UNIVERSITI PUTRA MALAYSIA

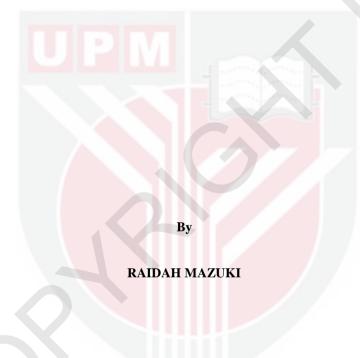*BENEFITS OF MODERN FISHERY TECHNOLOGY ADOPTION AMONGST COASTAL FISHERMEN IN WEST COAST OF MALAYSIA*

RAIDAH MAZUKI

IPSS 2016 2

BENEFITS OF MODERN FISHERY TECHNOLOGY ADOPTION AMONGST COASTAL FISHERMEN IN WEST COAST OF MALAYSIA

By

RAIDAH MAZUKI

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in fulfilment of the requirements for the Degree of Master of Science

April 2016

DEDICATION

This thesis is dedicated to my beloved family, Ayah (Mazuki Hashim) and Mak

(Salmah Md Isa) for their pure love and for being my first teachers, who taught me

to believe in Allah.

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Master of Science

BENEFITS OF MODERN FISHERY TECHNOLOGY ADOPTION AMONGST COASTAL FISHERMEN IN WEST COAST OF MALAYSIA

By

RAIDAH MAZUKI

April 2016

Chairman: Norsida Man, PhD

Institute: Institute for Social Science Studies

The purpose of this study was to describe the benefit of modern fishing technology adoption among the coastal fishermen in West Coast of Peninsular Malaysia. Specifically, the objectives for this research were 1) To determine the demographic profile of respondents, 2) To ascertain the level of independent variables (perceived ease of use-PEOU, perceived usefulness-PU, attitude-AT, compatibility-CP and subjective norm-SN) with dependent variable (the benefit of modern fishing technology adoption), 3) To identify the relationship between socio-demographic factors (age-X1, level of education-X2, level of income-X3, fishing experience-X4 and fishermen category-X5) with the benefit of modern fisheries technology adoption among the coastal fishermen community, and 4) to determine the relationship between technology acceptance constructs (perceived ease of use-PEOU, perceived usefulness-PU, attitude-AT, compatibility-CP and subjective norm-SN) and the benefit of modern fisheries technology adoption.

This study involved 30 licensed fishermen as respondents in pilot test and a total of 200 respondents to the actual data collection. This study employed a quantitative method using a set of questionnaire that was developed and adopted from previous research instruments. These studies were using a two stage cluster sampling. Respondents for this study are comprised of the coastal fishermen that were registered under *Persatuan Nelayan Kawasan (PNK)*. This study was conducted in four PNK which is PNK Sg. Besar, PNK Melaka Barat, PNK Teluk Kemang and PNK Batu Pahat.

The data were analyzed using SPSS. For purposes of analysis, descriptive and inferential analysis was used. Inferential analysis such as the Pearson correlation, Simple Linear Regression analysis also concluded that the only perceived usefulness

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and compatibility have a significant relationship towards the benefit of modern fishing technology adoption. Chi-square was tested to determine the selected socio-demographic and as a result only the level of income has a positive and significant correlation (χ^2 = 29.096), with significance level 0.000 towards the benefit of modern fishing technology adaptation of fishermen on the West Coast, Malaysia.

