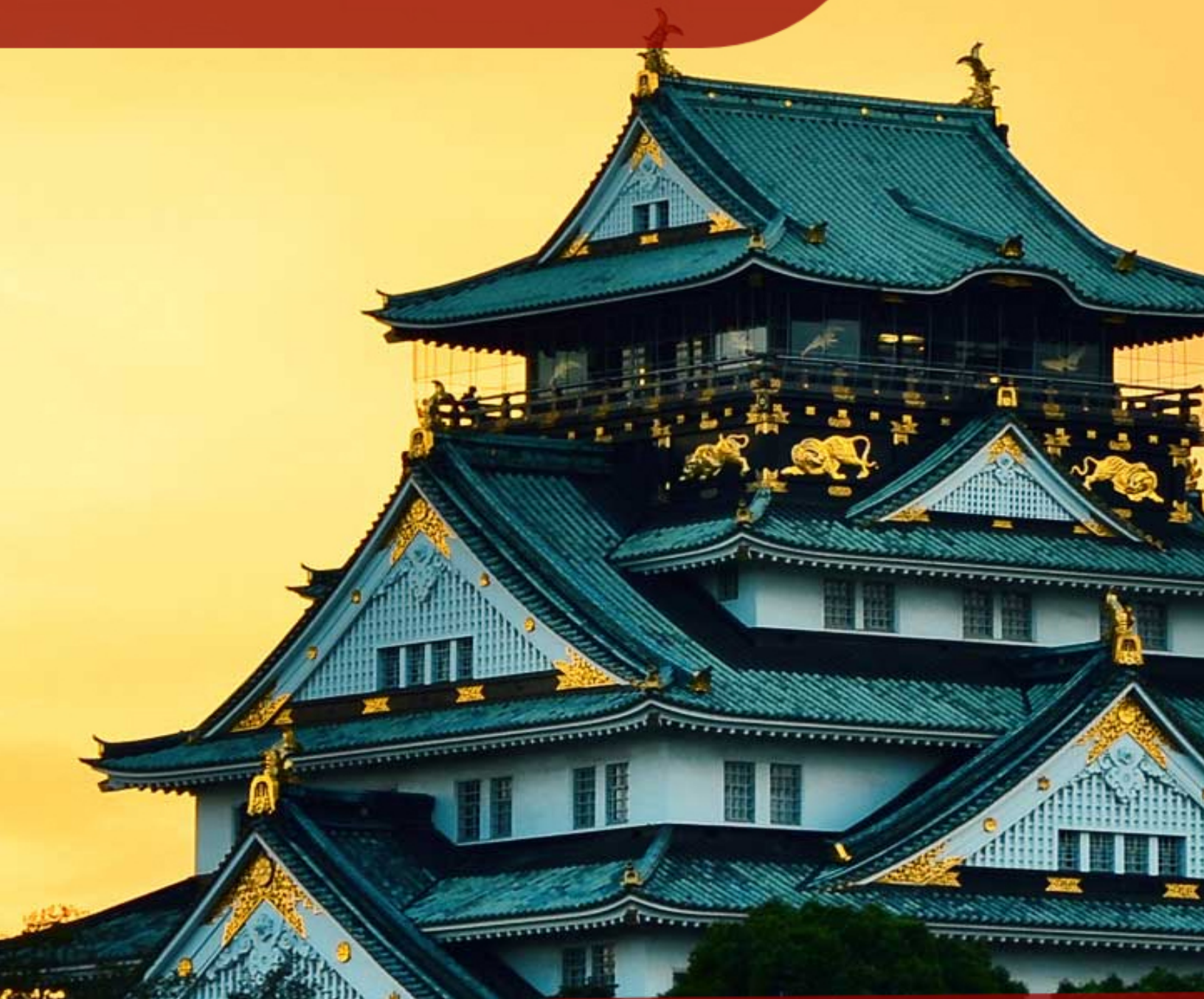
# CONFERENCE BOOK OF ABSTRACT PROCEEDING



**Venue: Osaka International Convention Center**
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**Date: May 15-16, 2017**

