The Relationship of Information System in Logistics Process with the Reduction of Operating Costs for Exports of Small and Medium-sized Enterprises (SME)

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Abstract— The purpose of this research was to study the relationship of logistics process with the reduction of operating costs for exports of small and medium-sized enterprises (SME) in order to get the most benefit most suitable and the most economical way to run a sustainable business. A case study of logistics of small and medium-sized enterprise entrepreneurs in Pathumthani Province were studied by using questionnaires to collect 420 sets of data.

The results of the study showed that the reduction of the operating cost related to the purchase order and the information system. Respondents responded the most as entities are able to manage orders from customers by having an efficient inspection system. And the business used information systems in the flow of information through electronic processes that are ordered by customers to systematically with statistical significance at the level of 0.05

Keywords-Logistics, SME , Order processing and information system

Introduction

Transportation plays an important role in supporting the distribution of products to the market because transportation serves to move production factors from various production sources to factories. For use in the production of goods When produced as a finished product, it is stored at the warehouse. In order to deliver to the middleman until reaching the consumer at the time that the consumer wants and in a place that is convenient for consumers to buy.

Logistics management is a system that involves the distribution of goods or services, which are activities relating to the movement of goods and Service from the manufacturer To consumers Raw material preparation process And inventory of these activities Affects to increase profit if costs can be reduced Increase service levels so that consumers are satisfied Increased satisfaction[1]. At present, Thailand has trade both domestically and internationally. Because of the transportation of goods which, in transportation, still needs to consider various processes from the moment the product is delivered to the recipient. And when the product is shipped will have costs that follow resulting in the increase in costs for both small and medium sized exporters as well as a result, businesses should plan each step to choose the most suitable transportation for that business. In order not to be a waste of unnecessary expenses and also for the sustainable export business as well.

Due to the economic situation emphasizing the need to reduce logistics costs, the need to protect market share therefore focuses on higher level of customer service. In this environment, it is extremely important for formal supply chain management, especially the use of modern information systems. The advantages of using strategic management in the development of information technology contribute to the positive development of the transportation function in the entire organization or institution. The prerequisite for successful logistics management is the systematic collection of necessary business information. The complete information system is the key, helping organizations to have a competitive advantage. These advantages are reflected in the creation

of new competitive positions, lower costs and different levels of operational dependency and improved results for all transport functions within the organization. [2][3]

Objectives
To study the relationship of the logistics process regarding the reduction of operating cost according to the purchase order and the information system to the investment plan for the export business of the entrepreneur. Small and medium enterprise

Research hypothesis
The logistics process, the reduction of operations cost according to the purchase order and the information flow system are related for the export business of an operator SMEs.

Expected Outcome
To enable SMEs to choose the method that is most useful Most suitable And the most economical For sustainable business operations

I. LITERATURE REVIEW

Logistics Theory
Niwet Sriwichai has analyzed the cost of logistics. Small ceramic industry in Lampang Province[2]. The results of the research showed that The highest cost is Moving Products and Materials (44.85%) When studying further the costs of moving products and materials, it is found that this high cost comes from labor. Which if wanting to reduce costs more than this Must have a detailed study, the student can reduce the cost of activities Considering that the expenses Is it worth the benefit? Including finding methods Updated to increase the efficiency of production management. Until the business is able to control costs and be able to plan cost management appropriately And effective in carrying out further logistical activities. Krit Sittipunkul has analyzed the logistics costs in the vegetable processing industry of the Project Development Center [4]. Luang Nong Hoi using the activity base cost approach The study found that In the case of vegetable pack bags Activities with the highest logistics costs Is a bag packing activity And in the case of vegetables, do not pack bags Activities with the highest logistics costs Is a trim activity, therefore finding ways to reduce costs by using the Arena program The result of the improvement In the simulation scenario, the cost was reduced by 21,442.29 baht per month and in the raw material preparation and cutting activities, the cost was reduced by 5,290.41 baht per month. Found that there is a cost in Raw material preparation and cutting activities decreased by 8,683.63 baht per month. As mentioned above, rice Can summarize the types of industries, SMEs with high value Guidelines for solving paper sand production, transportation and packaging activities, adding new service providers and sellers, including price checking Always in the market in order to create price competition and The most reasonable price

Cost reduction
Order Processing and information Costs are costs that arise from the order process activities, beginning with the receipt of an order from the customer. Word data management Internal and external communications, purchase order, product distribution Including forecasting Future customers' needs [5].

