



# **EFFECTIVE LOGISTIC OF E-COMMERCE IN THAILAND**

**BY**

**SASIVIMON NIYOMCHAIVISAN**

**AN INDEPENDENT STUDY SUBMITTED IN PARTIAL  
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Member and Advisor



(Associate Professor Narameth Nananukul, Ph.D.)

Member



(Assistant Professor Sun Olapiriyakul, Ph.D.)

Director



(Professor Pruettha Nanakorn, D.Eng.)

Independent Study Title	EFFECTIVE LOGISTIC OF E-COMMERCE IN THAILAND
Author	Sasivimon Niyomchaivisan
Degree	Master of Engineering (Logistics and Supply Chain Systems Engineering)
Faculty/University	Sirindhorn International Institute of Technology/ Thammasat University
Advisor	Associate Professor Narameth Nananukul, Ph.D.
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## ABSTRACT

The goal of this thesis report is to study the importance of logistics service quality for e-commerce business: an application of Analytic Hierarchy Process (AHP). The study was qualitative research and the in-depth interview was employed for data collection that expertise and continuous growth 6 people and the result data were analyzed through content analysis and interpretation. In order to study the relationship between the elements of the logistics problem and the logistics strategy employed to develop service values and meet the happiness of targeted consumers, a mix of business strategies in the product distribution companies that sell items were done.

**Keywords:** E-commerce, AHP, Logistics strategy

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## TABLE OF CONTENTS

	Page
ABSTRACT	(1)
ACKNOWLEDGEMENTS	(2)
LIST OF TABLES	(4)
LIST OF FIGURES	(5)
CHAPTER 1 INTRODUCTION	1
1.1 Problem Statement	2
1.2 Purpose of Study and Research	3
1.3 Field of Research	3
1.4 Introduction to AHP	3
CHAPTER 2 REVIEW OF LITERATURE	5
2.1 Factors of Warehouse Management	5
2.2 Factors of Transportation Management	7
CHAPTER 3 RESEARCH METHODOLOGY	9
3.1 Model	10
3.2 Research Respondents	10
3.3 Questionnaires	11
CHAPTER 4 RESULT SUMMARY	12
4.1 Result Overall	12
4.2 Discussion and Conclusion	13
REFERENCES	14

## LIST OF TABLES

Tables	Page
4.1 The result of Overall	12



## LIST OF FIGURES

Figures	Page
1.1 AHP Diagram	4
3.1 Research Methodology Flow	9
3.2 E-commerce Logistic Factors	10
3.3 Questionnaire Paper	11



## **CHAPTER 1**

### **INTRODUCTION**

Nowadays, Thailand has entered an era where technology plays a more active role in daily life, thus causing the behavior of people in society to change both the nature of the operation. The business operation and consumer behavior from buying products at the store to the stores on the Internet via the website. E-Marketplace and Social Media Application of shopping malls, shops and retail entrepreneurs Including the investment of large foreign entrepreneurs. The liberalization of trade through e-commerce business makes its distribution reach consumers expeditious and convenient.

E-commerce business statistical surveying shows that clients require delivery fastest after they ordering. This is a gigantic test for the company from the coordination side and as of now escalated work is in progress to fulfill this need. Moreover, clients are very requesting, they focus on numerous subtleties. With developing rivalry and a great many online exchanges, retailers need to continually improve the degree of client assistance. They do this by improving coordination in the organization or improving IT apparatuses, for example their own sites.

Electronic commerce (e-commerce) activities are becoming increasingly common in our lives due to the rapid expansion of internet information. It is altering our way of life and has extended to every possible aspect of society. Additionally, in increasingly challenging international economy, e-commerce has become increasingly crucial and overlooked as globalization accelerates. As a result, logistic distribution has gained a new dimension in the e-commerce industry. They both have an impact. As a result, the overall rate of development in logistics distribution is still low, and the development patterns are somewhat varied. Finding and solving difficulties has become an issue that every logistics company must deal with.

Transport and distribution or logistics providers for e-commerce businesses are growing in tandem with the growth of the online marketplace to meet the needs of customers in their merchandise trading services. That facilitates buyers and sellers able to deliver products in a short time. In Thailand in the past 2-3 years, the competition of logistics service providers as for the e-commerce business, there is a steadily increasing



competition rate. The resulting in the operation in the supply chain of e-commerce business, more efficient due to the higher competitive factors of logistics service providers and changes in consumer behavior in choosing products through online channels. Thus, the logistics service provider should study the real needs of the service recipient.