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Osaka, Japan | May 15-16, 2017
ISBN: 978-602-6427-01-4
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**Dr. Sukri Palutturi**

"International Conference of Akademika Nusa Internasional " is a platform that thrives to support the worldwide scholarly community to analyze the role played by the multidisciplinary innovations for the betterment of human societies. It also encourages academicians, practitioners, scientists, and scholars from various disciplines to come together and share their ideas about how they can make all the disciplines interact in an innovative way and to sort out the way to minimize the effect of challenges faced by the society. All the research work presented in this conference is truly exceptional, promising, and effective. These researches are designed to target the challenges that are faced by various sub-domains of the social sciences, business and economics, applied sciences, engineering and technology, health and medical sciences.

I would like to thank our honorable scientific and review committee for giving their precious time to the review process covering the papers presented in this conference. I am also highly obliged to the participants for being a part of our efforts to promote knowledge sharing and learning. We as scholars make an integral part of the leading educated class of the society that is responsible for benefitting the society with their knowledge. Let's get over all sorts of discrimination and take a look at the wider picture. Let's work together for the welfare of humanity for making the world a harmonious place to live and making it flourish in every aspect. Stay blessed.

Thank you.

Dr. Sukri Palutturi
Conference Chair
Email: conferencechair.ani@gmailcom

# KEYNOTE SPEAKER

**Dr.Chitpong Ayasanond**

Dr.Chitpong Ayasanond is the Director of Master of Business Administration in (M.B.A. Logistics and Supply Chain Management) from College of Logistics and Supply Chain Suan Sunandha Rajabhat University, Bangkok, Thailand.

Logistics is an important knowledge-based economic activity that has a major role in the world economy. The term Logistics is sometimes used almost synonymously with the term Supply Chain. A classic definition of Logistics associates it with everything involving the planning, the organization and running activities that provides customers with goods or services. Thailand is a country with an advantage in transportation and logistics due to its location at the center of the region.
However, there are significant issues such as concrete government support for the development and creation of a logistics and supply chain network. Include systematic and serious support and preparation for logistics personnel and service providers. This Academic Conference will be one of the driving-force to provide knowledge management of industry operators.

# CONFERENCE SECHDULE

**ANISSH-2017**

**Venue:: Osaka International Convention Center 5 Chome-3-51 Nakanoshima, Kita Ward, Osaka, Osaka Prefecture 530-0005, Japan**

**Time: Registration & Kit Distribution (8:15 am - 9:00 am)**
**Day: Monday**
**Date: May 15, 2017**

**Venue: Room 1**

| | |
|---|---|
| 09:00 am - 9:15 am | Introduction of Participants |
| 09:15 am - 09:30 am | Inauguration and Opening address |
| 09:30 am - 9:45am | Keynote Speech-**Dr. Chitpong Ayasanond**- Suan Sunandha Rajabhat University, Thailand |
| 09:45 am - 10:00 am | Grand Networking Session |

**Tea/Coffee Break (10:00 am - 10:30 am)**

**DAY 01 Monday (May 15, 2017)**

**First Presentation Session (10:30 am - 12:00 pm)**

**Venue: Room 1**
**Session Chair: Dr Chitpong Ayasanond**

| Presenter Name | Manuscript Title | Paper ID |
|---|---|---|
| **Track A: Social and Humanities Studies** | | |
| Natthakan Roothamnong | The Survey of High School Students Behaviours Towards International Programme in the Universities, Case Study of High School Students in Salaya Sub-District, Phutthamonthon District, Nakornpathom Province | IRBEMSH-057-ANI111 |
| Thipjutha Deedom | Factor of Religious Tourism for Asian Tourist who Speak English, A Case Study of the Grand Palace Bangkok, Thailand | IRBEMSH-057-ANI118 |
| Kanikar Sripanomwan | The Development Transportation with Lean Management; A Case of Van Transportation | IRBEMSH-057-ANI120 |
| Hathaipun Soonthornpipit | The Development of the Law Relating to Registration of the Machinery in ASEAN Community | IRBEMSH-057-ANI126 |
| Chattrarat Hotrawaisaya | Study Van Routes and Create a form of Transportation: A Case Study Nakorn Phathom Education Center, Suansunandha Rajabhat University | IRBEMSH-057-ANI112 |
| Salisa Hemmapan | The Influence Factors of Freight Forwarders Selection Criteria among Shipper in Thailand | IRBEMSH-057-ANI114 |
| Sasiwimon Wongwilai | Study lime supply chain in Thailand | IRBEMSH-057-ANI115 |