II. METHODOLOGY

Population and sample
Population used in the study is Entrepreneurs of small and medium enterprises that export business In PathumThani Province In the total of 24,453 persons (Office of Small and Medium Enterprises Promotion, 2014)

Sample group used in the study Because they know the exact population Therefore calculate the group size Samples using the Taro Yamane formula instead of values, using the formula at the 95% confidence level. The 5% tolerance yields the sample size. Therefore, the sample size used in this research Equal to 420 samples

District	Number (SMEs)	
Mueang Pathum Thani	60	
Lam Luk Ka	60	
Khlong Luang	60	
Thanyaburi	60	
Sam Khok	60	
Nong Suea	60	
Lat Lum Kaeo	60	
Total	420	

The tools used for data collection were questionnaires about the relationship of the logistics process to the planning, the cost reduction of the order processing and the order processing and information system. Out of the operator Small and Medium Enterprise, Pathum Thani Province. The questionnaire was using a five-point Likert scale (1 = very negative, 2 = negative, 3 = neutral, 4 = positive, 5 = very positive). The data was analysed using SPSS with descriptive analysis and multiple regression.

III. RESULTS

Table 1 SMEs Demographic

Gender	**N**	**%**
Male	221	52.6
Female	199	47.4
Total	420	100
Education	**N**	**%**
Higher Secondary School	95	22.6
Vocational Education	52	12.4
Higher Education	199	47.4
Master Degree	68	16.2
other	6	1.4
Total	420	100
Registered capital (Baht)	**N**	**%**
1-5 million	25	5.9
5-10 million	78	18.5
10-20 million	145	34.5
20-30 million	152	36.2
Over 30 million	20	4.90
Total	420	100

Source: author

The Demographic of the participants are summarised in table 1. The number of participants of the study was accounted to 420 (N=420) where 52.6 percent were females and the 47.4 percent were males. Almost 48 percent of the participants educated in higher school, 22.6 percent were educated Higher Secondary School, 16.2 percent educated Master Degree, and 12.4 percent educated Vocational Education respectively. More than 36 percent of the participants has registered capital 20-30 million. 34.5 percent has registered capital 10-20 million , 18.50 percent of the participants has registered capital 5-10 million , 5.9percent of the participants has registered capital 1-5 million , and 4.9 percent of the participants has registered capital Over 30 million respectively.

Table 4 Model Summary of Regression analysis
Model Summary

Coefficients Model	Unstandardized Coefficients B	Standard Error	Standardized Coefficients Beta	T	Sig.
Constant	5.575	.666		8.374	.004
Order	.596	.092	.411	4.654	.000
IS	.258	.076	.213	1.769	.001

Predictors: (Constant), Purchase order, information system
Source: author
a. Dependent Variable: the reduction of operating costs: author's field observations.

$Y = 5.575 + 0.596\ \text{Order} + 0.258\ \text{IS}$

The model explains that the reduction of operating cost positively support Purchase order and information system The value of b 0.596. The business can manage purchase orders from customers by having a system to check Efficiency = .596 means that the reduction of operating cost increases 1 unit, business can manage purchase orders from customers by having a system to check Will effectively increase 0.596 units

The value of b 0.258. The business can manage information system process by having a system to check Efficiency = 0.258means that the reduction of operating cost increases 1 unit, business can manage information system process by having a system to check Will effectively increase 0.258units

Model	**R**	**R^2**	**Adjusted R^2**	**Std. Error of the Estimate**
1	.356[a]	.127	.114	1.45418

a. Predictors: (Constant), purchasing order and information system
From Table 1.2, it is found that 2 independent variables have a relationship with the reduction of operating cost at .356 level. All 2 variables can explain the 12.7% change in the reduction of operating cost with the estimation error of approximately 1.45418 (meaning the error that occurred Based on average forecast)