Market Analysis of a New Marine Market Center

by

Ms. Siriporn Kallapaphruckchai

A Final Report of the Three-Credit Course
CE 6998 Project

Submitted in Partial Fulfillment
of the Requirements for the Degree of
Master of Science
in Computer and Engineering Management
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Project Title	Market Analysis of a New Marine Market Center
Name	Ms. Siriporn Kallapaphruckchai
Project Advisor	Dr. Chamnong Jungthirapanich
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The Graduate School of Assumption University has approved this final report of the three-credit course, CE 6998 – CE 6999 PROJECT, submitted in partial fulfillment of the requirements for the degree of Master of Science in Computer and Engineering Management.

Approval Committee:

(Dr. Chamnong Jungthirapanich)
Dean and Advisor

(Prof.Dr. Srisakdi Charmonman)
Chairman

(Assoc.Prof. Somchai Thayarnyong)
CHE Representative

July 2004

ABSTRACT

Every organization as well as New Marine Market Center needs to anticipate and satisfy customer needs if the organization wants to remain on the top in terms of making profit. Marketing is about ensuring that whatever the firm does is done with the customer in mind. NMMC is a new marine market in Samutsakhon province. Therefore, the study of customer attitude is essential to improve performance. This is in order to increase awareness of NMMC and services. This research is an exploratory one concerned about customer attitude towards NMMC. It aims at gathering information concerning the nature of customer behavior and attitude towards NMMC. In this research, information regarding purchasing behavior is gathered as much as possible in order to develop and improve NMMC performance to meet customer's satisfaction when they take NMMC's services.

From the results of research, most people come to buy marine products for self-consumption. However, there are some people who come to buy marine products for distribution. Most end consumers are irregular customers and they use cash to buy the products while wholesalers buy on account. Advantages of existing marine market are price of goods, convenience of transportation and quality of goods. Disadvantages are disorderly layout of market, inadequate parking lots, safety, impolite sellers and traffic jams. And most respondents acknowledged the project but they disagreed to move the existing marine market to NMMC completely. Since there are presently insufficient advertisements, television and radio are presently selected to carry out NMMC advertisement so as to generate people's awareness.

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I. INTRODUCTION

1.1 Significance of study

The New Marine Market Center (NMMC) in Samutsakhon is situated on Thonburi-Paktho Road and it is planned to open trading around March 2546. Our target markets of this project are end consumers and wholesalers who have traded marine products in the existing marine market in Samutsakhon for a long time. So, to induce them from the old place is the main problem although some groups of wholesaler are already interested to join the project. However, there have never been studies on purchasing behavior, distribution of marine products and acceptance of marine market center by purchasing group.

This research studies the purchasing behavior, the distribution of marine products and the acceptance of marine market center in order to collect meaningful information for developing the project that will be opened in the near future in a correct way.

1.2 Research Objectives

The general objectives are to study customer attitude and their acceptance of NMMC and to recommend ways to improve NMMC. Specific objectives of the study are:

(1) To study purchasing behavior

(2) To analyze product distribution

(3) To identify the previous problems

(4) To study customer's attitude and what they want to improve regarding NMMC

(5) To test acceptance of existing marine market movement to NMMC

(6) To investigate services of media which customers frequently use

1.3 Limitations of the Study

The researcher sets the limit of the study as follows:

(1) This study focuses on end customers and wholesalers at the existing marine market.

(2) Some respondents are not willing to answer the questionnaires.

(3) There is time limitation.

(4) Some NMMC internal data is confidential.

II. LITERATURE REVIEW

1. Background

In 1997, Thais faced a severe economic recession and in 1999, the economy gradually improved due to inflation and extending of export. However, it cannot indicate that all problems of Thai economy will be solved. To solve the problems, Thais have to concentrate on the basic economy, which must be stable; especially, ports for exporting goods should stably support the growing economy.

Thailand is accepted worldwide as a major producer of agricultural and marine products. Concerning the neighboring countries in Asia, especially, China have many industries in this field and this makes Thai necessary to develop the industries in order to be able to compete with them.

NMMC is one of the projects that can develop Thai agricultural and marine industry to rival with other countries. Particularly, most people in Samutsakhon province have done this business for a long time and they have most experience in this field, especially, marine processing. Both government and industrial estate have asked the local private sectors to submit this project in 1999; however, many lack the basic factors at that time and they were unable to do it. It needed high capital investment. Finally, probability of NMMC should be studied in order to have the same understanding by both government and private sectors to do this project.

Regarding the fishery industry in Thailand, Samutsakhon with its marine processing industry has a high importance in Thai economy. Since 1980, this kind of industry in Thailand has gradually grown. In 1990, the know-how about marine processing products was revealed. Marine products, which are processed, could immediately be served for a

meal. Its value would be higher and most of them are demanded by Japan, America and many countries in EU.

Nowadays, raw materials are caught in Indian Ocean, Pacific Ocean and North Ocean for processing of Thailand.

However, the leader status in marine production should be maintained stably in order to attract foreign investments. Therefore, concentrating on quality control and developing the products would be necessary.

Presently, Samutsakhon still lack a modern port for supporting export and import. Most manufacturers have no choice but to use the one and only port in Bangkok, wasting around 3 - 4 hours per truck for transporting raw materials from Bangkok to their factories at Samutsakhon. Apart from the time wasted, the quality of raw material will be hard to control since they are carried by truck with no freezers for saving costs. But if they use container cars to carry, it will not be worthwhile for them.

Most marine processing products are in cans, such as canned tuna and fishmeal. The biggest manufacturer of canned tuna in the world is Thai Union Manufacturing Co.,Ltd, which is also located in Samutsakhon. Ninety percent of their raw materials or about 400,000 metric tons are needed to be transported from the port in Bangkok to their factory in Samutsakhon and about 40 reefer ships (2,000 metric tons or more) will berth at private ports. However, many entrepreneurs still face lack of port to discharge their cargoes. Concerning this matter, fishery companies, marine processing industries and local government have the same idea to construct a new modern port in Samutsakhon urgently in order to support both import and export.

Thailand has many fish markets and each one has a different management. Most fish markets in Thailand firstly sell to brokers since fishermen have previously been financed by brokers providing for fishing equipment. After that they have to sell the catch

brokers at prior and unreasonable price. This is not a complete auction channel except for some kinds of fish which are in limited amounts will be done on a complete auction basis.

Public fish markets are located around the coasts of Thailand but the biggest fish markets are located only in Samutsakhon and Bangkok. Beside the fish markets of government, there are private sector markets also.

When the modern fish auction market is constructed completely, fishermen who sell their fish in the market will become independent from brokers. They can sell their fish at reasonable prices to their satisfaction. It will enable them to have more purchasing power to buy fishing equipment and operate their fishery without depending on brokers. So, constructing a fish auction market in Thailand is urgently needed, especially, in Samutsakhon.

Samutsakhon province is only 30 - 40 kilometers far from Bangkok or around 1 hour drive. Most industries in the province are fishery and marine processing industries. Moreover, textile industries and electric appliance industries are of substantial growth in this province too. The target markets of such industries are Bangkok and overseas.

In 1979, the population in province was 258,633 and rapidly grew to be 421,738 in 1999 or 63 percent growth or 2.5 percent per year. There were 3,079 factories in 1998. The advantage of Samutsakhon is it is closely located to Bangkok. Nevertheless it still lacks a planned port in order to support the growing economy. Most of existing ports are located on Tachin River and they have limitations concerning the size of ship and control of water pollution. It needs high attention because many small processing factories still lack attention in curing the used water before releasing it into the river. So, pollution control in an industrial area should be urgently done in an effective way.

Agriculture products and processed products of Samutsakhon province are well known, including non-food factories such as textile industries and assembly factories. If

there is a modern port, it will support cargo export to worldwide markets and it will be able to attract new investors to the province inducing development at the same time.

New Marine Market Center (NMMC) is very important for raising the quality of raw materials, which will be sent to the processing industries and also for decreasing transportation costs. At present, the existing fish market in the province is rather narrow and needs to move to another location. Eventhough, the private sector has intention to cooperate in the new port (fish pier) construction, if the management system is still the same as the existing market, the brokers will continue receiving the most benefits. For this reason, setting policies for the new port management should be carefully done and both sectors have to understand the same objectives, which would generate most benefits to fishermen and fishery association.

Most container movements is from the port in Bangkok to Leam Chabang port in order to arrange for exporting to Singapore and then to other destinations. Thus, constructing a new port in NMMC will support container transportation direct from Samutsakhon to abroad.

Moreover, NMMC considers the develop of the province and it has a plan to integrate many kinds of industry together reducing the traffic jam in Bangkok reduced and also stimulating the development of agriculture industries in the province.

NMMC operations have been done step by step and the first development step (basic development) is now done consisting of processing manufactures, fish market and all convenient equipments for the fish market. For the first development step, land requirement is around 875 rais or 140 hectares. For the second development step, agricultural industries are the target, for which land requirement is around 200 hectares and then followed by the third step, for which land requirement is around 500 hectares.

2.2 Area Development of NMMC Plan

At present, there are more than 20 fishery ports on both Tachin River coasts and all of them belong to the private sector, especially, the biggest port is Thai Union port which is able to receive reefer ships, of 2,500 gross tons. However, both Tachin River coasts have been mostly used for private ports so there is no sufficient area to support NMMC plan.

Tachin River is under the responsibility of Habour Department. In the past, its depth was 3 meters and can receive big fishing ships. When the channel was dredged in 1998 - 1999, it had more than 5 meters depth and the width was 60 meters. The total dredged depth was 2.4 square meters.

From the past experience, trash including mud would be released into the Tachin River and waves moved it to pile up at its channel making Tachin Channel become shallow. To protect the channel, it is necessary to dredge the channel every 2 years. For the above mentioned factor, the construction plan of NMMC and retainability of the channel have important relationships.

The modern port will be able to receive reefer ships of 5,000 gross tons and the river channel should have a depth of 6 meters. The industrial area requires about 137 hectares of land for the first step and 500 hectares for the final step. The land which is required to construct the industrial area, should connect to the public highway.

To attain the aim, the area is divided into 3 as 1) A area - East, 2) B area (East) and 3) C area (West). First area (A area) is on the East of the whole area. There is an irrigation canal on the North of the area, which is better than the South of the area. Both coasts have scattered houses and most local people do livestock. The existing irrigation canal is about

40 meters wide and about 2 - 3 meters deep which is not sufficient to receive big fishing ships. Therefore, it is necessary to dredge the existing canal. Developing the areas will be done from West to East. Regarding the mangrove forest in front of the area, it should be preserved; therefore, there is no plan to develop this area. Second area (B area) is also on the East of the whole area. This area is for livestock and salt farms, which would be located on the West of Tachin Estuary. The front of the coast would be mangrove forest, which is different from A area (East) because there is no irrigation canal. Therefore, if the port is constructed, it is necessary to dredge the channel from the ocean into the plan and dredging will not be done in the mangrove forest area in order to preserve the environment. The area is around 700 hectares and that is sufficient to support NMMC plan. Nevertheless, there is no reservation or development in this area and since the government plans to develop this area as a park, so NMMC plan should be projected and accepted by the government. Third area (C area) is on the West of Tachin River which has a mangrove forest along the coast and the undersea land pitches down off-coast around 1.5 - 2 kilometers. Most undersea land is mud that is moved to pile up from Tachin River and Mae Klong River by waves. To construct the port in NMMC plan, it is necessary to construct dikes because South West wind and South East wind will have direct effect to the port. Three options are compared in the following table:

Table 2.1. Comparison of Three Areas.

Location / Geography	East A area	East B area	West C area
1) Area requirement	Sufficient (700 hectare)	Sufficient (700 hectare)	Sufficient (Biggest)

Table 2.1. Comparison of Three Areas (Continued).

Location / Geography	East A area	East B area	West C area
2) Kinds of existing area	- Fish/shrimp farms - needs soil covering	- Fish/shrimp farms - needs soil covering	- Salt farms - needs soil covering
3) Mangrove forest area	- Front of area - no need to destroy	- Front of area - no need to destroy	- Front of area - no need to destroy
4) Entrance way to ocean	- The existing canal has enough width and length. - Use the existing channel but needs development	- Needs to dredge the channel - Use the existing channel but needs development	- Needs to dredge the new channel and constructed the dike - Needs to dredge existing channel
5) Entrance way to project	- The road in existing area must be improved and a bridge built.	- Have to construct both road and bridge	- Have to construct both road and bridge
6) Owner	Private	Private	Private
7) Prices	0.3 - 0.5 million baht per rai	0.5 - 0.8 million baht per rai	0.25 - 0.3 million baht per rai

All optional locations for NMMC construction plan have to improve the surface of soil.