**Lunch Time: (12:00 pm - 01:00 pm)**

**DAY 01 Monday (May 15, 2017)**

**Second Presentation Session (01:00 pm - 02:30 pm)**

**Venue: Room 1**
**Session Chair:Edy Suandi Hamid**

| Presenter Name | Manuscript Title | Paper ID |
|---|---|---|
| Bunyaporn Phoothong | Feasibility Study for the Establishment of the Restaurant Business in the Market: A Case Study of the Market, Dusit Bangkok Thailand | IRBEMSH-057-ANI103 |
| Duangjai Jandasang | The Development of Logistics and Supply Chain to Increase the Export Value of Shrimp Farming Beautiful Thailand, Samut Prakan | IRBEMSH-057-ANI104 |
| Anuch Nampinyo | The Market Factors that Influence the Decision to Buy the Product from the Retailer, Wattana, Bangkok, Thailand | IRBEMSH-057-ANI105 |
| Natpatsaya Setthachotsombut | Potentiality Enhancement of Supply Chain: with Agility and Resilience Capability | IRBEMSH-057-ANI106 |
| Jatturong Ploenhad | The Factors that Contributed to the Accident Transport Truck Transport Routes In Nakhon Pathom Thailand | IRBEMSH-057-ANI107 |
| Pornkiat Phakdeewongthep | The Application of Greedy Randomized Adaptive Search Procedure (GRASP) for Vehicle Routing Optimization | IRBEMSH-057-ANI108 |
| Tanasarn Panichayakorn | Factors Influencing the Reduction of Transportation Costs of Container Operators at Laem Chabang Port, Thailand Applied by AHP Technique | IRBEMSH-057-ANI110 |

**Tea Break: (02:30 pm - 02:45 pm)**

**DAY 01 Monday (May 15, 2017)**

**Third Presentation Session (02:45 pm - 04:00 pm)**

**Venue: Room 1**
**Session Chair: Dr Chitpong Ayasanond**

| Presenter Name | Manuscript Title | Paper ID |
|---|---|---|
| Edy Suandi Hamid | Human Development Index and its Factors:The Effect on Global Competitiveness Index in ASEAN | IRBEMSH-057-ANI113 |
| Wiriya Boonmalert | Factors Influencing the Enhancement of Restaurant Business for Halal Culture Tourists In Bangkok | IRBEMSH-057-ANI116 |
| Preecha Wararatchai | The participation of Ecotourism Management in Samui District, Suratthani Province | IRBEMSH-057-ANI117 |
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**DAY 01 Monday (May 15, 2017)**

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**Venue: Room 1**
**Session Chair: Dr. Sukri Palutturi**

| Presenter Name | Manuscript Title | Paper ID |
|---|---|---|
| Kamolbhibhat Chanasith | Product Development Karanda Fruit (Carissa Carandas Linn.) Sorbets and Yogurt Ice-Cream | IRBEMSH-057-ANI127 |
| Kraiwit Sinthukhammoon | The Analysis of Procurement and Inventory Policy: Steel Tank Firm | IRBEMSH-057-ANI129 |
| Varaporn Saninmool | Development of Logistics Systems for Tourism in Phutthamonthon District Nakhon Pathom Province Thailand | IRBEMSH-057-ANI125 |
| Sudarat Pimonratanakan | The Influence of the Human Resource Development through the Learning Organization that Affect the Organization Development | IRBEMSH-057-ANI130 |
| Anchalee Hiranphaet | Study, Transportation Management of Dye Products. Case Study of ABC Co. Ltd. | IRBEMSH-057-ANI122 |

**Closing Ceremony: (05:00 pm -6:00 pm)**

## Participants Registered As Listener/ Observer

The following Scholars/ practitioners who don't have any paper presentation, however they will attending the conference as delegates & observers.