In short, after more than 30 years of fishing technology implementation, coastal fishermen can dispersed the benefit of using the modern fishing technology in their life as one revolution to enhance their socio-economic since the low level of modern fishing technology from this location study. Besides, they have their own commercial body after involved in PNK. Thus, the PNK, fisheries agencies with help of government should keep improve their programme in order to influence the coastal fishermen. It is to hope that the impact of modern fishing technology will be higher towards the coastal fishermen.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia
adalah untuk memenuhi keperluan untuk ijazah Master Sains

**MANFAAT MENGADAPTASI TEKNOLOGI PERIKANAN KEPADA
NELAYAN PESISIR PANTAI DI PANTAI BARAT SEMENANJUNG
MALAYSIA**

Oleh

RAIDAH MAZUKI

April 2016

Pengerusi: Norsida Man, PhD

Institut: Institut Pengajian Sains Sosial

Tujuan kajian ini adalah untuk menggambarkan manfaat penggunaan teknologi
perikanan moden di kalangan nelayan pantai di Pantai Barat Semenanjung Malaysia.
Secara khususnya, objektif kajian ini adalah 1) Untuk menentukan profil demografi
responden, 2) Untuk mengetahui tahap pembolehubah bebas (Tanggapan Mudah Guna-
PEOU, Tanggapan Kepengunaan-PU, Sikap-AT, Keserasian-CP dan Norma Subjektif -
SN) dengan pembolehubah bersandar (dari manfaat adaptasi penerimaan teknologi
perikanan moden), 3) mengenalpasti hubungan antara faktor-faktor sosio-demografi
(umur-X1, tahap pendidikan-X2, tahap pendapatan-X3, memancing pengalaman-X4
dan nelayan kategori-X5) dengan manfaat penggunaan teknologi perikanan moden di
kalangan masyarakat nelayan pantai, dan 4) untuk menentukan hubungan antara
konstruk penerimaan teknologi (Tanggapan Mudah Guna-PEOU, Tanggapan
Kepengunaan-PU, Sikap-AT, Keserasian-CP dan Norma Subjektif -SN) dan manfaat
penggunaan teknologi perikanan moden.

Kajian ini melibatkan 30 nelayan berlesen sebagai responden dalam kajian rintis dan
sejumlah 200 responden dengan pengumpulan data sebenar. Kajian ini menggunakan
kaedah kuantitatif dengan menggunakan satu set soal selidik yang telah dibangunkan
dan diambil daripada instrumen kajian sebelumnya. Kajian-kajian ini telah
menggunakan persampelan kluster secara dua peringkat. Responden bagi kajian ini
terdiri daripada nelayan pantai yang berdaftar di bawah Persatuan Nelayan Kawasan
(PNK). Kajian ini dijalankan di empat PNK yang PNK Sg. Besar, PNK Melaka Barat,
PNK Teluk Kemang dan PNK Batu Pahat.

Data dianalisis dengan menggunakan SPSS. Untuk tujuan analisis, analisis deskriptif
dan inferensi telah digunakan. analisis inferensi seperti korelasi Pearson, Mudah

analisis Regresi Linear juga membuat kesimpulan bahawa satu-satunya manfaat dan keserasian mempunyai hubungan yang signifikan terhadap faedah penggunaan teknologi perikanan moden. Chi-square telah diuji untuk menentukan yang dipilih sosio-demografi dan hasilnya hanya tahap pendapatan mempunyai hubungan yang positif dan signifikan ($\chi2 = 29,096$), dengan tahap kepentingan 0,000 terhadap faedah moden adaptasi teknologi penangkapan ikan nelayan di pantai barat semenanjung Malaysia.

Pendek kata, selepas lebih 30 tahun pelaksanaan teknologi penangkapan ikan, nelayan pantai boleh tersebar manfaat menggunakan teknologi perikanan moden dalam kehidupan mereka sebagai satu revolusi untuk meningkatkan sosio-ekonomi sejak tahap rendah teknologi perikanan moden dari lokasi kajian ini. Selain itu, mereka mempunyai badan komersial mereka sendiri selepas terlibat dalam PNK. Oleh itu, PNK, agensi perikanan dengan bantuan kerajaan perlu menyimpan meningkatkan program mereka untuk mempengaruhi nelayan pantai. Ia adalah untuk berharap bahawa kesan teknologi perikanan moden akan lebih tinggi ke arah nelayan pantai