A area (East) is the best concerning environmental preservation so that the existing mangrove forest would not be destroyed if NMMC construction plan was possible. However, if B area (East) was selected, the mangrove forest on the West of area should be destroyed.

The existing channel, Mahachai Channel, which is under the responsibility of Habour Department, can be still used in case A area (East) or B area is selected. Beside if C area is selected, much budgets will be required for dredging the new channel and constructing the dike in order to protect the port from waves.

Further, as entranceway to the project, B area (East) and the West area require new roads while A area does not need one.

The price of land is an important reason for consideration. The price of West area is the lowest. However, land price is always variable. Thus, A area (East) will be the best choice for NMMC plan.

2.3 Development Procedures

To accomplish fish industry development, the plan will be practically done step by step. To raise market potential and to gain competitor advantage in marine processing industries, a modern port construction consisting of cold storage port, berthage and complete cold storage are first requirements.

Second step, will be done in the North area, which has around 97 hectares and close to the edge of river where there is a navigation channel and the South area which has around 40 hectares will be developed as industrial estates.

The area, which is close to the edge of river, will be developed as first and second steps as follows:

(1) Discharge Port for Refrigerated Marine Products (Cold Storage Ports)

(2) Cold Storages

(3) Basic Marine Processing Industries

(4) Port for Marine Processing Products (Container Ports / General Warehouse)

(5) House for Curing Used Water

(6) Container Yard and Berthage

The discharge port in NMMC plan will be able to receive 5,000 gross tons of reefer ship, with length and draft of 110 meters and 7 - 10 meters respectively.

However, NMMC plan will have 5 - 6 discharge ports for refrigerated fish but 3 ports will be done as a first step in order to receive the total products, which are around 300,000 metric tons a year.

The cold storages that will be built in NMMC plan have to be able to receive 30,000 metric tons of products.

Because processing marine products generated severally polluted water and bad smell trashes, the plan should have restrictions to control the water quality before it is released from industries into the river and in order to follow ISO regulations. To build basic marine processing industries, the requirement of areas will be 30,000 square meters.

The processed products can be exported directly to overseas from NMMC port without transporting via the port in Bangkok. Therefore, entrepreneur's expenditures will be saved much.

For the yard, the requirement of area will be around 10,000 square meters for building parking lots and around 60,000 square meters for a forklift truck yard.

To cope with the problems of the small size of existing fish market, the government has also planned to construct a new fish market. This needs to have a fish pier, berthage,

marketing office, ice making factory / ice storage / ice grinder, operation building and building for various uses.

The area for construction located on the front of river's edge will have a total area of around 350 meters in order to berth small fishing boats.

Fish market will have an area around 20,000 square meters and can receive around 20,000 - 300,000 metric tons of fish a year.

To support market extension, ice-making factory can produce 50 - 100 metric tons daily and ice storage is able to keep 200 metric tons.

To construct operation building including parking lots and green area, about 10,000 square meters of land is required.

The purposes of constructing the building for various uses are for accommodating the fish market, practical building, fishing equipment storage and canteen. The area that will be used for this purpose is approximately 10,000 square meters.

The construction plan for the first and second steps is shown as follows:

Table 2.2. Construction Stages.

	1st Year	2nd Year
1. Facilities		
1.1 Navigation channel and channel dredging for building dockyard and improving land surface.		
1.2 Cold Storage Ports / Container Port / Ports for Small Fishing Boats		
1.3 Dikes and Accessory Yard Pavement		

Table 2.2. Construction Stages (Continued).

	1st Year	2nd Year
2. Public Utilities for Industrial Estate		
2.1 Area Arrangement	—	
2.2 Area Improvement	—	—
2.3 Streets		—
2.4 Public Utilities		—
3. Processing Procedures		
3.1 Cold Storage	—	—
3.2 Basic Processing Factory		—
3.3 Equipment for Controlling Polluted Water		—
4. Fish Market		
4.1 Marketing Office		—
4.2 Ice Making Factory		—
4.3 Practical Building		—
4.4 Building for Various Uses		—

NMMC plan is operated by private sector. In practice, it will be cooperated by both private sector and government to let it be possible. This plan does not cover only port construction but also a complete marine center, which consists of fish auction market, basic processing factory and industrial estate. Hence, Industrial Estate Association Thailand is willing to cooperate in this plan too.

If there is substantial private investment, government investment will be used less in plan development.

Due to restrictions of government that allow to have only one fish market in a province, government should help to promote the plan in order to make the local people aware of its benefits and also to accommodate the area for development.

The following table shows the divided responsibility between government and private sector in order to develop and operate the plan.

Table 2.3. Responsibilities of Government and Private Sector.

	Port area	Complete Marine Center	Industrial estate
Development	Government	Government	Government
Operation/Execution	Government and private Sector	Private Sector	Private Sector

2.4 NMMC's Budget Calculation

The first step of project construction will be started in 2003 and the facilities construction will be started in 2004. Land requirement is approximately 137 hectares for the first step of project construction. It can be divided into 2 periods. First period will construct ports, complete fish market and industrial estate. Second period will undertake the port expansion.

Costs of movement to a new location;

Total land requirement	137 hectares
Or about	856 rais
Average price	1,000,000 baht / rai
Costs of total land requirement	856 million baht

Use of land is classified as follows:

Port	22 hectares
Berthage	4 hectares
Container Warehouse	12 hectares
Bunker Stowage	6 hectares
Modern Marine Market Center	24 hectares
Dockyard	7 hectares
Parking Lot for Trucks	2 hectares
Fish Market	6 hectares
Cold Storage	3 hectares
House for Curing Polluted Water	3 hectares
Green Areas	3 hectares
Fish Park and Restaurants	15 hectares
Industrial Estate (including Public Utilities and Operation Building)	44 hectares
Public Utilities and Others	32 hectares
Roads	21 hectares
Others	11 hectares
Total	137 hectares

Budget for port development in the first period is approximately 928 million baht and all budgets needed both in first and second period are 1,304 million baht.

Budget for building cold storage consisting of labour costs, machine and electric appliances is approximately 500 million baht.

Budget for construction, which consists of executive building, is approximately 300 million baht. Basic processing facilities budget is around 10 million baht.

The budget for area development will include public utilities construction. The budget is classified below;

First period	360 million baht
Second period	172 million baht
Total	532 million baht

Budget for setting the drain piping system and house to eliminate trash is shown below;

First period	48 million baht
Second period	11 million baht
Total	59 million baht

Total budget for development is 4,070 million baht as shown in the table below;

Table 2.4. Total Development Budget.

	Total	**1st period**	**2nd period**
1. Land	856	856	-
2. Port Development	1,304	928	376
3. Complete Marine Center	810	810	-
Cold Storage	500	-	-
Fish Auction Market	300	-	-
Basic Processing Facilities	10	-	-
4. Budget for Area Development	532	360	172
5. Public Utilities (Drain Piping System and House to Eliminate Trash)	59	59	0

Table 2.4. Total Development Budget (Continued).

	Total	1st period	2nd period
6. Engineering Costs	216	216	-
7. Tax	293	238	55
Total (in million baht)	4,070	3,467	603

The warehouse for receiving 300,000 metric tons and 500,000 metric tons of refrigerated fish will be completed in the first and second period, respectively.

The warehouses for 200,000 metric tons of containers and 400,000 metric tons of dried products will be built in the first and second period, respectively.

Discharging fee is 80 baht per ton for cargo vessels and 40 baht per ton for fishing vessels. Estimated total quantity is 80,000 metric tons per year or 40 percent of all fish amount. Loading fee is 150 baht per ton for dried goods and 250 baht per ton for container.

Port operation expenses

Officers 100 persons

Average salary 20,000 baht per month

General fees 0.5 times (compared to salary)

Annual operation expenses = 100 * 20,000 + [(100 * 20,000) * 0.5]

= 36 million baht

The expenses for dredging river will be decreased due to the responsibility of Habour Department. The expenses for managing container business will be approximately 4 million baht per year.

The revenues from this area expansion will not be calculated although the expansion will be done.

Cold storage rent is 1,000 baht / metric ton / month, so the annual revenue will be 12,000 baht per ton. Capacity of cold storage is 30,000 metric tons and percentage of using cold storage is 60 percent.

Revenue is approximately 1 percent of fish trading value in fish market. The estimated trade quantity and value are similar to those of the existing fish market as 200,000 metric tons and 4.5 million baht, respectively.

For revenue from ice products, ice-using ratio is a ton of fish per ton of ice. The price of one ton of ice is about 50 baht.

Revenue from fish processing is approximately 30 percent of all fish quantity in the market or 60,000 metric tons, which will generate revenue from fish processing around US$40 per ton and 10 percent of such revenue will be paid to the manufacturer. The estimated revenue from this process will be around 9.1 million baht.

Fish processing expenses are as shown below;

Officers	300 persons
Average salary	15,000 baht per month
General fees	0.4 times (compared to hire costs)

Annual operation expenses = (300 * 15,000 + [(300 * 15,000) * 0.4]) * 12

= 75.6 million baht

The areas of fish park and food center will be sold to private sector. The selling prices of these areas will be higher around 1.5 times than the industrial areas.

Regarding revenues and expenses in industrial area management, since the location is located close to the port, the estimated selling price is rather higher than the industrial area, which is far from the port.

Land price	5,000,000 baht per rai
Land price	3,125 baht per square meter
Annual operation expenses	12 million baht

Total industrial area is 44 hectares, which includes industrial estate and the total area for sale is around 21 hectares. Estimated expenses of industrial area management are as shown below:

Officers	20 persons
Average salary	20,000 baht per month
General fees	0.5 times (compared to hire costs)
Annual operation expenses	= 7.2 million baht

Referring to costs of public utilities, reverse calculation is used in each business by dividing fish processing business and industrial estate in half. The total cost that is derived from land sale is around 259 million bath and this will be divided and allocated in half for the two businesses.

Financial analysis of the project will be used by return calculation of the project. This calculation method will be different from investment return calculation and the interests that are expenses will not be calculated.

Referring to the above hypothesis, the return of project is 9.7 percent that identifies as being minimum for private investments because the bank interest is 9 percent more than in Thailand. However, the project will possibly be in progress if the interest loaned for the project is low.

Foreign Investment Return Rate (FIRR) will be separately calculated by business types that are port, and fish processing and industrial estate (including fish park and food center). Fish park and food center areas have to be included in industrial estate because these areas will be absolutely sold to private sector such as industrial area. It can be distinguished as shown below;

Entire Project	9.7 percent
Port Element	5.6 percent
Fish Processing Element	10.5 percent
Industrial Element	12.9 percent
1st Period (Port and Fish Complex)	8.3 percent

The said FIRR is rather low rate and that will be a barrier for private investments. The return of fish complex (10.5 percent) is neither low nor high for private investment. If the loan is not used too much in the first step, the project can possibly have profits. To operate an industrial estate by private sector will be possible if there is high return rate.

NMMC has high importance to Samutsakhon province and Thai economy because the fish processing industry is a major industry of Thai export and has potential to expand Thai economy in the future.

Most economies in Samutsakhon province are related to fish products. To improve fish quality and to decrease costs of product in processing procedure are purposes why the new port should be built in Samutsakhon. However, the project does not have only the said purposes but also intends to attract private investments, to generate jobs, to promote cost of living and to develop the locality.

When the project is completed, 500 hectares of industrial estate will be able to generate 100,000 jobs or 200 jobs per hectare and 100,000 of indirect jobs approximately. Two thousand jobs will be totally generated. Gross Domestic Product (GDP) is US$2,000

per head and Gross Domestic of agricultural product is US$5,000 per head. Finally, Gross Domestic of non-agricultural product is US$60,000 per head. The value added that will be derived from the project is US$30,000 per head. Consequently, the project can generate around six thousand million value added per year or around 5 percent of GDP.

The cost of transportation from port to factories can be reduced and domestic traffic jam can also be reduced. Benefits can be derived from reduced transportation cost because the transportation cost of one truck (loaded 11 metric tons per truck) from port in Bangkok to factory in Samutsakhon province is 1,350 baht per time. However, it will be reduced to 700 baht per time from the new port (NMMC) to factory. Hence, the benefit that will be derived from reduction of transportation costs is totally around forty eight million baht.

Constructing the basic processing factory and controlling polluted water can substantially decrease the environmental problems in Samutsakhon province. Having better environment management in NMMC will affect other factories to do the same.