**Official ID:** IRMMHS-057-MHS101A
Vikram P. Shah,M.D.
MD- Doctor of Medicine,USA

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International conference on Implications of Research in Business, Economics, Management Social Sciences and Humanities (IRBEMSH)

Full Paper Proceeding ANISSH-2017, Vol. 2- Issue. 5

ISBN: 978-602-6427-01-4

# Factors Influencing the Reduction of Transportation Costs of Container Operators at Laem Chabang Port, Thailand Applied by AHP Technique

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**Abstract.** This research shows that, in all subject areas, the majority factor comes with the fuel expenses; 42.9% of sample groups, toward influencing the reduction of transportation costs of the container operators at Laem Chabang Port, Thailand. The fuel expenses as variable costs are significantly considered to work in accounting and finance. As a result, high maritime shipping higher transportation costs, the container operators have to properly monitor these expenses under controlled conditions though. Additionally, the quarter of sample groups (approximately 25.4%) goes to the maintenance expenses similar to the fuel expenses in terms of variable costs. The maintenance costs are up, thereby driving on the transportation traffics. The preventive maintenance program would thus prevent all equipment failure before it occurs and get ready for the next round. Eventually, in the end of research, the effective optimization of transportation routing management comes up with 15.4% of sample groups. Enabling setup, routing, and route plan to be managed to avoid the empty container transportation as well using GPS technology for on time, all reduces the costs of transportation.

*Keywords*— Container operators, Transportation costs, Maritime shipping, Laem Chabang port, AHP technique

## INTRODUCTION

Shipping and goods transportation are very significant, from the past to present. The transportation has grown with the growth of the economy, social and political. The important role of transportation is the basis for encouraging resource mobilization to gain the value of business. For example, the raw materials transportation from suppliers to the manufacture factory, warehouse to the retailer and destination customers. If the container operator has a very high transportation costs (Venter, C. J., Molomo, M., & Mashiri, M., 2014) that will cause higher transportation prices as well. When the container operator can handle the transportation cost, which in the proper container operator prices. Pricing can be used to gain the competitive advantage with other container operators. Most of the transportation in Thailand is land transport. Because it is convenient, fast, safe and able to transport goods to the destination seamlessly. And to the place that is easily determined (Door to Door) (Yung-yu TSENG and Wen Long YUE (2005).

With the competitive conditions, trade, transportation business in domestic and international violence intensified. Therefore, the transport operators are trying to adjust, to develop the transportation services to cost-effective or less expensive and in order to increase services competency. Transportation management system and costing management are very important factors in the container transport operators business potential. Trends in the number of journeys for transportation have increased steadily every year due to the increasing of services demand and the result of the government's policy to push Thailand to become a hub for transportation and logistics. That consists of three main factors: (1) lowest cost; (2) quick response to customer; (3) safety and reliability of the system must always be trusted by customers. The number of container truck trips will exclude empty containers trip (backhaul) if the operators are still not able to fully utilize container trucks, which means that economic losses are incurred by the transport operator.

The trucking loss in one year was a great deal of these issues. To assess the situation research, by using the factors to reduce the container transportation cost and increasing the container transportation (reduce backhaul trip) the transport model of the container will be transported by a trailer, which will have two characteristics, the short tail and long tail. But today it uses a longer tail, because it can carry two containers of 20 feet in two containers and the transport will take the cargo from Laem Chabang Port to ICD Lat Krabang destination and then drive back to Laem Chabang Port. The factors such as price changing, quick response to the customers, safety and reliability as an alternative to shipping service customers. In order to have a cargo container in return trip to Laem Chabang Port, it will increase the revenue generated and reduces the cost of backhaul trip. For the trends of oil pricing in the world market are expected to remain high and upward impact to the business. In the short term, concerning about supply disruptions has been called for OPEC producers to increase crude oil production. It is a problem affecting all countries including Thailand. At present, in Thailand, the increasing demand for energy continues, fuel consumption remains the main factor whether for the private vehicles, mass transit or transport industry.