To guide the development of service quality by analyzing the marketing mix, which is a tool that service providers can manage quickly and can develop a strategic plan to meet the satisfaction and needs of the target customers appropriately.

The necessity of measuring the quality of logistics services for e-commerce enterprises was recognized by the researcher. By examining quality of service from the perspectives of service providers and clients using the Analytic hierarchy process model's quality criteria. To direct the organization's strategic development in order to satisfy the needs of clients in the online market with high-quality and efficient drawings.

### **1.1 Problem Statement**

Because of the relationship between the warehouse management and the transportation management effect of logistic in E-commerce. The AHP model, in the extent of weighting which factor significance component. To enhance the survey of this investigation zeroed in on contemplating the factor that compelling strategic of logistic for e-commerce business.

The importance of warehouse and transportation management can be seen in the capability of determining the applicability of time, for example. In other words, products should be held in the storage area at the time and location that beneficiaries require for the requested arrangement. The pursued activities are basically transportation and handling, that have a critical effect in e-commerce market. In addition, the customer satisfaction is also impact on the transportation management.

Therefore, logistic of e-commerce, where the effective are located, presents the research concern. The goal of analysis is to determine how important something is. It was broken down into criteria to assess in order to achieve the goal.

## **1.2 Purpose of The Study**

With the rapid development of world economic information, e-commerce has been developed rapidly and efficiently. With the continuous development of information technology improvement, e-commerce has become one of the future directions of worldwide business advancement. However, the traditional logistics distribution, the last part of e-commerce, cannot meet the demands of today's transformed e-commerce era due to a number of flaws.

Thus, this thesis analyzes the factors of logistics distribution in the e-commerce environment and in view of the warehouse management and transportation as a key aspect of e-commerce to find and develop the logistics model. Indicate the significant level of E-commerce logistic factor and to guide the strategic development of the organization to meet the needs of customers with quality and efficiency

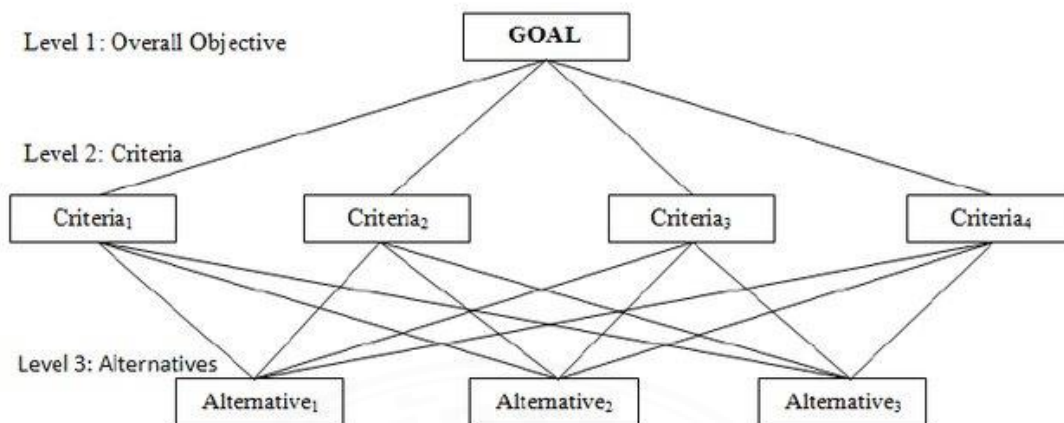
## **1.3 Field of Research**

This research is conducted in the field of Logistic companies and E-commerce company in Thailand.

## **1.4 Introduction to AHP**

Analytic Hierarchy Process or AHP is one of technique that used in decision making which popularity and widely accepted at the international. It is technique which separate factor to be pattern of hierarchical chart and set weigh of each factor for compute to value of important each choice and analysis which choice is the best solution to make decision.

This research brings the AHP analysis to weight the significant of factor which effect to the AHP diagram compose of three main component levels that are the overall objective, criteria and alternative. The AHP approach helps in calibrating the scale for representing qualitative dimensions in quantitative terms and hence helps in keeping up consistency among the different parameters utilized for assessment. The AHP model proposed by Saaty uses a nine-point scale. Saaty likewise utilized a similar decent guide scale to assign the weights



**Figure1.1** AHP Diagram

## **CHAPTER 2**

### **REVIEW OF LITERATURE**

The web-based business strategic tasks engaged with keeping up with and transporting stock for an online store or marketplace, including stock administration and the picking, bundling, and transportation of online orders, are alluded to as e-commerce logistics coordination. Thus, it is separated into two significant parts: distribution center administration and transportation the board.