III. DATA ANALYSIS AND DISCUSSION OF RESULTS

3.1 Sample Design

The project covers customer attitude towards the new marine market center in Samutsakhon province. The necessary data will be gathered by using questionnaire through a series of personal interviews with a random sampling of 400 respondents.

3.2 Sample Size

Under the infinite population of the total number of sellers and buyers expected to trade at existing marine market around 10,000 persons per day, the statistical formula to be used to determine the sample size is:

$$S = X^2NP(1-P) / d^2(N-1) + X^2P(1-P)$$

where, s = Required sample size

X^2 = The table value of chi-square for 1 degree of freedom at the desired confidence level (3.841)

N = The population size

P = The population proportion (assumed to be 0.05 since this will provide the maximum sample size)

d = The degree of accuracy expressed as a proportion (0.05)

The relationship between sample size and total population is as the population increases, the sample size increases at a diminishing rate and remains relatively constant at slightly more than 380 cases.

The size of the population and amount of error determines the size of a randomly selected sample. This research determined the certainty at 95 percent of what the results would have been if the entire population had been surveyed.

3.3 Data from New Marine Market Center Management

For the new marine market center (NMMC), it is expected that there will be 100,000 – 300,000 customers per month including both wholesalers and end consumers. Strength of NMMC is it is a modern, and complete market, convenient, safe, stress free and especially supported by both private sector and government. Its weakness is insufficient public transportation services.

Target group : End consumers and wholesalers in the local and nearby provinces. The leader of management team said that the strengths of NMMC can encourage customers to use the market services. Furthermore, NMMC provides a variety of marine products such as shrimp, octopus, and fish at reasonable prices. NMMC has more choices of stores for customer selection and many problems caused by traffic jam at the existing marine market with no parking lots will not happen at NMMC.

NMMC public relations use television, radio, poster and billboard as media for advertisement.

3.4 Data Analysis

Sample Characteristics

Customers are the sole judges of attitudes and services provided. Kinds of customer, purchasing behavior, product distribution and their behavior of information acceptance affect the way people choose to use the market services. Therefore, the discussion of customer satisfaction is considered to be relevant in this study.

The output of the questionnaire for customer attitude towards NMMC in Samutsakhon province for Social Science (SPSS) Software is analyzed by using statistical package.

3.5 Discussion

After 400 questionnaires were filled in by respondents, the results of each question were found as follows;

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	end consumer	311	77.8	77.8	77.8
	wholesaler	89	22.3	22.3	100.0
	Total	400	100.0	100.0	

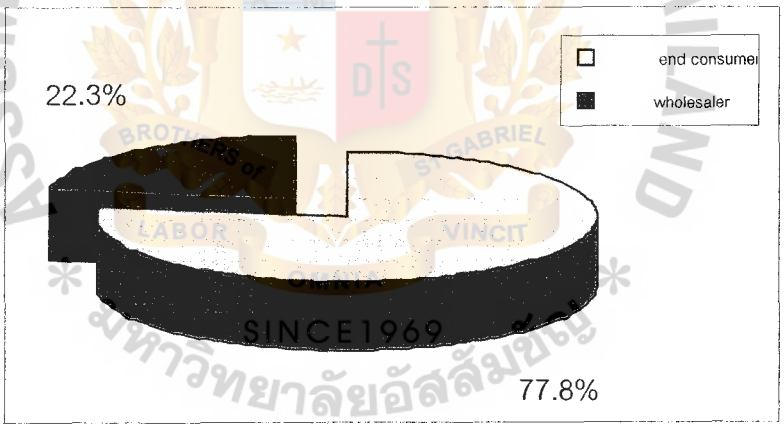

Figure 3.1. Kinds of Respondent.

From the result, it shows that people who come to buy marine products at the existing marine market are more end consumers (311 people or 77.8 percent) than wholesalers (89 people or 22.3 percent) who come to buy the products for distribution.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than or 4 times/week	175	43.8	43.8	43.8
	5-7 times/week	165	41.3	41.3	85
	8-10 times/week	37	9.3	9.3	94.3
	More than 10 times/week	23	5.8	5.8	100.0
	Total	400	100.0	100.0	

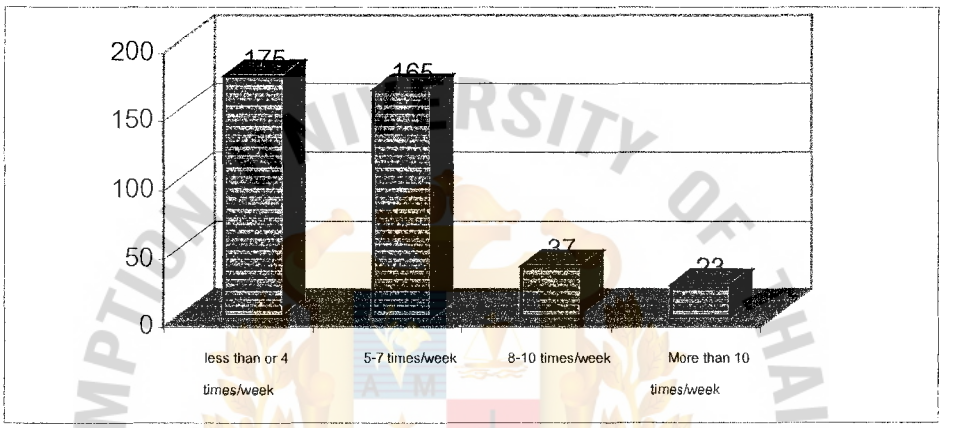

Figure 3.2. Buying Frequency.

From the result, it shows that most people (175 people or 43.8 percents) come less than or 4 times per week to buy marine products at the existing marine market. Out of the remaining 165 people or equal to 41.3 percent come 5-7 times per week, 37 people or equal to 9.3 percent come 8-10 times per week and 23 people or equal to 5.8 percent come more than 10 times per week respectively.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 10 kg/time	264	66.0	66.0	66.0
	11-20 kg/time	31	7.8	7.8	73.8
	21-30 kg/time	8	2.0	2.0	75.8
	More than 30 kg/time	97	24.3	24.3	100.0
	Total	400	100.0	100.0	

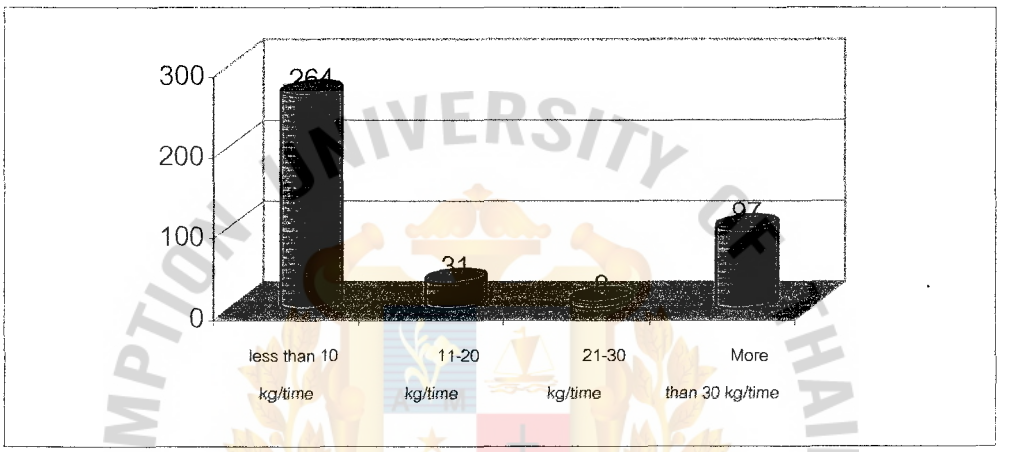

Figure 3.3. Buying Quantities.

From the result, it shows that most people (264 people or 66 percent) buy marine products less than or 10 kilograms per time. Out of the remaining 97 people or equal to 24.3 percent buy more than 30 kilograms per time, 31 people or equal to 7.8 percent buy 11-20 kilograms per time and 8 people or equal to 2 percent buy 21-30 kilograms per time respectively.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 1000 baht/time	213	53.3	53.3	53.3
	1001-2000 baht/time	50	12.5	12.5	65.8
	2001-3000 baht/time	19	4.8	4.8	70.5
	More than 3000 baht/time	118	29.5	29.5	100.0
	Total	400	100.0	100.0	

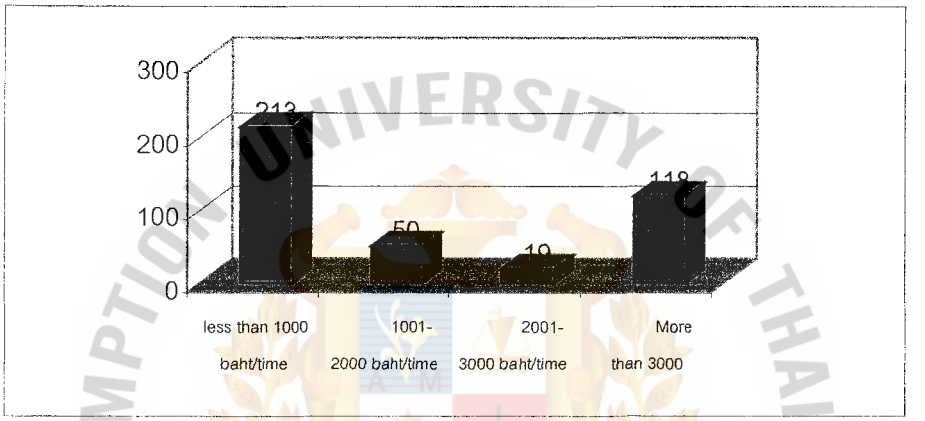

Figure 3.4. Buying Budgets.

From the result, it shows that most people (213 people or 53.3 percent) have buying budget less than 1,000 baht per time to buy marine products. Out of the remaining 118 people or equal to 29.5 percent have buying budget more than 3,000 baht per time, 50 people (12.5%) have buying budget between 1,001–2,000 baht and 19 people (4.8%) have buying budget 2,001–3,000 baht at a time.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	cash	326	81.5	81.5	81.5
	credit term	74	18.5	18.5	100.0
	Total	400	100.0	100.0	

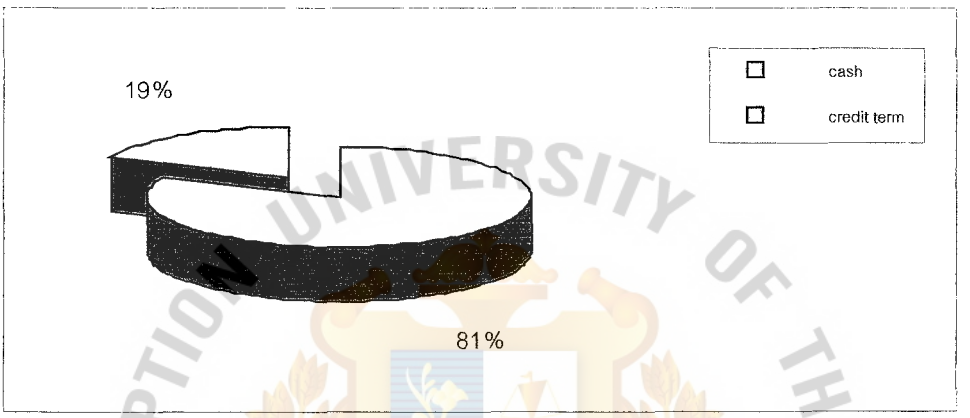

Figure 3.5. Kinds of Payment.

From the result, it shows that most people (326 people or equal to 81.5 percent) buy marine products at the existing marine market in cash whilst some people (74 people or equal to 18.5 percent) pay on account.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	regular customer	156	39.0	39.0	39.0
	irregular customer	244	61.0	61.0	100.0
	Total	400	100.0	100.0	

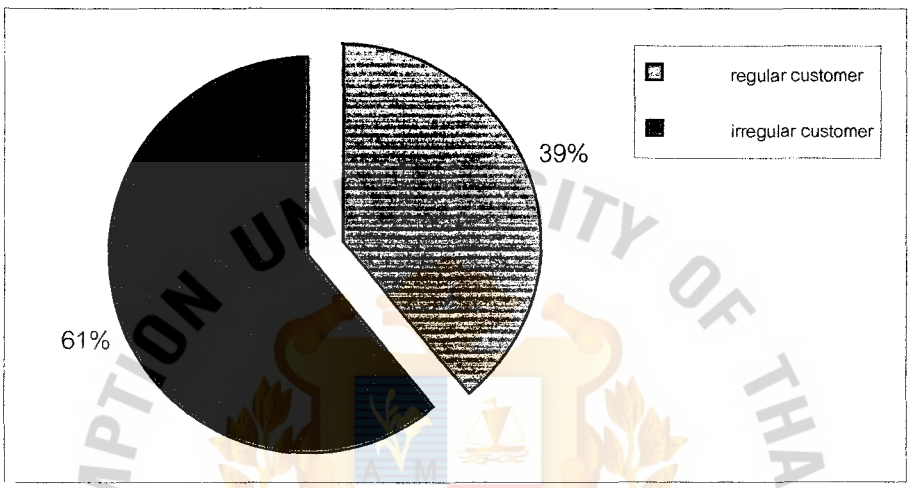

Figure 3.6. Buying Characters.