Therefore, alternative energy in the transport sector should be used as a factor in reducing container transport costs. From all of these issues, it is up to the educator to investigate the situation and improve or modify the cost factor of the container transport operator.

## LITERATURE AND THEORY

Providing logistics services that are tailored to the specific needs of individual clients is a boon to many, such as increasing market competitiveness. Make the organization or entrepreneur trying to find ways to reduce costs in order to survive in the long run. To focus on just managing cost effectively is not enough. The goal is to provide the right service to the customer and to find a factor in cost reduction and including new logistics services (Annelie I. Pettersson and Anders Segerstedt, 2013). This is a service that responds to customer needs. Both can effectively manage cost reduction because of the general business. The entrepreneur will consider the cost as the main and to find ways to lower costs to compete with other operators. In the market consequently, the cost of transportation is a factor of a relatively high cost. A hierarchical analysis (AHP) analysis (Doraid Dalalah, Faris AL-Oqla and Mohammed Hayajneh.,2010) is used to determine the cost factor for container shipping.

*Decision making*

Decision is a human part that could not be avoided. Because of the problem, the decision is not as easy as it sounds, because it may be complicated and make a simple solution. The wrong way to try it is not working. And importantly, that decision does not only affect the decision maker. But it also affects others, such as family, friends, business associates or even people who do not know. Good judgment is a factor to point out. Did the decision succeed in the goal? (Kahraman, C., Cebeci, U., & Ulukan, Z., 2003)

*The rational decision process*

Good decision does not depend on the decision-making process. This requires a process with steps in order to walk to the right path and successful with optimize the decision making process by using the learning rational judgment process. (Chan , F. T., Kumar, N., Tiwari, M. K., Lau, H. C. W., & Choy, K. L. ,2008)

Good decision-making processes must be as follows.

- Easy to understand
- Focus on key issues or issues.
- There is a consistency of reason.
- Can bring the decision factors that are both concrete and abstract to compare.
- The structure mimics the human thinking process.
- Make a compromise and build a referendum.
- No need for specialists to control.

*The concept of AHP is a decision-making process.*

AHP is a process (Shahroodi and Kambiz, 2012). Use diagnostics to find the reason. It has been invented since 1970 by Professor Thomas Saaty, who has been awarded a doctorate in mathematics from Yale University. AHP is a rational decision-making process by the six steps mentioned above, because AHP imitates human decision. This makes it easier to make complex decisions on issues. It will divide some elements of the problem into concrete and abstract parts and then re-arranged in chart form by grade level, then determine the number resulting from the diagnosis. In order to calculate which factor or choice has the highest priority value and how does it affect the outcome of the solution? AHP also improves the efficiency of group decision making because it helps organize the group's thinking process by consistently determining in the decision-making process and support the referendum of the group, in helping the diagnosis corresponding with more logical. This is what confirms that AHP is a powerful and reliable decision-making process for the most rational decisions. It also determines the logic for analyzing logical reasoning. This is very necessary and reason properly in the rational decision process.

There must be two features: It must be properly linked and there must be consistency between the elements. The three main principles used in the AHP process (Wang, C. Y. (2014) are: (1) principles of charting; (2) principles of prioritization; (3) Layout of the hierarchy chart (Hierarchy). Human beings have the ability to perceive objects and ideas, to give meaning to what they perceive. And to provide information on the perception of human knowledge, it is kept in mind that it separates the stored knowledge into parts. In a coherent manner, the AHP chart was invented to imitate the human decision and the element numbers in each level, the division of factors into groups. This grouping allows us to aggregate large amounts of data into categories, which makes it easy to organize the elements of the problem. And make the image of the system more clearly. The chart can be divided into several levels, depending on the complexity of the problem and each level of importance. Top level is the aim or the overall goal Example Grade chart for AHP decision making (Saaty, T. L., 2008).