#### **2.1 Factors of Warehouse Management**

##### **2.1.1 Work allocation**

The practice of successfully organizing resources and labor to achieve the company's output goals of a job or project is known as work allocation. The allocation is based on how properly assigning resources and activities will assist the firm. Work allocation enables job management that would be both efficient and strategic. This makes strategic planning easier while maintaining maximum production and efficiency by allocating resources and time in the most effective way possible.

##### **2.1.1.1 Process Flow**

A warehouse management system process flow is a visual chart or diagram that outlines your warehouse's major tasks. It's an aspect of the warehouse organization process. A process flow diagram displays how products are received, processed, and distributed, as well as any intermediate processes. For an example, in the morning and afternoon the warehouse is very busy so they process flow is only distribute order to customer so supplier should send product in the evening.

##### **2.1.1.2 Human Resource**

Human resource management is an essential part of warehouse operations. Human resources can be both the greatest and weakest component in the warehouse's operations. Throughout most warehouse operations, the human resources structure is used in a variety of, on-the-job places. vacuity of coffers.

## **2.1.2 Product Allocation**

Product Allocation allows you to select the quantity of units that each area will receive during a specific time period, and pop-up alerts ensure that your employees is aware of supply limits if they commit or order more than their allocation.

### **2.1.2.1 Warehouse Layout**

Warehouse layout is fundamental since it has a direct impact on your warehouse's productivity and efficiency. The structure should place the tasks in a logical designed to help streamline operations, increase productivity, and cut costs. A well-designed warehouse layout can allow simple access to stored items while also reducing travel time and improve order fulfillment rates.

### **2.1.2.2 Material Handling Equipment**

Mechanical handling equipment (MHE) is used to transfer, storage, manage, and protect materials, goods, and products during the manufacturing, distribution, consumption, and disposal processes. The different types of handling outfit can be classified into four major orders transport outfit, situating outfit, unit cargo conformation outfit, and storehouse outfit.

### **2.1.2.3 Warehouse Management System**

Warehouse Management Systems (WMS) support businesses in improving operational effectiveness across a variety of activities. To achieve these high-performance objectives, a solution must be devised to minimize all waste from the warehouse, streamline operations, and increase efficiency in all aspects of warehousing operations.

## **2.2 Factors of Transportation Management**

### **2.2.1 Cost Minimization**

To maximize profit, industries must arrange transportation of their products from warehouse to client end with least transportation costs.

#### **2.2.1.1 Third Party Logistic Selection**

Transportation product to customers is an examples of e-commerce logistics procedures that can be outsourced to a third-party company. With the tools and infrastructure to automate retail order fulfillment, 3PL providers enable e-commerce merchants to achieve more.

#### **2.2.1.2 Fleet management**

Fleet management is the process your business uses to manage all fleet and asset information, from acquisition through to disposal. This enables your business to reduce costs, improve efficiency and ensure compliance across an entire fleet operation. While most commonly used for vehicle tracking, fleet management includes following and recording mechanical diagnostics and driver behavior.

#### **2.2.1.3 Logistic Network Design**

For businesses, this is a strategic topic. It necessitates in-depth analysis in order to guide strategic decisions such as site selection, sizing the proper number of factories, platforms, and warehouses, and creating physical flows between supply chain nodes and distribution flows. company production lines that specialized (or don't). Keeping the appropriate things in the appropriate node to provide the greatest client delivery terms.

### **2.2.2 Customer Satisfaction**

Customers are served by logistics activities within a company organization through achieving the time and location related market difficulties, as well as by the pricing and quality of services supplied, considering the customers' demand and purchasing power. Customer satisfaction is significant since it gives a statistic for accounting and finance professionals to utilize in managing and improving their

businesses. Consumer happiness can also be used to determine a company's or a product's long-term viability by gauging customer loyalty.

#### **2.2.2.1 Flexibility**

This is an ability of the organization to adapt to changing circumstances and client expectations in the future. It also includes the ability to respond to the customers' uncertainty.