From the result, it shows that most people who come to buy marine products at the existing marine market 244 people or equal to 61 percent are irregular customers and remaining 156 people or equal to 39 percent are regular customers.

Group FACTORS Factors that make respondents come to buy

(Value tabulated = 1)

Dichotomy label	Name	Count	Pct of Responses	Pct of Cases
convenient transport	CONVENIENT	299	24.3	74.8
price	PRICE	328	26.7	82.0
quality of goods	QUALITY	298	24.3	74.5
safety	SAFETY	133	10.8	33.3
market layout	LAYOUT	75	6.1	18.8
parking lot services	PARKING	95	7.7	23.8
Total responses		1228	100.0	307.0

0 missing cases; 400 valid cases

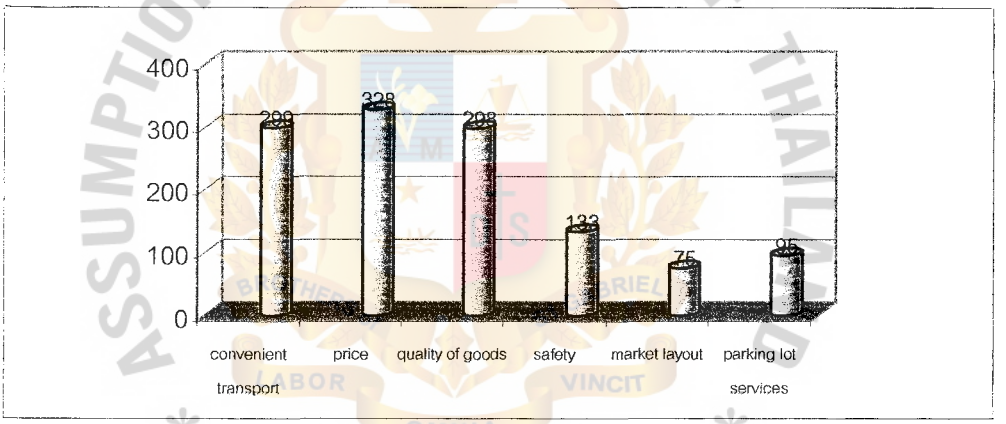

Figure 3.7. Factors for Buying Marine Products at Existing Market.

From the result, it shows that price of goods (26.7 percent) is the highest important factor, which can attract most people to buy marine products at existing marine market. Convenience of transportation (24.3 percent) and quality of goods (24.3 percent) are important respectively, while parking lots (7.7 percent) and market layout (6.1 percent) of existing marine market are not the main factors, which attract people to buy marine products here.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than or 5 days/time	47	52.8	52.8	52.8
	6-10 days/time	23	25.8	25.8	78.7
	11-15 days/time	9	10.1	10.1	88.8
	More than 15 days/time	10	11.2	11.2	100.0
	Total	400	100.0	100.0	

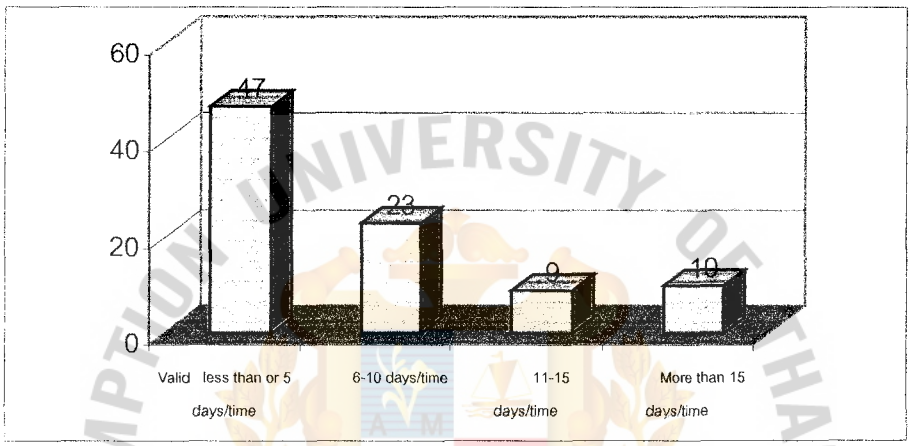

Figure 3.8. Periods of Time for Product Distribution.

From the results, it shows that most wholesalers (47 people or equal to 52.8 percent) do not take more than 5 days to distribute their marine products but some wholesalers 23 people or equal to 25.8 percent take 6-10 days per time, 10 people or equal to 11.2 percent take more than 15 days and 9 people or equal to 10.1 percent take 11-15 days per time to distribute their marine products.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	own storage	73	82.0	82.0	82.0
	Rent others' cold storage	16	18.0	18.0	100.0
	Total	89	100.0	100.0	

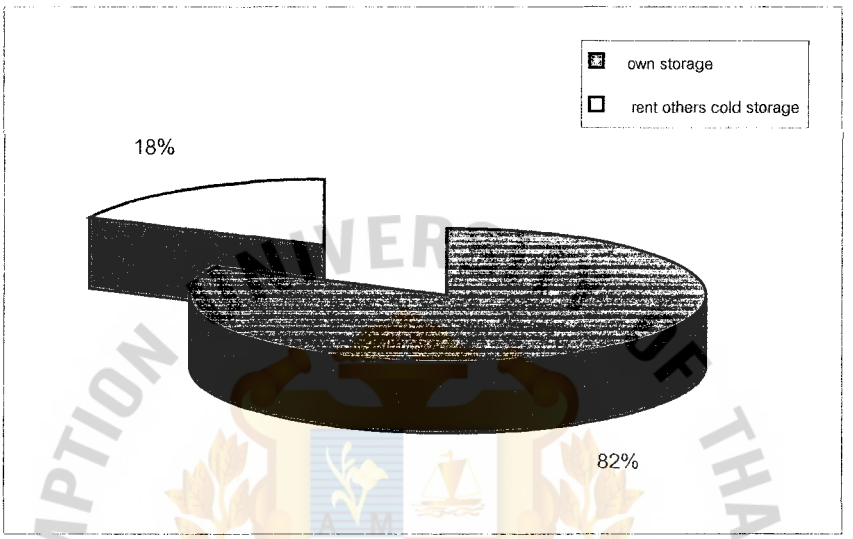

Figure 3.9. Stock Keeping Characteristics.

From the result, it shows that most wholesalers (73 people or 82 percent) have their own storage to keep their marine products for distribution and some of them do not have own storage and have to rent cold storage from others.

Group PROBLEM Problems that respondents face

(Value tabulated = 1)

Dichotomy label	Name	Count	Pct of Responses	Pct of Cases
Rotten	ROTTEN	39	4.7	10.2
Higher price	HIGHPRICE	146	17.5	38.2
Disordered Layout	DISORDER	314	37.7	82.2
Undersized	UNDERSIZ	101	12.1	26.4
Traffic jams	TRAFFIC	68	8.2	17.8
Impolite sellers	IMPOSELL	138	16.6	36.1
Others	OTHERS	27	3.2	7.1
Total responses		833	100.0	218.1

18 missing cases; 382 valid cases

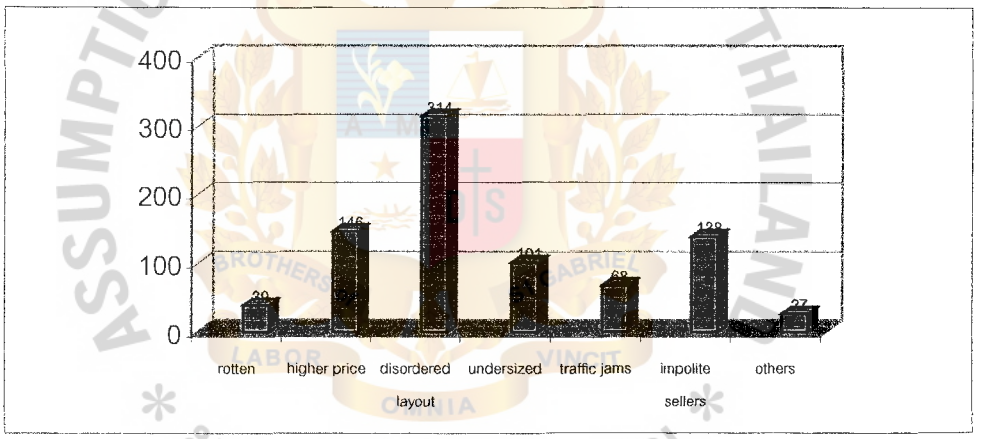

Figure 3.10. Problems in Buying.

From the result, it shows that the main problem for customers when they come to buy marine products at existing marine market is the disordered layout of the market (37.7 percent). However, price of goods (17.5 percent) and impolite sellers (16.6 percent) are also important problems. Undersized goods (12.1 percent) and other problems (parking lot services equal to 3.2 percent) are problems in buying too.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	338	84.5	84.5	84.5
	No	62	15.5	15.5	100.0
	Total	400	100.0	100.0	

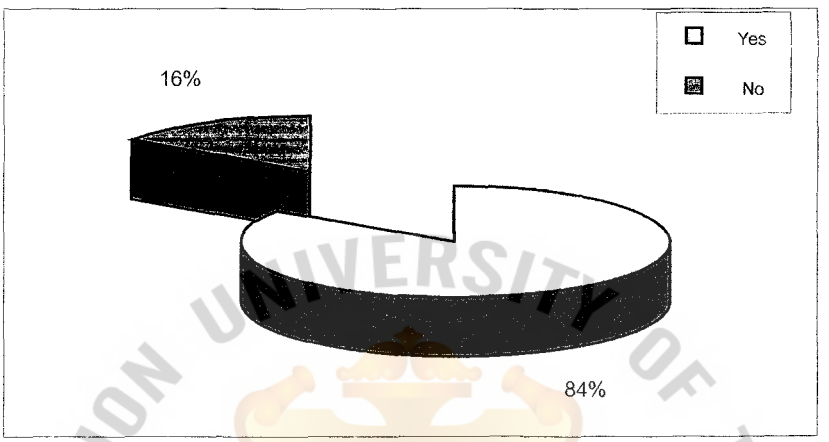

Figure 3.11. Project Acknowledgement.

From the result, it shows that most people (338 people) acknowledged the New Marine Market Center. However, there are some people (62 people) who did not acknowledge the project.

Group IMPROVE Requirements for NMMC Improvement

(Value tabulated = 1)

Dichotomy label	Name	Count	Pct of Responses	Pct of Cases
Convenient transport	CONTRAN	166	11.1	41.9
Market layout	LAYOUTS	294	19.7	74.2
Clean market	CLEAN	250	16.8	63.1
Good quality	GQUALITY	142	9.5	35.9
Good price	GPRICE	173	11.6	43.7
Sellers manner	sGSELLERS	185	12.4	46.7
Parking lots	PARK	231	15.5	58.3
Others	OTH	49	3.3	12.4
Total responses		1490	100.0	376.3

4 missing cases; 396 valid cases

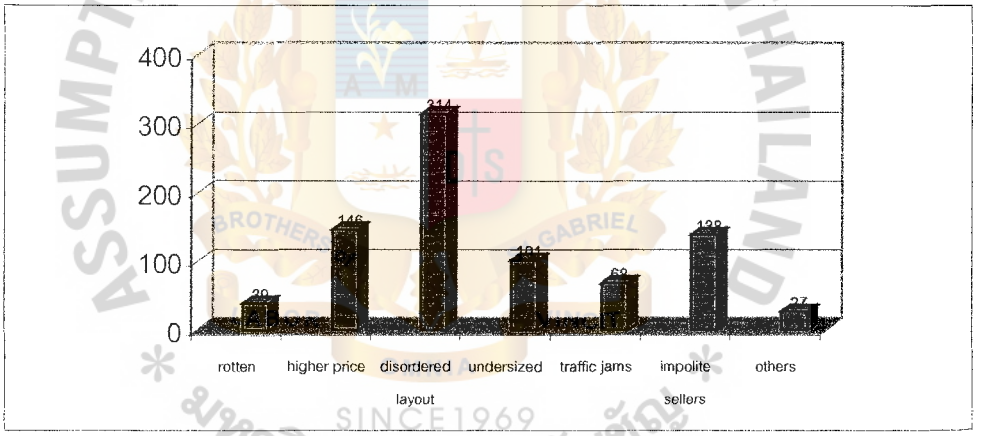

Figure 3.12. Requirements for NMMC Improvement.