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This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfillment of the requirement for the degree of Master of Science. The members of the Supervisory Committee were as follows:

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Date:

Declaration by graduate student

I hereby confirm that:

- this thesis is my original work;
- quotations, illustrations and citations have been duly referenced;
- this thesis has not been submitted previously or concurrently for any other degree at any other institutions;
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Declaration by Member of Supervisory Committee

This is to confirm that:

- the research conducted and the writing of this thesis was under our supervision;
- supervision responsibilities as stated in the Universiti Putra Malaysia (Graduate Studies) Rules 2003 (Revision 2012-2013) are adhered to.

Signature   : _____

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Chairman of
Supervisory
Committee   : _____

Signature   : _____

Name of
Member of
Supervisory
Committee   : _____

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LIST OF ABBREVIATIONS

NAP3	Third National Agricultural Policy
SSL	Self-Sufficiency Level
ICT	Information and Communication Technology
GPS	Global Positioning System
RSW	Refrigerated Sea Water
TRA	Theory of Reasoned Action
TAM	Technology Acceptance Model
IDT	Innovation of Diffusion Theory
FRI	Fishery Research Institute
LKIM	Fisheries Development Authority of Malaysia
SPS	Sanitary and Phytosanitary
PNK	Persatuan Nelayan Kawasan
NEKMAT	National Fishermen's Association of Malaysia
FCLP	Fisheries Comprehensive Licensing Policy
GRT	Gross Rate Tonnage

CHAPTER 1

INTRODUCTION

This chapter briefly explained the introduction of modern fishing technology and coastal fishermen community. Objectives and the significance of the study also included in this chapter. The last part of the chapter, it will clarify overall of the thesis organization.

1.1 The Benefit of Modern Fishing Technology and Coastal Fisherman Community

The Third National Agricultural Policy or NAP3 (1998-2010) focused on the need to increase domestic food production and sourcing of food strategically to ensure adequate supply and accessibility to safe, nutritious and high quality food at affordable prices. The food sub-sector was identified as the motivation to assist regenerate the economy and improve the trade of balance as well as to strengthen the food security when the economic turning down. Four major commodities has identified by the government that are considered strategic to food security which are rice, fisheries, livestock and vegetables. A number of strategies have been identified to raise the production of these commodities. As a result, the self-sufficiency level of several food commodities has improved. According to Table 1.1, the self-sufficiency level (SSL) for fisheries increased from 86 per cent in year 2005 to 104 per cent in year 2010.

Table 1.1: Percentage of Self-Sufficiency Level in Food Commodities, 2000-2010

Commodities	2000 (%)	2005 (%)	2010 (%)
Rice	70	72	90
Fruit	94	117	138
Vegetables	95	74	108
Fisheries	86	91	104
Beef	15	23	28
Mutton	6	8	10
Poultry	113	121	122
Eggs	116	113	115
Pork	100	107	132
Milk	3	5	5

Source: Ninth Malaysia Plan

In 2012, according to Department of Fishery (DOF), performance and achievements of the inshore landings fisheries recorded a small growth by 4.62% from 1,085,965 tonnes in 2011 to 1,136,182 tonnes in 2012. The advent of fishing technology remain fairly rudimentary since fishing is a major source of food for mankind, supplier jobs and economic. From ancient times, fishing also gives abundance of benefits to those who are engaged in this activity. The fisheries industry is another important element of the agricultural sector.

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In the last few decades, modern fishing technology has evolved by leaps and bounds, and the benefits of technology are there for all to see. It is unreasonably high cost sometimes which limits its usage and places it out of reach of many fishermen which was one of the biggest arguments against modern fishing technology. It is an undeniable fact that modern fishing technology has helped fishermen made many jobs easier, and it has also made the world a much smaller place. All of these benefits of technology are there for everyone to see. Albeit there are certain a negative impact of technology as well, nobody can say that technology has not aided society on a whole.