#### **2.2.2.2 On Time – In Full (OTIF)**

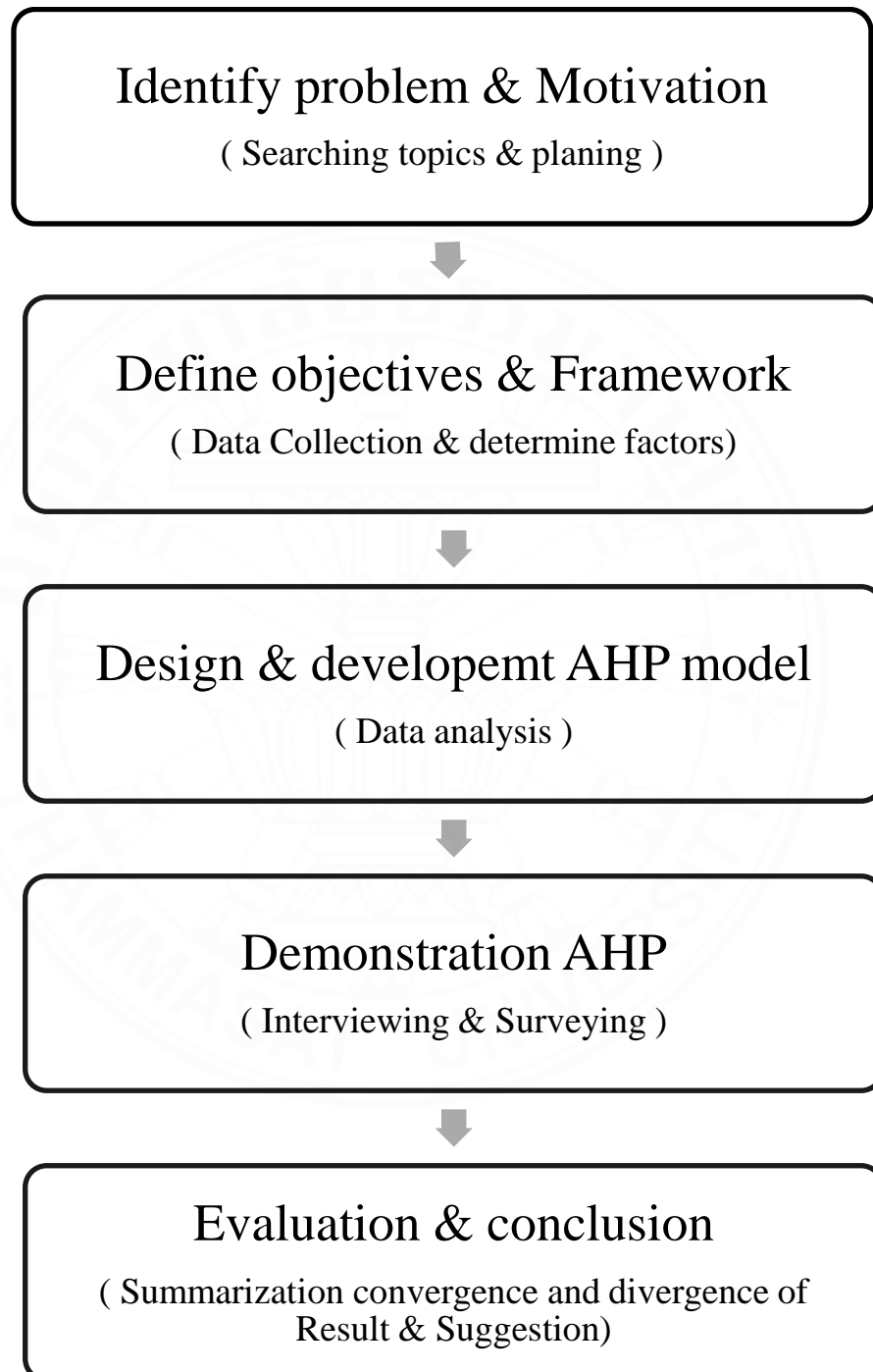
The OTIF definition consists of two parts - on time and in full. It refers to the KPI measuring the efficiency and accuracy of delivery or logistics in the supply chain. **On Time:** Organizations set a deadline for themselves that they must meet the delicacy of commit time. A frequent on- time demand is that the delivery shouldn't be late. It's also important to keep in mind that it should not be done too snappily. When a case closes important faster than anticipated, it generally means there were some exceptions **In Full:** In a most simple terms, in full means that the buyer receives exactly what they ordered. The manufactured batch size, for illustration, can vary, or the in full criteria should be established to ensure that the buyer receives at least the quantum bought.