From the result, it shows that most people require NMMC to improve market layout (19.7 percent), cleanliness of market (16.8 percent) and parking lots (15.5 percent) to be better than existing marine market.12.4 percent, 11.6 percent, 11.1 percent, 9.5 percent and 3.3 percent require improvements on sellers' manner, price, transportation, quality of goods and others (safety of market) respectively.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	86	21.5	21.5	21.5
	Disagree	181	45.3	45.3	66.8
	No Comment	133	33.2	33.2	100.0
	Total	400	100.0	100.0	

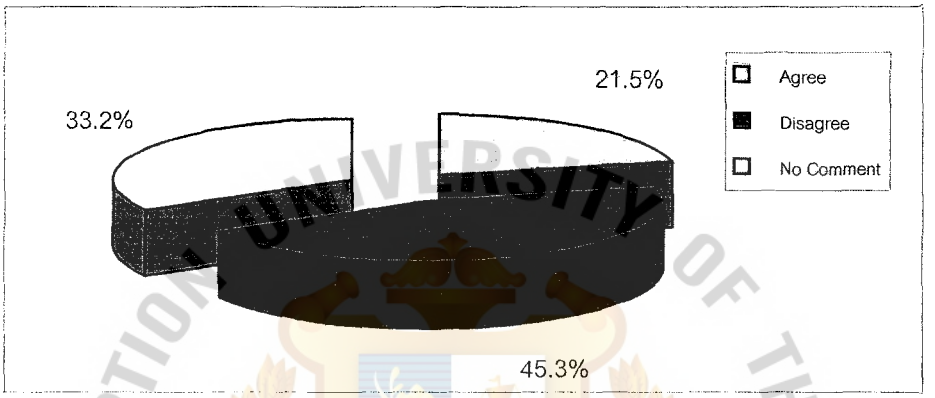

Figure 3.13. Attitudes toward Existing Marine Market Moving to NMMC.

From the result, it shows that most people (181 people) disagree to move the existing marine market to NMMC completely. For people who have no comment is equivalent to 133 people or 33.2 percent and last group is 86 people or equivalent to 21.5 percent who agree.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Channel 3	83	20.8	20.8	20.8
	Channel 5	38	9.5	9.5	30.3
	Channel 7	104	26.0	26.0	56.3
	Channel 9	60	15.0	15.0	71.3
	Channel 11	21	5.3	5.3	76.5
	ITV	94	23.5	23.5	100.0
	Total	400	100.0	100.0	

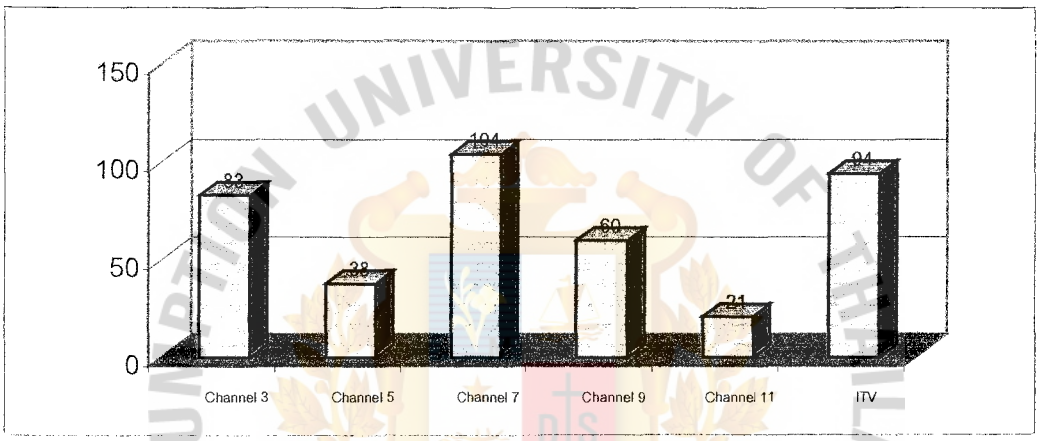

Figure 3.14. Frequency of TV Channel Watching.

From the result, it shows that channel 7 (26 percent) has the highest frequency of customer watching. There are 94 people or equivalent to 23.5 percent who watch channel ITV. And there are 20.8 percent, 15 percent and 9.5 percent of people who watch channel 3, channel 9 and channel 5 respectively.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	00.01 - 06.00 hours	21	5.3	5.3	5.3
	06.01 - 12.00 hours	114	28.5	28.5	33.8
	12.01 - 18.00 hours	139	34.8	34.8	68.5
	18.01 - 24.00 hours	126	31.5	31.5	100.0
	Total	400	100.0	100.0	

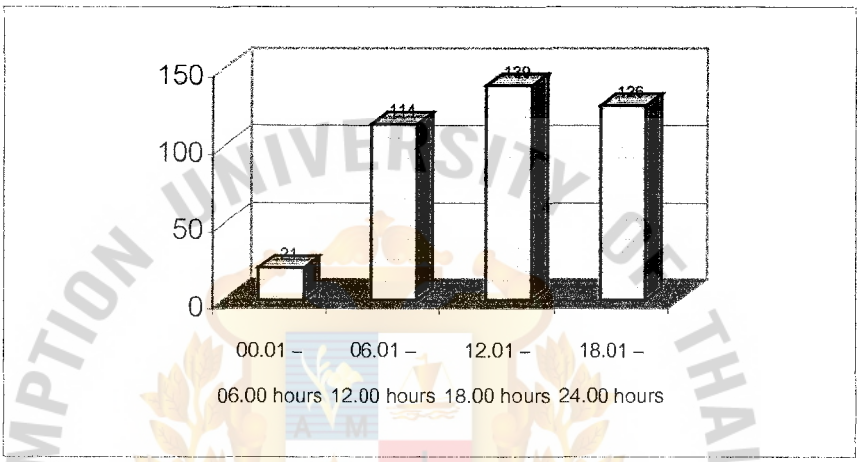

Figure 3.15. Frequency of Time Period for Watching TV.

From the result, it shows that the highest frequency of time period that respondents watch TV is 12.01–18.00 hours with 139 people or equivalent to 34.87 percent. Second is 18.01–24.00 hours, with 126 people or 31.5 percent. Third is 06.01–12.00 hours, with 114 people or 28.5 percent. Last is 00.01–06.00 hours, with 21 people or 5.3 percent.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	AM	159	39.8	39.8	39.8
	FM	241	60.3	60.3	100.0
	Total	400	100.0	100.0	

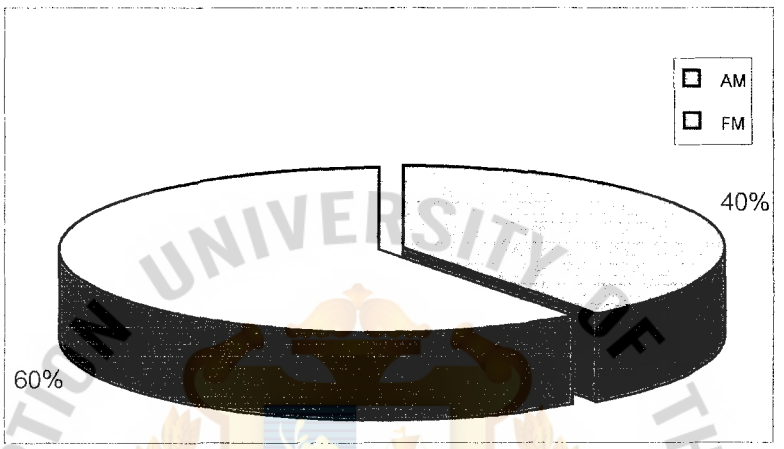

Figure 3.16. Frequency of Radio Wave Listening.

Frequency Modulation (FM) has the highest customer's interest to listen. There are 241 people or equivalent to 60.3 percent from a total of 400 respondents. Remaining people who do not listen to FM are interested to listen to AM (Amplitude Modulation) with 159 people or equivalent to 39.8 percent.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	00.01 - 06.00 hours	32	8.0	8.0	8.0
	06.01 - 12.00 hours	118	29.5	29.5	37.5
	12.01 - 18.00 hours	130	32.5	32.5	70.0
	18.01 - 24.00 hours	120	30.0	30.0	100.0
	Total	400	100.0	100.0	

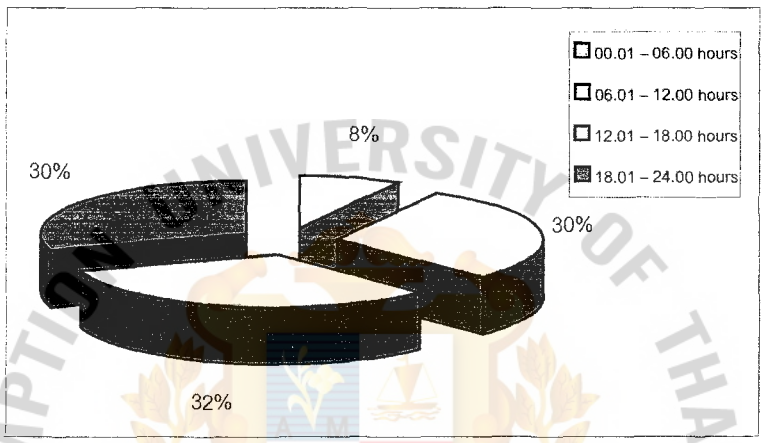

Figure 3.17. Frequency of Time Period for Listening Radio.

From the result, it shows that most respondents frequently listen to the radio at 12.01–18.00 hours with 130 people or equivalent to 32.5 percent. Second is 18.01–24.00 hours, with 120 people or 30 percent. Third is 06.01–12.00 hours, with 118 people or equivalent to 29.5 percent. Last is 00.01–06.00 hours, with 32 people or equivalent to 8 percent.

		Buying Times/Week				
		less than or 4 times/week	5-7 times/week	8-10 times/week	More than 10 times/week	Total
Interviewer	end consumer	130	134	29	18	311
	wholesaler	45	31	8	5	89
Total		175	165	37	23	400

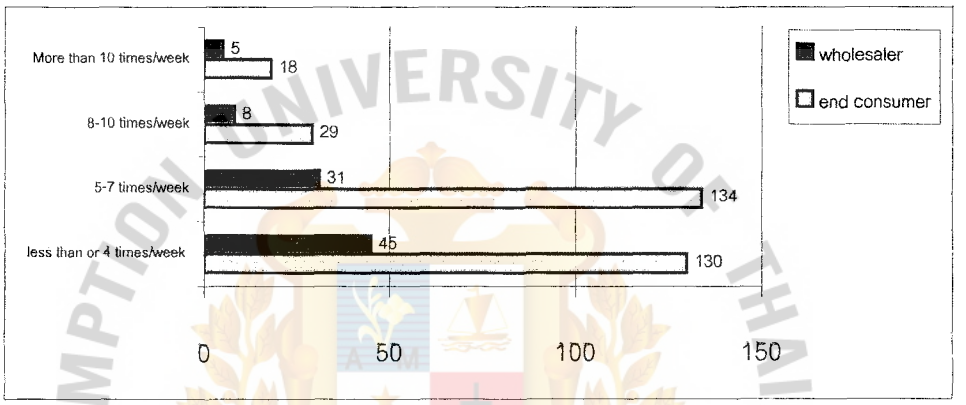

Figure 3.18 Relationship between Kinds of Respondent and Buying Time per Week

Most end consumers come 5–7 times per week to buy marine products at existing marine market. There are 134 people from a total of 311 end consumers. And there are 130 people, 29 people and 18 people who come less than or 4 times per week, 8–10 times per week, and more than 10 times per week, respectively.

For wholesalers, 45 people from 89 people come less than or 4 times per week to buy marine products. And there are 31 people, 8 people and 5 people who come 5–7 times per week, 8–10 times per week and more than 10 times per week, respectively.