Fishing technology either capture technology or Information and Communication Technology (ICT) has profoundly altered relations between vessels and the shore (Chauvin, Morel & Tirilly, 2010) by the rapid dissemination and receiving information to any part of the world at any time. There are many potential benefits offered by the new and modern fishing technology. It is necessary to expose the modern technology to the rural community especially the fisherman community. The rural communities was found that there were lack of awareness, participation and knowledge in possessing the modern and new technology.

ICT allows fishermen to sort their life much better through communication on the phone, computer and internet usage, locate and find aquatic resources via Global Positoning System (GPS) and helps in recording the sale. Although the modern fishing technology tend to have English as a language, the social capital made it easy by sharing knowledge and teach the low level of education among the fishermen. Consequently, the modern fishing technology aided connecting the fishermen by sharing tools or devices and information among themselves.

On the other hands, capture technology was found out in helping the coastal fishermen enhancing the job performance by using the appropriate vessels and horse power engine. Refrigerated sea water (RSW) was necessary in helping to maintain the quality of the catches. For those, who can not afford to have RSW, they can used ice box which was cheaper. The size of the vessels give the impact on entering the fishery zone.

The Techology Acceptance Model has been widely applied in many areas such ad education and business context (Johnson & Johnson, 2005). Previous study have identified that perceived ease of use, perceived usefulness and attitude were giving impact on the usage of the modern fishing technology. However, up to date it was unclear whether the benefit of fishermen was connected through this model or not. Another study, In the fishery sector, the responsible agencies have to convey and advertise the new and modern technologies to the rural community. The extension agent were also responsible to monitor and assist the development of fishermen community by doing many activities and courses to encourage and market the important of the modern and new fishing technology.

Another study on technology impact on increasing in catch when using the modern fishing technology by Annabel (2013). Their study reviewed fishermen rely on

technology for safety and increasing the income and remind them from not entering the other fishing zone. However, not many studies and literature reviews were conducted regarding the benefit of modern fishing technology.

Among incentive scheme have been carried out by the government to the fishermen were fuel subsidy, fish landing incentive, cost living incentive and natural disaster fund. Fishery subsidies help the sector makes additional income than it or else would which from public entities to the fishing sector. Related to Bottom, Re, Of, & Subsidies, (2006) subsidies have gained worldwide attention because of their complex relation to trade, ecological sustainability and socioeconomic development especially for those in rural area. Then, Malaysia government has created a number of of modern fishing technology programs and projects after realizing the importance of the modern fishing technology for rural development such as vessel repairing training and fish finder program.

1.2 Statement of Problem

Modern fishing technology plays an important role in the development of fishermen. Fishing technology has increased efficiency and eased the work of fishermen. The ability of technology to select the type of fish (sonar) and enhance the safety using an advanced monitoring system (GPS) or advance vessel can be expected to increase the fishermen' income. Hence, fishermen have to prepare themselves with a good skills and enough knowledge. Yet, the dissemination of the knowledge is still lacking for this particular group with some reasons. The acceptance of technology was still at the low level among the coastal fishermen in Malaysia (Raidah, 2014; Abd. Kadir & Sohor, 2009). The factors of knowledge, skill, attitude, business capital, vessel types and fishing gear technology will influence their technology adoption (Hamzah, Krauss, Shaffril, Suandi, Ismail, and Abu Samah, 2013;Goodwin, 2003; Flewwelling, 1999).

Past studies have indicated a relationship between the technology adoption and age where increase in age will slow down the adoption (Morrell and Ventakesh., 2000). On the other hand, Young (2000) and Czaja, Charness, Fisk, Hertzog, Nair, Rogers and Sharit (2006) indicates that younger generation is more pleasant to adopt and use the modern technology among the rural community. Then, for those who posses higher education and higher management group seems to use modern fishing technology to complement their work (Macharia and Pelser, 2014; Thompson, 2001). Other than that, according to Ventakesh & Davis (2000) rural people who have higher income readily adopt technology as they are better able to acquire fishing technology.