#### **2.2.2.3 Service Experience**

Providing them with a tool to track shipments is generally beneficial, but individual interaction is also beneficial. Keep your clients informed about their orders or the status of their deliveries. We must recognize the importance of customer interaction at all stages when it comes to consumer loyalty. It must be a two-way street whenever it comes to feedback. That also is, you must provide comments on any problems you encountered, how you fixed them, and how you can avoid them in the future.

Customers can provide feedback on whether your supply chain management process met or above their expectations, which you can utilize to enhance your supply chain management process and do better in the future.

**CHAPTER 3**  
**RESEARCH METHODOLOGY**

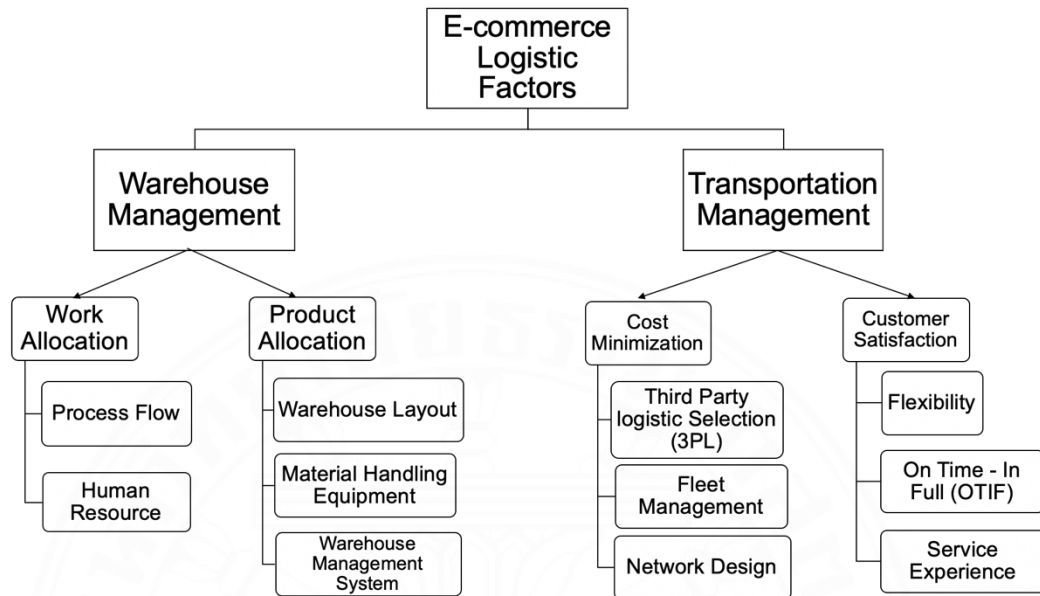


**Figure 3.1** Research Methodology Flow



### 3.1 Model

#### 3.1.1 Model



**Figure 3.2** E-commerce Logistic Factors

### 3.2 Research Respondent

All respondent is the expert and have the experience in business transformation to create the better competitive potential. The respondents separated into two groups, which are the group managers of the logistic company and the group of managers of the E-commerce company. Moreover, all these respondents are in the E-commerce market. For the logistic company compose of Manager of Logistic Department, Head of Warehouse and Head of Marketing. In the group of E-commerce company, consist of Manager of Business Operation, Manager of Customer Service Department and Head of Transportation.

### 3.3 Questionnaires

The main purpose of this questionnaire is to ask the respondents to weight the significant level of each factor in AHP model by use pairwise comparison. Additional interview was made to extract the extend opinion to support the score their select.

Please Select the scale of the factor that has more significant level on Effective Logistic of E-commerce implement																		
Select Scale(1):	Equal significant																	
Select Scale(3):	Moderrate significant																	
Select Scale(5):	Strong significant																	
Select Scale(7):	Very strong significant																	
Select Scale(9):	Extremly strong significant																	
(2,4,6,8):	Intermidate value																	
Which factors are more significant between Warehouse Management, Transportation Management																		
Warehouse management	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Transportation Management
[Warehouse Management] Which factors are more significant between Work Allocation, Product Allocation																		
Work Allocation	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Product Allocation
[Work Allocation] Which factors are more significant between Process Flow, Human Resource																		
Process Flow	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Human Resource
[Product Allocation] Which factors are more significant between Warehouse Layout, Material Handling Euiptom, Warehouse Management System																		
Warehouse Layout	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	MHE
Warehouse Layout	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	WMS
MHE	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	WMS
[Transportation Management] Which factors are more significant between Cost Minimization, Customer Satisfaction																		
Cost Minimization	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Customer Satisfaction
[Cost Minimization] Which factors are more significant between 3PL Selection, Fleet Management, Network Design																		
3PL Selection	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Fleet Management
3PL Selection	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Network Design
Fleet Management	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Network Design
[Customer Satisfaction] Which factors are more significant between Flexibility, Ontime-Infull, Service Experience																		
Flexibility	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Ontime-Infull
Flexibility	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Service Experience
Ontime-Infull	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Service Experience