## RESEARCH METHODOLOGY

The tool used in this study was a questionnaire to determine the importance of factors in cost reduction of Laem Chabang Container Operators. The primary source data was a direct from a focus population, then collected from them. The secondary data was from the study of relevant documents and research.

*Population and sample*

The research population included 10 container operators of Laem Chabang Port, the selection was selected by container operators who have more than 10 years of experience.

*Questionnaire*

The process of issuing a questionnaire to weigh the cost factor of the container transport operator was as follows.

*Step 1*: Study relevant documents and research.

*Step 2*: Questionnaire for weighting factors of cost reduction of container Operators in Laem Chabang Port.

*Step 3*: Take the questionnaire to the consultant for verification improvement.

*Step 4* : Bring the completed questionnaire to the sample, to compare factors of cost reduction of Laem Chabang container shipping operators. In this research the researcher had issued three questionnaires. The factors used in this research were asked the expert. The factors that related to cost reduction are many choices. But in order not to over complicate for this research. Only 10 factors were identified.

*Data collection*

The method of collecting data of this research paper had presented in academic papers such as thesis, textbooks, related papers, and classified into primary data, based on the questionnaire on cost factors of transport operators Laem Chabang Port container and secondary data from the various journals and related research papers.

*Data analysis*

The data obtained from the questionnaire was analyzed by a hierarchical analysis technique (AHP), with a focus on determining the relative importance of each factor in reducing the cost of the container transport operator. The Analytic Hierarchy Process (AHP) was a multi-criterion decision making method or priority of choice. When there were several criteria to consider, then it was a powerful process and easy to prioritize and let us made the best decisions. This could be used with complex decisions by using the AHP benchmarking method. Not only it helped decision makers make the best decisions but also clearly demonstrates why the choice was the best. At each level, consider the importance of the criteria on the same level by analyzing comparative criteria or pairwise comparison. According to the importance or preference table as follows:

*Table 1: Pairwise Comparison Table*

| Preference Level | Numerical Value |
|---|---|
| Equally Preferred | 1 |
| Equally to Moderately Preferred | 2 |
| Moderately Preferred | 3 |
| Moderately to Strongly Preferred | 4 |
| Strongly Preferred | 5 |
| Strongly to Very Strongly Preferred | 6 |
| Very Strongly Preferred | 7 |
| Very Strongly to Extremely Preferred | 8 |
| Extremely Preferred | 9 |

*A preliminary analysis for determine the priority factors.*

Comparison of Factors in cost reduction of Laem Chabang Container terminal from a total of 10 factors, where A was the fuel cost, B was the maintenance cost. C was the operating cost. D was the operating cost. D was the number of empty trips, E represented the transport accident. On the driver's knowledge of safe driving, G was stand for long-term transport agreements or contracts, H was stand for the proper route transport scheduling and J mistakes in transport mean creating a business partner.

*Calculation of critical weight*

*Step 1* : Bring the average value from the query priority matrix to the matrix. Comparison of factors in cost reduction of containers operators.

*Step 2*: Calculate the values obtained from step 1 to determine the weight values. It can be displayed as follows.

2.1. Calculate the sum of each score in the row of each row in the matrix under all 10 factors.

2.2. Put each number in a row of the matrix table divided by the sum of the numbers in that row.

2.3. Find the average of the numbers in each row of the row, the importance of each factor, which was the Calculation value

*Determining the Consistency of Reason*

*Step 1*: Calculate the magnitude of each factor to be multiplied by the vertical of each matrix, such as the fuel cost (0.17) value multiplied by the vertical value in the metric. The value of the maintenance cost (0.15) multiplied by the vertical value of 2 was continued and the value of the business partner (0.07) was multiplied by after that, calculate the sum in each row horizontally. Bring the significance level of each factor to the above sum calculated on each row of each factor.