They have the financial capability to buy or add to their modern fishing technology. Technology trainings have significant effect on technology adoption and adoption (Oliveira and Martins, 2011; Kotrlik and Redmann, 2009). But, the training and the seminars must be provided constantly if the community want to be improved. Based on Musa, Md. Salleh, Hayrol Azril & Jeffrey Lawrence (2009), the lack of training is one of the reasons why there is lack of technology adoption among the rural community.

Moreover, other than the demographic factors, there are a number of eminent factors that were linked with the modern technology adoption among the rural community and the factors are perceived usefulness, perceived ease of use, attitude, compatibility and subjective norm (Vishwanath & Goldhaber, 2003). Perceived usefulness has been discovered to be a consistent factor in influencing the individual to use the modern technology (Lippert & Forman, 2005).

Apart from perceived usefulness, compatibility can influence fishermen in the rural community to use the technology. Gulbahar and Guven (2008) described that technology is much related to technical features and experience. Evan (2009) also clarified that compatibility is the perception that a particular innovation is related with current understanding of similar and past ideas. Next, subjective norm is another factor that sway on technology adoption for those people who lives in rural area (Samsudin, Bolong, Omar, D'Silva, Sahharon and Shaffril, 2015; Abu Samah, Mohamed Shaffril, D'Silva and Abu Hasan, 2010).

This study will fill up the gap in the current literature by integrating some of the constructs of the Technology Acceptance Model (TAM) with other theory which are perceived usefulness, perceived ease of use, attitudes. Other than that, this study will also studied the demographic factors. Moreover, TAM was applied in many technology studies related to technologies such as academician, financial and medical but not on coastal fishermen, therefore this research is necessary to be done. Positive attitude considered to boost and drive the coastal fishermen to use the modern fishing technology and enjoy the benefit. User acceptance was pivotal factor that determine how the technology give them benefit: whether it is good or bad?

All the factors mentioned above influenced the modern technology adoption but do these factors have any influence and by chance they will have the benefit on modern fishing technology adoption among the coastal fishermen? The fishermen plays a vital role for aquatic landings resources. The benefit of the modern fishing technology is important for their development and work. It was recognized that there was a lack of studies being carried out to comprehensively identify the reasons why coastal fishermen in West Malaysia do not use modern fishing technology. Therefore, the focus of this study to explore the factors that influence the modern fishing technology adoption among the coastal fishermen.

1.3 Objectives of Study

1.3.1 General Objective

The general objective of this study is to describe the benefit of modern fishing technology adoption among the coastal fishermen in West Coast of Peninsular Malaysia.

1.3.2   Specific Objectives

The specific objectives are:

1) To determine the demographic profile of respondents,
2) To ascertain the level of independent variables (perceived ease of use-PEOU, perceived usefulness-PU, attitude-AT, compatibility-CP and subjective norm-SN) with dependent variable (the benefit of modern fishing technology adoption),
3) To identify the relationship between socio-demographic factors (age-X1, level of education-X2, level of income-X3, fishing experience-X4 and fishermen category-X5) with the benefit of modern fisheries technology adoption among the coastal fishermen community,
4) To determine the relationship between technology acceptance constructs (perceived ease of use-PEOU, perceived usefulness-PU, attitude-AT, compatibility-CP and subjective norm-SN) and the benefit of modern fisheries technology adoption.