Figure 3.3 Questionnaire Paper

## CHAPTER 4 RESULT SUMMARY

### 4.1 Result of Overall

The overall result gives the importance to Transportation management and Warehouse management respectively. In the Transportation management, they point that On Time In Full has more importance than the others. In Warehouse management, they weight that Work allocation is the significant factor in term of setting the clear strategy.

**Table 4.1** The result of Overall

Level 1	Level 2	Level 3
<b>1.Warehouse Management</b> 0.5,0.8,0.5,0.25,0.167,0.25,(0.40)	<b>1.1.Work Allocation</b> 0.8,0.167,0.75,0.833,0.875,0.667,(0.70)	<b>1.1.1.Process Flow</b> 0.833,0.8,0.833,0.857,0.9,0.8,(0.84)
		<b>1.1.2. Human Resource</b> 0.167,0.2,0.167,0.143,0.1,0.2,(0.16)
	<b>1.2Product Allocation</b> 0.2,0.833,0.25,0.167,0.125,0.333,(0.30)	<b>1.2.1.Warehouse Layout</b> 0.233,0.081,0.413,0.192,0.653,0.333,(0.32)
		<b>1.2.2.Material Handling Equipment</b> 0.07,0.188,0.26,0.164,0.285,0.14,(0.21)
		<b>1.2.3.Warehouse Management System</b> 0.707,0.731,0.327,0.634,0.062,0.528,(0.48)
<b>2.Transportation Management</b> 0.5,0.2,0.5,0.75,0.833,0.75,(0.60)	<b>1.Cost Minimization</b> 0.5,0.857,0.143,0.143,0.1,0.143,(0.28)	<b>1.Third-Party Logistic Selection</b> 0.091,0.648,0.084,0.183,0.075,0.661,(0.24)
		<b>2.Fleet Management</b> 0.218,0.122,0.444,0.075,0.229,0.208,(0.24)
		<b>3.Network Design</b> 0.691,0.23,0.472,0.742,0.696,0.131,(0.52)
	<b>2.Customer Satisfaction</b> 0.5,0.143,0.857,0.857,0.9,0.857,(0.72)	<b>1.Flexibility</b> 0.144,0.063,0.125,0.226,0.063,0.717,(0.22)
		<b>2.On Time In Full</b> 0.76,0.743,0.125,0.674,0.194,0.078,(0.43)
		<b>3.Service Experience</b> 0.096,0.194,0.750,0.101,0.743,0.205,(0.35)

## 4.2 Discussion and Conclusion

Possibilities to achievement outcome from those degree of extension about innovative characteristics and ecological possibilities. In this setting regardless of anything else the accomplishment factors liable for progress or disillusionments of an association should be regarded. Through the accomplishment factors referred to over an appraisal plot is made. In the further advances it might be used to survey assorted decision decisions.

The accompanying rate weighting results in there introduced effects of the basic achievement factors on the return on investment. For each circumstance the decision professional or contra the sensible measures happen through rules and monetary issues of the concerned organization. The weighting illustrated above complies with a case study of an e-commerce logistic company. It gives as a premise to a recommendation. The assessment of the boundary esteems is individual. The chosen weighting may not matter to each organization.

From the scores of each factor accordingly, as a result, for e-commerce businesses, it can conclude that the effective factor in logistic of e-commerce for warehouse management is work allocation which focus on the process flow and for the transportation management the effective factor is customer satisfaction which focus on time in full. Technology plays a more active role in daily life, thus causing the behavior of people in society to change both the nature and the operation. The company that trade through e-commerce business must makes its distribution reach consumers expeditious and convenient.

Therefore, when the company pays more attention in these criteria, it will help to work more efficiently in the future for this business. The scores obtained in each factor are an indication of the importance of people working in this line of business. To provide the benefit of being a case study for entrepreneur in this competition online market. E-commerce in order to make it a key success, that has to really focus on the logistics department of this work

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