		Buying Quantities/Time				
		Less than or 10 kg/time	11-20 kg/time	21-30 kg/time	more than 30 kg/time	Total
Interviewer	end consumer	263	30	8	10	311
	wholesaler	1			88	89
Total		264	30	8	98	400

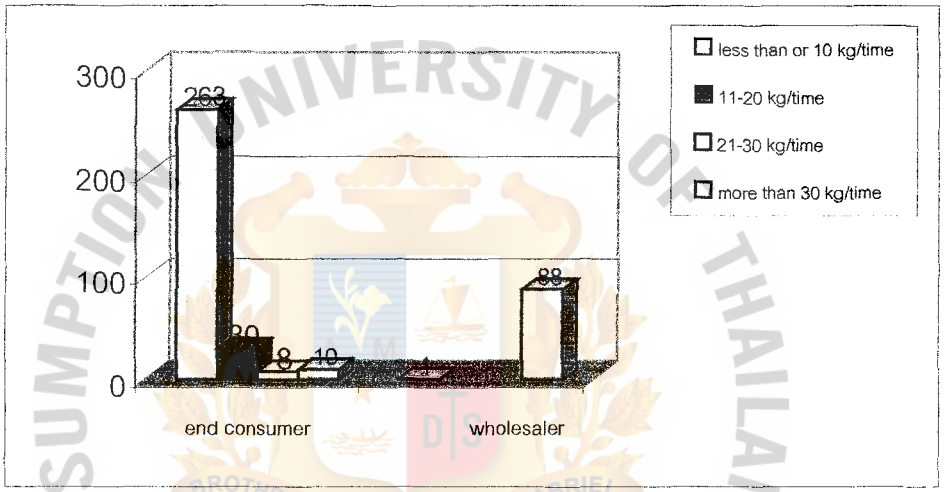

Figure 3.19. Relationship between Kinds of Respondent and Buying Quantities per Time.

From the result, it shows that most end consumers (263 people) buy less than or 10 kilograms of marine products per time whilst wholesalers (88 people) buy more than 30 kilograms per time and there is only one wholesaler this research who buys less than 10 kilogram per time. For buying 11–20 kilograms, more than 30 kilograms and 21–30 kilograms per time, there are 30 people, 10 people and 8 people respectively.

		Buying Budgets/Time				
		Less than or 1000 baht/time	1001-2000 baht/time	2001-3000 baht/time	more than 3000 baht/time	Total
Interviewer	end consumer	213	50	19	29	311
	wholesaler				89	89
Total		213	50	19	118	400

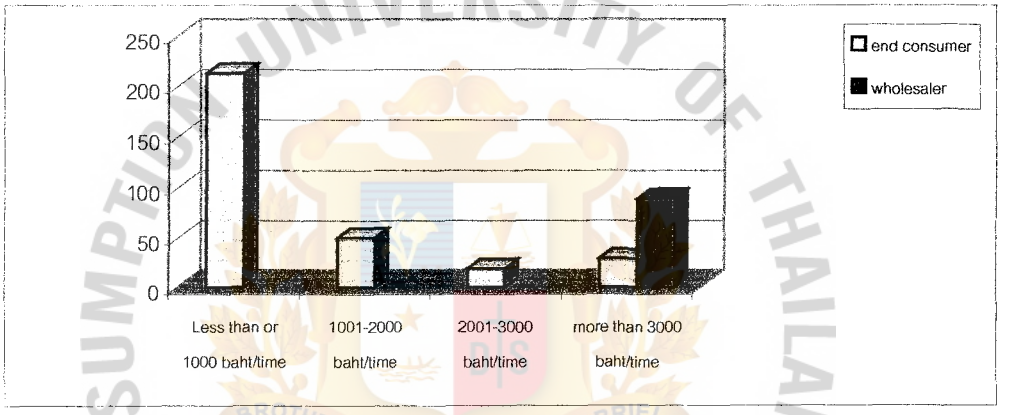

Figure 3.20. Relationship between Kinds of Respondent and Buying Budgets per Time.

From the result, it shows that most end consumers (213 people) have buying budgets less than or 1,000 baht per time whilst all wholesalers (89 people) have buying budgets more than 3,000 baht at a time. For end consumers who have buying budgets at 1,001 – 2,000 baht, more than 3,000 baht and 2,001 – 3,000 baht per time, are 50 people, 29 people and 19 people, respectively.

		Kinds of Payment		Total
		Cash	Credit Term	
interviewer	end consumer	311		311
	wholesaler	15	74	89
Total		326	74	400

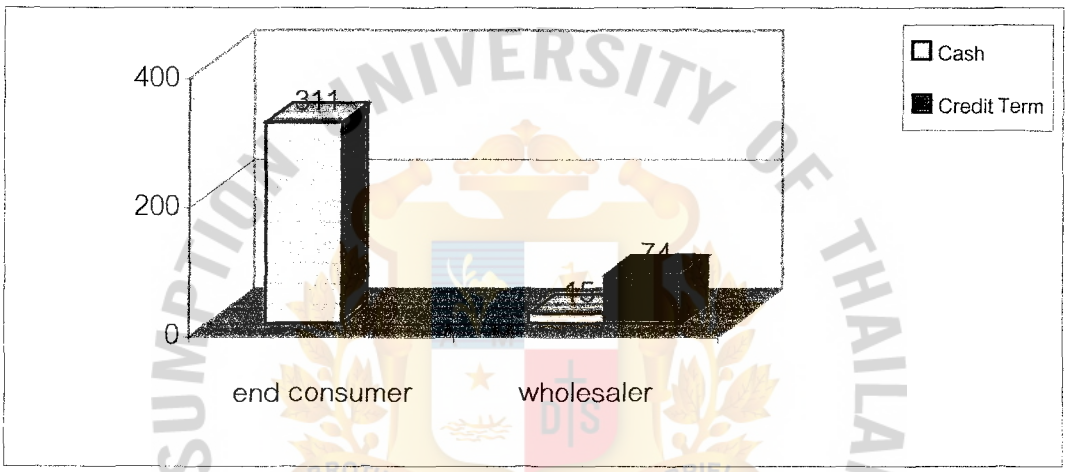

Figure 3.21. Relationship between Kinds of Respondent and Kinds of Payment.

From the result, all end consumers (311 people) buy marine products by cash; however, 15 wholesalers buy marine products by cash and 74 wholesalers buy it on credit.

		Buying Characteristics		Total
		regular customer	irregular customer	
interviewer	end consumer	71	240	311
	wholesaler	85	4	89
Total		156	244	400

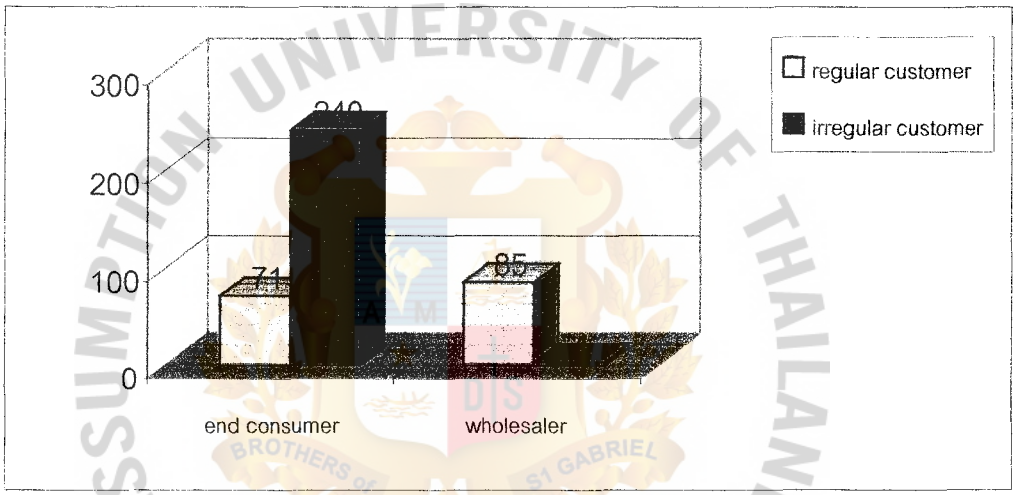

Figure 3.22. Relationship between Kinds of Respondent and Buying Characteristics.

From the results, most wholesalers (85 people from 89 people) are regular customers but there are only 4 people being irregular customers. And for end consumers, most of them are irregular customers (240 people from 311 people) and only 71 people are regular customers.

		Acknowledgement		Total
		Yes	No	
interviewer	end consumer	270	41	311
	wholesaler	68	21	89
Total		338	62	400

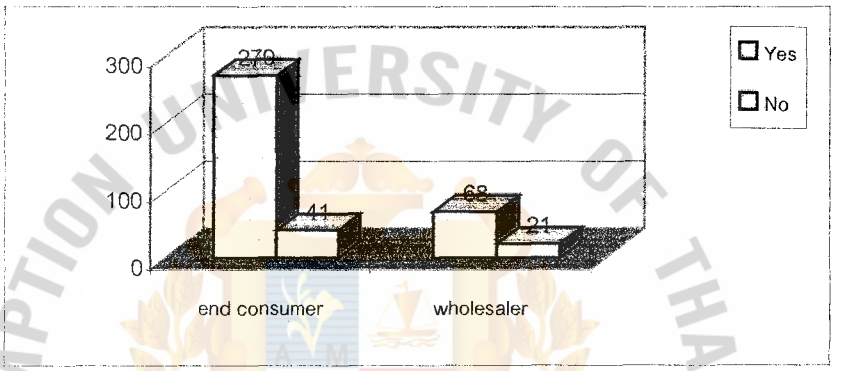

Figure 3.23. Relationship between Kinds of Respondents and Acknowledgement of NMMC.

From the result, it shows that most end consumers (270 people) and wholesalers (68 people) acknowledge New Marine Market Center Construction. There are 41 end consumers and 21 wholesalers who do not acknowledge the project.

		Market Movement			Total
		Agree	Disagree	No Comment	
interviewer	end consumer	58	154	99	311
	wholesaler	28	27	34	89
Total		86	181	133	400

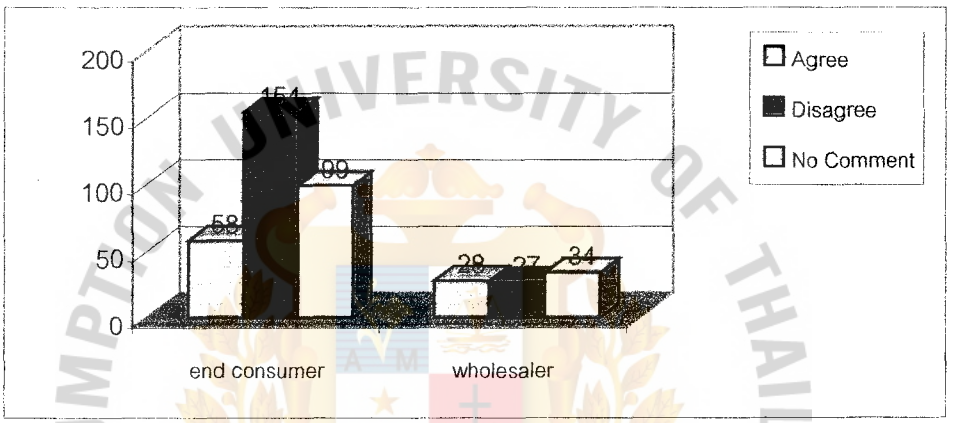

Figure 3.24. Relationship between Kinds of Respondent and Acceptance of Market Movement.

From the result, it shows that most end consumers (154 people) disagree to move the existing marine market to NMMC completely. However, most wholesalers (34 people) have no comment about the existing marine market. Nevertheless, there are 28 wholesalers, who agree and 27 wholesalers, who disagree.

		Buying Quantities/Time				
		less than or 10 kg/time	11-20 kg/time	21-30 kg/time	more than 30 kg/time	Total
Buying Times/Week	less than or 4 times/week	101	18	7	49	175
	5-7 times/week	118	11	1	35	165
	8-10 times/week	29			8	37
	more than 10 times/week	16	1		6	23
Total		264	30	8	98	400

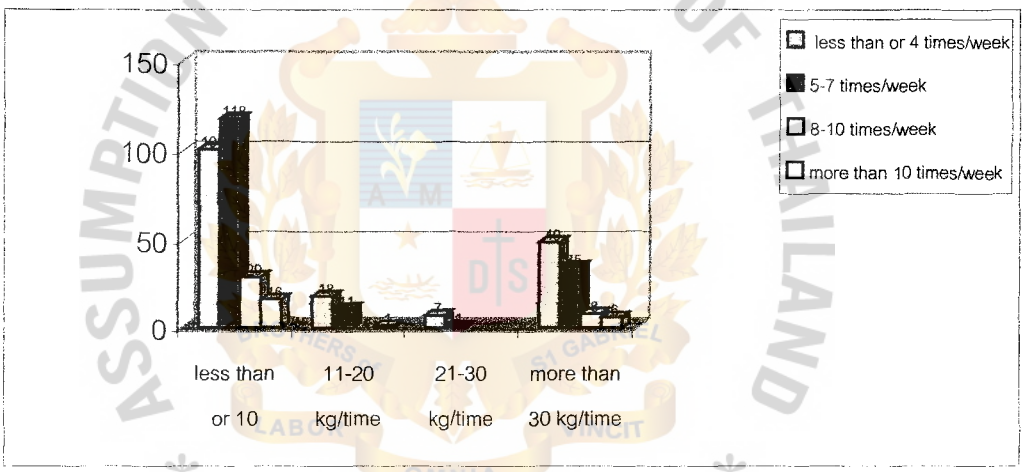

Figure 3.25. Relationship between Buying Time per Week and Buying Quantities per Time.