1.4   Significance of the Study

A knowledgeable society is hard to achieve, therefore by exposing the benefit modern fishing technology is ideal to unite and decrease the digital gap among the rural community. It continuously to be nurtured, improved and adapted. With the existence of the modern fishing technology, it brings different people together where an arrangement of people can come together to discuss and sharing the knowledge of the benefit of the modern fishing technology. Subjective norm can foster social trust among the rural community, create stronger social bonds and bring about positive quality of life (Jusang, 2011). As modern fishing technology requires adaptation, the young generation has to learn and absorb the manageable equilibrium of modern fishing technology in their social environment. Therefore, the benefit if modern fishing technology as an option to combat the illiteracy and poverty among the rural community and create unity between the fishermen community.

1.5   Contribution towards Knowledge

Academically, this study extends the existing technology adoption literature and hope to contribute additional insight into technology adoption studies among fishermen in Malaysia. The data gained can be used to develop knowledge resources relating to the benefit of modern fishing technology by Malaysians. Moreover, the data gained are expected to demonstrate the potential new modern fishing technology in improving the rural communities through the digital divide.

Furthermore, there are lack of studies related to the benefit of modern fishing technology adoption among the coastal fishermen., this community would gain much benefit and knowledge on which level they are now. Significantly, there were a lot of modern fishing technology can be exposed by giving the proper programs and demonstration to the specific target group according to the results. Hence, it is believed

that findings of this study will add new perception on the benefit of the innovative modern fishing technology among the coastal fishermen. It will be a good reference point fo related parties, researchers and students who aim to further determine and ascertain the benefit of modern fishing technology. This study would like to delve more on the TAM within the fishermen in a Malaysia context and its relevance among fishermen as benefit of modern fishing technology.

1.6   Contribution to Practice

This study endeavors to build interpersonal relationship skills among coastal fishermen by providing a research base on the benefit of modern fishing technology. This study provides a platform for coastal fishermen to perceived the benefit of modern fishing technology usage by sharing and exchange knowledge among the community. In order to enhance the knowledge of the benefit of modern fishing technology, the rural community would collaborate with the related parties to do a demonstration about the new fishing technology in the market. The study can also instil a positive attitude towards the benefit of modern fishing technology among the coastal fishermen in rural area.

Furthermore, the data gained can educate and create awareness amongst the general public, related agencies or parties on the use of the fishing applications, service and facilities encompassing the many benefits of modern fishing technology and applications in enhancing quality of life and lifelong learning. In a sense towards practice, it contributes points to key areas that benefit of modern fishing technology can lead improvement of a social community in rural community.

1.7   Contribution to Policy

Other than that, this study will also reveal the impact of fisheries extension program to coastal fishermen. The recommendation and the findings from this study may also facilitate DOF to formulate policies, strategies and programs to strengthen fishermen extension program and thus, improve the fishery development and production in Malaysia. The findings of these study will be useful to the policy makers to see the increasing demand for the modern fishing technology in the rural area. The level of usage of the modern fishing technology among coastal fishermen will reveals the expected results by the government on the technology investement for the rural area. On the other hand, from the field of extension agent this study will yield additional insight to the relationship between the extension agent and fishermen community.

1.8   Term Definition

Conceptual and operational definitions are two items which commonly being higlighted in social science study.

1.8.1 Benefit of Modern Fishing Technology Adoption

In this study, the benefit of modern fishing technology adoption means the advantage of the modern fishing technology used by the coastal fishermen would be measured in terms how perceived community on regards to the technology to enhance their work and performance. Thus, it is related to the benefits of the two types of modern fishing techbology which is capture technology and ICT technology.

1.8.2 Modern Fishing Technology

Modern fishing technology is defined as a tool or device that will help the fishermen to catch aquatic resources. In this study, the modern fishing technology refers to vessel and devices that was used by the fishermen. The modern fishing technology was categorized into two parts which are 1) capture technology and 2) ICT technology. The technology may be different in term of fishing zone area.

1.8.3 Adoption

According to Rogers (2003), adoption is a choice of decision of utilize the innovation that available. In this study, it refers to the adoption of modern fishing model for coastal fishermen community. Technology adoption was the main factor to facilitate their job.