*Step 2*: Calculate the value λ by summing the sum from the calculated value from Step 2 and then calculated the mean by dividing by the number of factors.

$$\frac{\sum_{1}^{N}\left(Ki/Ri\right)}{N}$$

*Step 3*: Calculate the CI calculated by taking the calculated value minus the number of factors (N) and dividing by N-1. All calculations were within the absolute sign.

$$CI = \left|\frac{\lambda - N}{N-1}\right|$$

*Step 4*: Calculate the CR by taking RI () to divide the CI calculated from Step 3. If the CR value was less than 0.1, then the data from the questionnaire was consistent

$$CR = \frac{CI}{RI} < 0.1$$

## RESEARCH RESULTS

Analytical results using hierarchical sequence analysis (AHP) based on the data analysis from the questionnaire on the cost factor of container transporters in Laem Chabang Port, by comparing the importance of each factor. The analysis of the consistency of the data has resulted in the data collected from the above questionnaire. The consistency of the data,

subsequently, the data was analyzed for comparison to prioritize each factor. The comparative analysis can be shown as follows.

*Table 2: The Importance of Cost Factors for Cost Reduction of Laem Chabang Port Container Operators.*

| Factors for Cost Reduction of Container Operators | Priority |
|---|---|
| 1. Fuel costs | 17.3 % |
| 2. Maintenance costs | 15.4 % |
| 3. Proper scheduling of transportation | 14.2 % |
| 4. Operating expenses | 12.2 % |
| 5. Accident in transportation | 8.5 % |
| 6. Safety driving skill | 8.0 % |
| 7. Creating a Business Alliance | 6.5 % |
| 8. Transportation errors | 6.4 % |
| 9. Number of backhaul | 6.0 % |
| 10. Long-term transport contract or agreement | 5.5 % |
| | 100% |

## CONCLUSION AND RECOMMENDATIONS

The results of the study found that.

1. *Fuel Cost Factors*, all respondents agreed with the idea that the fuel cost factor was a factor in reducing container transportation costs by the following methods.
   - Change the fuel system from an oil system to a shared fuel system. Or fuel system Natural gas (NGV)
   - Installation of fuel saving equipment.
   - Maintaining the engine in good condition.
   - Safe and energy-saving driving policies
   - The contract with the fuel supplier for credit and the payment period.
2. *Maintenance factors*, all respondents agreed with the idea that the maintenance factor, this is a factor affecting the cost reduction of container shipping by the following methods.
   - Inspection and maintenance by distance and duration.
   - Maintenance using genuine parts.
   - Outsource service providers are used.
   - Contract with the maintenance provider for credit and payment terms.
   - Training staff on basic truck care.
3. *Proper transport scheduling factors*, all respondents agreed with the idea that the appropriate transport scheduling factor. This is a factor affecting the cost reduction of container shipping by the following methods.
   - Planning route to the smallest backhaul transportation.
   - Planning route to be better and safer routes.
   - Technology is used to help control the truck to be in a specific route, such as GPS.
4. *Factors in operating expenses*, all respondents agreed with the idea that the cost of operating. This is a factor affecting the cost reduction of container shipping by the following methods.
   - Provide skilled staff. And there are a number suitable for the job.
   - Supply office equipment. That is suitable for use.
   - A computer is used to assist in the operation.
5. *Accident factor in transportation*, most respondents agreed with the idea of transport accidents. This is a factor affecting the cost reduction of container shipping by the following methods.
   - Install speed limit
   - Provide knowledge to build a safe driving attitude.
   - Give awards to employees who drive well. No accident
6. Factors of safety driving skill, all respondents agreed with the concept that drivers' knowledge of driving safer. This is a factor affecting the cost reduction of container shipping by the following methods.
   - Training staff on safe driving skill.
   - Policy for drivers to drive for no more than 12 hours a day, for example, to drive a shift in a 12 hour period.

## ACKNOWLEDGEMENTS

This paper would not have been possible without the contribution, the supporting, the kindness help and the encouragement of Associate Professor Dr.Luedech Girdwichai, The Chancellor of Suan Sunandha Rajabhat University Bangkok Thailand.

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