From the result, it shows that most customers (118 people) buy less than or 10 kilograms of marine products per time and come 5–7 times per week to buy at the existing market. Secondly, 101 people come to buy less than or 4 times per week at the same buying quantity (less than or 10 kilograms per time). Thirdly, 49 people come to buy less than or 4 times per week with more than 30 kilograms of buying quantity per time.

		Buying Budgets/Time				
		less than or 1000 baht/time	1001-2000 baht/time	2001-3000 baht/time	more than 3000 baht/time	Total
Buying Times/Week	less than or 4 times/week	92	12	15	56	175
	5-7 times/week	85	28	4	48	165
	8-10 times/week	23	6		8	37
	more than 10 times/week	13	4		6	23
Total		213	50	19	118	400

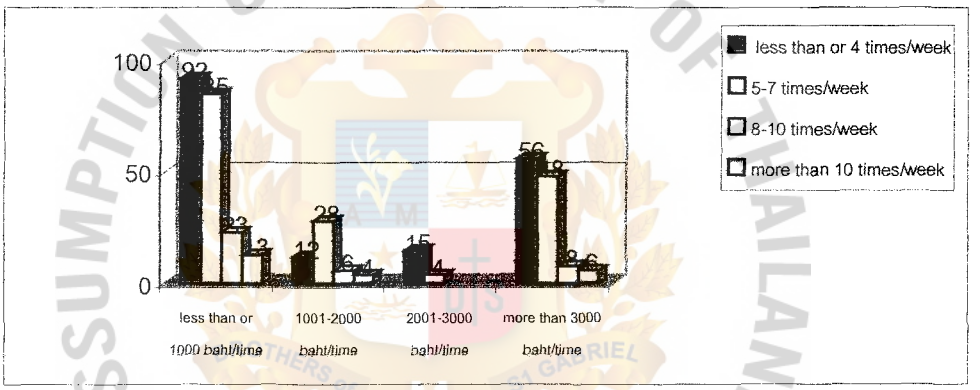

Figure 3.26. Relationship between Buying Time per Week and Buying Budgets per Time.

From the result, it shows that most customers (92 people) come to buy marine products less than or 4 times per week at the existing marine market with their buying budgets less than or 1,000 baht per time. Secondly, 85 people come 5–7 times per week at the same buying budgets (less than or 1,000 baht per time). Thirdly, 56 people come less than or 4 times per week with their buying budgets more than 3,000 baht per time.

		Buying Budgets/Time				
		less than or 1000 baht/time	1001-2000 baht/time	2001-3000 baht/time	more than 3000 baht/time	Total
Buying Times/Week	less than or 10 kg/week	206	50	7	1	264
	11-20 kg/week	6		10	14	30
	21-30 kg/week			2	6	8
	more than 30 kg/week	1			97	98
Total		213	50	19	118	400

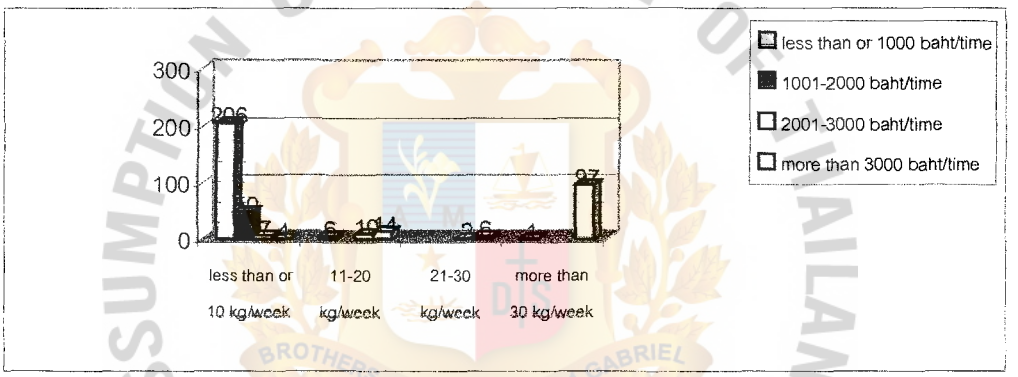

Figure 3.27. Relationship between Buying Quantities per Time and Buying Budgets per Time.

From the result, it shows that most customers (206 people) buy marine products less than or 10 kilograms with their buying budgets less than or 1,000 baht at a time. Secondly, 97 people buy the products more than 30 kilograms with their buying budgets more than 3,000 baht per time. Thirdly, 50 people buy the products less than or 10 kilograms with their buying budgets 1,001–2,000 baht at a time.

		TV Time				Total
		00.01 – 06.00 hr.	06.01 – 12.00 hr.	12.01 – 18.00 hr.	18.01 – 24.00 hr.	
interviewer	end consumer	13	112	136	50	311
	wholesaler	8	2	3	76	89
Total		21	114	139	126	400

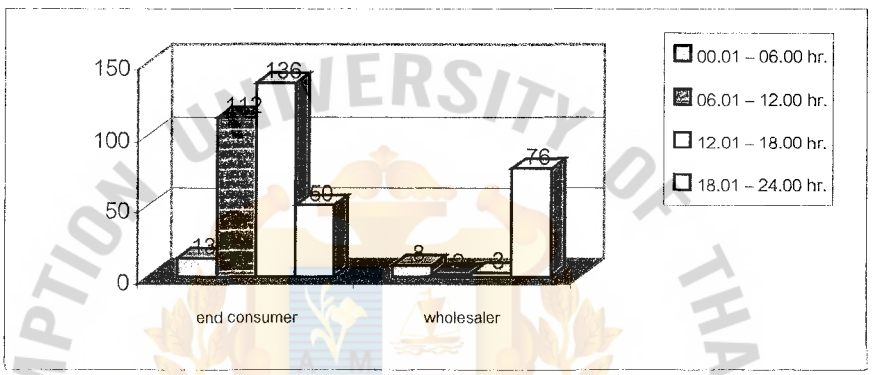

Figure 3.28. Relationship between Kinds of Respondent and Frequency of Time Period for Television.

From the result, it shows that most end consumers favor to watch television at 12.01–18.00 hours, with 136 people from 311 people. For 06.01–12.00 hours, 18.01–24.00 hours, and 00.01–06.00 hours there are 112 people, 50 people and 13 people, respectively. And most wholesalers favor to watch television at 18.01–24.00 hours, with 76 people from 89 people. For 00.01–06.00 hours, 12.01–18.00 hours and 06.01–12.00 hours there are 8 people, 3 people and 2 people, respectively.

		Radio Time				Total
		00.01 – 06.00 hr.	06.01 – 12.00 hr.	12.01 – 18.00 hr.	18.01 – 24.00 hr.	
interviewer	end consumer	14	116	126	55	311
	wholesaler	18	2	4	65	89
Total		32	118	130	120	400

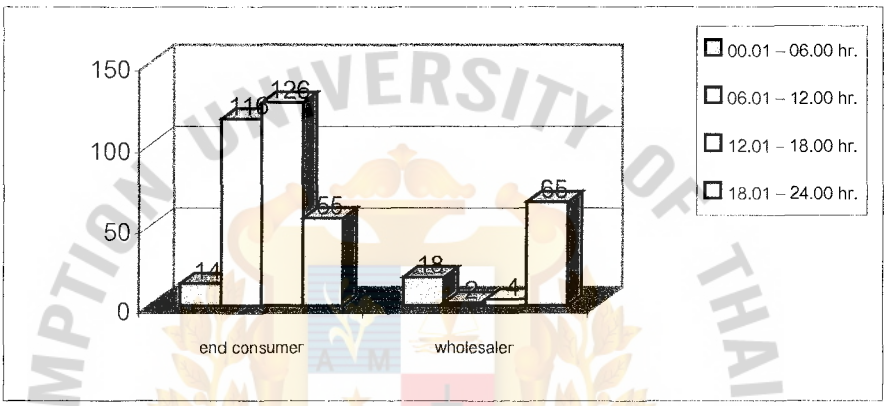

Figure 3.29. Relationship between Kinds of Respondent and Frequency of Time Period for Radio.

From the result, it shows that most end consumers frequently listen to the radio at 12.01–18.00 hours, with 126 people from 311 people. For 06.01–12.00 hours, 18.01–24.00 hours, and 00.01–06.00 hours there are 116 people, 55 people and 14 people, respectively. And most wholesalers frequently listen to the radio at 18.01–24.00 hours. There are 65 people from 89 people. For 00.01–06.00 hours, 12.01–18.00 hours, and 06.01–12.00 hours there are 18 people, 4 people and 2 people, respectively.

3.6 Reliability

The following figure shows alpha coefficient value.

****** Method 1 (space saver) will be used for this analysis ******
RELIABILITY ANALYSIS - SCALE (ALPHA)
N of Cases = 400.0 N of Items = 32
Alpha = .5468
From the above, alpha coefficient equals to 0.5468.

Figure 3.30. Reliability Analysis.

The confidence level is greater than five percent because it was caused by administrative errors. Sample selection error might be the cause of research bias because interviewers might interview the persons who were not target groups of the research. Secondly, data processing error might happen because too much data was keyed into the computer and there is possibility of pressing the wrong key. Finally, interviewer cheating might also be the cause of research bias because interviewers might fill up the questionnaires by themselves.

From the above result, the statistics will become more similar if interviewer has basic conversation with respondents before let them do questionnaires in order to ensure that target groups of research are selected. Secondly, researcher should have time to review total data keyed before printing the result out in order to avoid pressing the wrong key. Especially, researcher should have more concentration on distribution of questionnaire and having awareness about the failure or research from interviewer cheating.

IV. CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

The size of population totals 400 respondents. They are separated into end consumers, totaling 311 respondents and wholesalers totaling 89 respondents who come to buy marine products at existing marine market.

Nowadays, most people come to existing marine market for buying marine products less than or 4 times per week using a budget of less than or equal to 1,000 baht to buy marine products of 10 kilograms or less at a time. Most of them are irregular customers and use cash to buy the products. However, when respondents were separated in 2 groups of end consumers and wholesalers and brought them to relate with buying quantities, it is found that only end consumers mostly bought marine products 10 kilograms or less per time whilst most wholesalers bought more than 30 kilograms per time. As for the payment method of respondents, it is found that all end consumers who were our respondents in this research bought the products by cash and most wholesalers bought on credit. Moreover, it is found that most end consumers were irregular customers while wholesalers were mostly regular customers.

The important factors, which attract them to buy marine products at the existing market, are prices of goods, convenience of transportation and quality of goods.

To keep their marine products, most wholesalers have their own storage and try to distribute their products 5 days or less per time. And the problems that are often faced by the respondents are disorderly layout of market, high price of goods and traffic jam.

For project acknowledgement, most end consumers and wholesalers acknowledge the project construction and they would like the project to have improvement on market layout, cleanliness of market and parking lot service, respectively. Although they

mostly acknowledged the project construction, they disagreed to move the entire existing marine market to New Marine market Center (NMMC). When respondents were asked relating to acknowledgement of project construction and the acceptance of market movement, it is found that most end consumers acknowledged project construction. But they mostly disagreed to move the market whilst most wholesalers acknowledged project construction but they had no comment about market movement. It may be caused by weaknesses of NMMC's advertisement, as it cannot sufficiently transfer the information about NMMC to the general audience. Therefore, the weaknesses of advertisement cause people not to know the real objectives of NMMC and may bring failure to the business.

As for television channel, channel 7 was most frequently watched by respondents between 12.01–18.00 hours and for radio waves, the most popular wave that most respondents frequently listened to was FM (Frequency Modulation) between 12.01–18.00 hours. When respondents were asked relating to the time of television and radio, we found that most end consumers watched television at 12.01–18.00 hours and listened to radio at 12.01–18.00 hours while most wholesalers watched television at 18.01–24.00 hours and listened to radio at 18.01–24.00 hours.