1.8.4 Coastal Fishermen

According to the Department of Fisheries (DOF), coastal fishermen is considered as a registered fisherman who are authorized to do the fishing between Zone A and Zone B in Economic Exclusive Zone (EEZ) with a specific type of vessels and equipment.

1.8.5 Rural Area

Rural area considered as a settlement comprises all type of villagers with the small settlement of 10,000 population. It is also symbolize with agricultural and natural resources area (Department of Rural Development). Moreover, below are others factors that had been highligted to define rural areas:

    a) Population size of the minimum and maximum;
    b) Population density;
    c) The level of urbanization;
    d) The level of community facilities and quality of life.

1.8.6 Technology Acceptance Construct

In this study, the technology acceptance construct are the factors that induce the decision of the adoption of the technology. These constructs are perceived usefulness, perceived ease of use, compatibility, attitude and subjective norm.

1.8.7 Perceived Ease of Modern Fishing Technology Adoption

On regards to Davis (1993), perceived ease of use as to what extent the person believe that using modern and innovative echnology would be effortless. Hence, in this study it indicates how the coastal fishermen view the benefit of the modern fishing technology to be physical and mental effort.

1.8.8 Perceived Usefulness towards Modern Fishing Technology Adoption

Davis (1993) defines perceived usefulness as when a person believe that by using the innovative and modern technology can help them to perform better in their work. Thus, in this study, perceived usefulness refers to the believe of coastal fishermen that adopting the modern fishing technology would be constructive and enhance the job performance.

1.8.9 Attitude towards Modern Fishing Technology Adoption

According to Fishbein and Ajzen (1975), attitude define as perrson's positive or negative feeling towards something (example: idea or behaviour). Attitude is a key factor that driven people to expose either to like or dislike the modern fishing technology adoption among the coastal fishermen.

1.8.10 Compatibility towards Modern Fishing Technology Adoption

Rogers (1983), stressed that technology compatibility with technology or new ideology will affect a person's decision to accept or reject to adopt the modern technology. Hence, in this study, compatibility would be the coastal fishemern working or lifestyle compatibility with the tools or deivices that is available when using the modern fishing technology.

1.8.11 Subjective Norm of Modern Fishing Technology Adoption

Taylor and Todd (1995) indicates that perceives or support from others will execute specific behaviour towards a new technology. The social cohesiveness among the coastal fishermen will reflect the decision of the adoption on the modern fishing technology.

1.9 Limitations of the study

The findings of this research will not reflect the fishermen population in Malaysia, as the respondents only involves registered coastal fishermen. Then, full time and part time fishermen were not separated as a respondent. As mentioned before the technology was categorized into two types which is catching tools and ICT tools. Modern fisheries technology refers to a lot of tools that been using for catching aquatic

resources. On top of it, this study encompasses all the modern fisheries technology in general.

Other than that, the data will also be subjected to the weather in Malaysia. This may reflect the income of the respondents in general. There was also imbalance between the proportion of male and female respondents. There were more male fishermen as fishing is primarily a male dominated activity due to a high risk and safety of being a fisherman.

1.10 Thesis Organization

This section will wrap up with how the thesis is being organized. This study contains of five chapters covering various areas of the study.

Chapter 1 gives wider introduction of modern fishing technology towards coastal fishermen and a clear picture of the issues involved in the study. It contains the introduction, problems statement, objectives, research questions and significance of the study.

Chapter 2 provides a literature review of the most latest and important that related to these studies. Other than that, the dimensions involved in the study are also discussed in detail.

Next, in Chapter 3, the methodology adopted in this study is presented. This chapter discusses about the research design including questionnaire as the instrument of study, details about the location of study, population and sample method, data collecting technique and analysis conducted for the study.

Chapter 4 will review the results and analysis of this study.

Finally, Chapter 5 will deliberate the conclusion and provide recommendations for future study in this field.

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