4.2 Recommendations

From buying behavior studied, most people came to buy marine products for self-consumption. However, there were some people who came to buy marine products for distribution. Most end consumers who came to existing marine market around 4 times with their buying budgets less than 1,000 baht and buying marine products not more than 10 kilograms at a time were irregular customers and used cash to buy the products.

The results can be a guideline for NMMC management to set a promotional plan in order to attract people to buy marine products at NMMC more easily. Therefore, cutting price off promotion will be an appropriate promotion for attracting people. Because the results of research show that most people did not have too much buying budget. So, if they were able to buy more products from NMMC than existing marine market with the same buying budget, they would be satisfied to buy at NMMC more than buying at existing marine market. According to the wholesalers, they came to buy marine products more than 30 kilograms at a time for distribution. So, using discount price should be applied too. Nevertheless, they cannot buy marine products with credit at NMMC like buying at existing marine market but they can make higher profits with the same buying budget. Especially, offering NMMC's cold storage for rent to keep their marine products at reasonable rates, it will be the best proposal to the wholesalers because they do not want to waste time looking for rentable cold storage which is difficult to look for, especially at peak time when the rent rates are too high. Consequently, the quality of their marine products will go down because of time wasted looking for renting cold storage. This causes low selling price and then low profits received. Within 5 days at a time for distribution, NMMC management should be able to estimate the vacant time of cold storage so that they can previously estimate consecutive offering to their customers.

And the results of research shows that advantages of existing marine market are price of goods, convenience of transportation and quality of goods and disadvantages are disorderly layout of market, inadequate parking lots, safety, impolite sellers and traffic jams. For market layout, the project should have a layout plan of each area for the customers. Because end consumers who prefer to look for their goods by continuous walking or wholesalers who prefer to buy from accustomed sellers have to face the

disorderly market layout at the existing market. Hence, a layout plan for each area can offer more convenience and attract customers to buy the marine products at NMMC. About the impolite manner of sellers, undersized product, unreasonable prices and product quality, the top management of the project should not overlook these problems. They should have opinion boxes in order to receive customer's opinions and should appoint a surveyor team to operate continuous survey in each area in order to be in charge of market discipline. Training sellers is very important in order to correct their manner and it should be set in the plan schedule also. Because NMMC is located around 5 kilometers far from town, convenience of transportation for customers is an important factor that top management cannot disregard. Both government and private investments have the same thinking to move the local bus station to NMMC because the existing bus station is too old and narrow with many problems regarding the location whilst NMMC has sufficient area to receive more than 200 buses. With the wide area of NMMC and good traffic system set, the customers will not have parking lot problems and traffic stress.

For New Marine Market Center (NMMC), we found that most respondents acknowledged the project but they disagreed to move the existing marine market to NMMC completely. Therefore, NMMC management should always remember that failure of advertisement can bring about business failure. They should have more advertisement plan about the project in order to make the people aware about the project's information and news, especially, the objectives of the project, which will have most benefits to them directly. Nowadays, only locating billboards in front of the project and distributing handbills in Samutsakhon province have been done for advertisement. This is not sufficient to advertise the project in order to create the project's awareness to people. Television and radio are presently the most effective

media, which people frequently use to receive daily news and entertainment. Therefore, television and radio are presently selected to carry out NMMC advertisement. TV channel and radio wave, which are selected to do advertisement, are channel 7 at 12.01–18.00 hours and FM wave at 12.01–18.00 hours because from the results of research, we found that channel 7 and FM wave were mostly used at the said time.

APPENDIX A

QUESTIONNAIRE FOR NMMC RESEARCH

Questionnaire

1. Are you ?

_____ Wholesaler _____ End consumer

2. Purchasing Behaviors

2.1 How often do you come to buy marine products at this market ?

_____ Less than/or 4 times per week

_____ 5 - 7 times per week

_____ 8 - 10 times per week

_____ More than 10 times per week

2.2 How much quantity do you purchase per time ?

_____ Less than/or 10 kilogram

_____ 10 - 20 kilogram

_____ 21 - 30 kilogram

_____ More than 30 kilogram

2.3 How much budget do you have per time ?

_____ Less than/or 1,000 baht

_____ 1,001 - 2,000 baht

_____ 2,001 - 3,000 baht

_____ More than 3,000 baht

2.4 What is your kind of payment ?

_____ Cash _____ Credit Term

2.5 What is your purchasing character ?

_____ Regular customer _____ Irregular customer

2.6 What are the factors that make you to come and buy marine products at the existing market ? (can select more than 1 choice)

_____ Convenient transportation

_____ Price

_____ Safety

_____ Market Layout

_____ Parking lot services

_____ Others (please specify) _____

(For end consumers skip to question 4)

3. Product Distribution

3.1 After how long do you distribute the products in each time ?

_____ Less than/or 5 days

_____ 6 - 10 days

_____ 11 - 15 days

_____ More than 15 days

3.2 Where do you keep your stock ?

_____ Your own storage

_____ Renting other cold storage

4. What problems have you ever faced ? (can select more than 1 choice)

_____ Rotten goods _____ Undersized

_____ Higher prices _____ Traffic jams

_____ Disorderly Layout _____ Impolite sellers

_____ Others (please specify)_____

5. Concept tests of New Marine Market Center

5.1 Have you ever learnt about the Newly opened Marine Market Center in Mahachai ?

_____ Yes _____ No

5.2 What do you want the New Marine Market Center to do to have better improvement than the existing marine market ?

(can select more than 1 choice)

_____ Convenient transport _____ Prices

_____ Market layout _____ Sellers manner

_____ Cleanliness _____ Parking lots

_____ Goods quality

_____ Others (please specify)_____

5.3 Do you agree if this market is completely moved to the new market ?

_____ Agree

_____ No comment

_____ Disagree

6. Information acceptance behavior from media

6.1 What is the TV channel that you frequently watch ?

_____ Channel 3 _____ Channel 5

_____ Channel 7 _____ Channel 9

_____ Channel 11 _____ Channel ITV

6.2 What is the time that you frequently watch television ?

_____ 00.01 – 06.00 hours _____ 06.01 – 12.00 hours

_____ 12.01 – 18.00 hours _____ 18.01 – 24.00 hours

6.3 What is the radio wave that you often listen to ?

_____ AM _____ FM

6.4 What is the time that you frequently listen to the radio ?

_____ 00.01 – 06.00 hours _____ 06.01 – 12.00 hours

_____ 12.01 – 18.00 hours _____ 18.01 – 24.00 hours

Thank you very much for your valuable time for completing this questionnaire.

-------- End of interview --------

แบบสอบถาม

1. คุณคือ

_____ กลุ่มผู้ซื้อเพื่อนำไปขายต่อ _____ กลุ่มผู้บริโภค

2. พฤติกรรมการซื้อ

2.1 คุณมาซื้อสินค้าที่ตลาดแห่งนี้บ่อยเพียงใด ? (ครั้งต่อสัปดาห์)

_____ น้อยกว่า หรือ 4 ครั้งต่อสัปดาห์

_____ 5 - 7 ครั้งต่อสัปดาห์

_____ 8 - 10 ครั้งต่อสัปดาห์

_____ มากกว่า 10 ครั้งต่อสัปดาห์

2.2 จำนวนการซื้อต่อครั้งประมาณเท่าไร ?

_____ น้อยกว่า หรือ 10 กิโลกรัม

_____ 10 - 20 กิโลกรัม

_____ 21 - 30 กิโลกรัม

_____ มากกว่า 30 กิโลกรัม

2.3 งบประมาณการซื้อต่อครั้งประมาณเท่าไร ?

_____ น้อยกว่า หรือ 1,000 บาท

_____ 1,001 - 2,000 บาท

_____ 2,001 - 3,000 บาท

_____ มากกว่า 3,000 บาท

2.4 วิธีการชำระเงินของคุณคือ

_____ เงินสด _____ เงินเชื่อ

2.5 ลักษณะการซื้อสินค้าของคุณคือ

_____ มีเจ้าประจำ _____ ไม่มีเจ้าประจำ

2.6 ทำไมคุณถึงมาซื้อสินค้าที่ตลาดนี้ ?

_____ ความสะดวกในการเดินทาง _____ ราคา

_____ ความปลอดภัย _____ การจัดวางภายในตลาด

_____ ที่จอดรถ

_____ อื่นๆ (โปรดระบุ) _____

(สำหรับกลุ่มผู้บริโภคให้ข้ามไปทำข้อ 4)

3. การกระจายสินค้า

3.1 ระยะเวลาในการกระจายสินค้าต่อรอบการซื้อประมาณเท่าไร ?

_____ น้อยกว่า หรือ 5 วัน

_____ 6 - 10 วัน

_____ 11 - 15 วัน

_____ มากกว่า 15 วัน

3.2 คุณเก็บสต๊อกสินค้าที่ไหน ?

_____ มีสถานที่เก็บเป็นของตนเอง

_____ เช่าสถานที่เก็บของผู้อื่น

4. คุณเคยประสบปัญหาใดบ้างในการมาซื้อสินค้าที่ตลาดแห่งนี้? (ตอบได้มากกว่า 1 ข้อ)

_____ สินค้าเน่าเสีย _____ สินค้าไม่ได้มาตรฐาน

_____ สินค้าราคาแพง _____ การจราจรติดขัด

_____ การจัดวางไม่เป็นระเบียบ _____ ผู้ขายไม่สุภาพ

_____ อื่นๆ (โปรดระบุ)_____

5. ความคิดเห็นเกี่ยวกับศูนย์กลางตลาดสัตว์น้ำแห่งใหม่

5.1 คุณเคยทราบหรือไม่ว่าจะมีการเปิดศูนย์กลางตลาดสัตว์น้ำแห่งใหม่ในมหาชัย ?

_____ ทราบ _____ ไม่ทราบ

5.2 คุณอยากให้ตลาดใหม่มีการปรับปรุงให้ดีขึ้นกว่าตลาดที่มีอยู่ในปัจจุบันอย่างไร ?

(ตอบได้มากกว่า 1 ข้อ)

_____ ความสะดวกในการเดินทาง _____ ราคาสินค้า

_____ การจัดวางภายในตลาด _____ มารยาทผู้ขาย

_____ สถานที่สะอาด _____ ที่จอดรถ

_____ คุณภาพสินค้า

_____ อื่นๆ (โปรดระบุ)_____

5.3 คุณเห็นด้วยหรือไม่หากย้ายตลาดแห่งนี้ไปยังตลาดใหม่ทั้งหมด ?

_____ เห็นด้วย

_____ ไม่มีความคิดเห็น

_____ ไม่เห็นด้วย

6. พฤติกรรมการรับสื่อ

6.1 โทรทัศน์ช่องไหนที่คุณดูบ่อยที่สุด ?

_____ ช่อง 3 _____ ช่อง 5

_____ ช่อง 7 _____ ช่อง 9

_____ ช่อง 11 _____ ช่อง ไอทีวี

6.2 ช่วงเวลาที่คุณดูโทรทัศน์บ่อยที่สุด ?

_____ 00.01 – 06.00 น. _____ 06.01 – 12.00 น.

_____ 12.01 – 18.00 น. _____ 18.01 – 24.00 น.

6.3 คลื่นวิทยุช่องไหนที่คุณฟังบ่อยที่สุด ?

_____ AM _____ FM

6.4 ช่วงเวลาที่คุณฟังวิทยุบ่อยที่สุด ?

_____ 00.01 – 06.00 น. _____ 06.01 – 12.00 น.

_____ 12.01 – 18.00 น. _____ 18.01 – 24.00 น.

ขอขอบคุณทุกท่านที่เสียสละเวลาอันมีค่า เพื่อทำแบบสอบถามชุดนี้

-------- จบการสัมภาษณ์ --------

BIBLIOGRAPHY

English References

1. Denton, Keith D. How to Give Quality Service to Your Customer. Houston. Texas: Gulf Publishing Company Limited, 1995.
2. Duane, Davis. Business Research for Decision Making, Fourth Edition. United States: Wadsworth Publishing Company Limited, 1996.
3. Kinnear, Thomas C. and James R. Taylor. Marketing Research: An Applied Approach. Michigan: McGraw-Hill International, 1987.
4. Kolter, Philip. Marketing Management, Ninth Edition. United States: Prentice Hall International, 1997.
5. Howard, J.A. and Sheth. The Theory of Buyer Behavior. New York: Wiley, 1969.
6. Phipps, Resemary, and Craig Simmons. Understanding Customers. Chartered Institute of Marketing: Butterworth-Heinemann, 1995.

Web site Reference

1. http://www.coe.unt.edu/allen/Teaching/5480/samplesize.htm