UNIVERSITI PUTRA MALAYSIA

DETERMINANTS OF POVERTY AMONG COASTAL FISHERMAN CREWS IN KELANTAN AND TERENGGANU, MALAYSIA

ALI MOHAMED OMAR RHOUMAH

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By

ALI MOHAMED OMAR RHOUMAH

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DETERMINANTS OF POVERTY AMONG COASTAL FISHERMAN CREWS IN KELANTAN AND TERENGGANU, MALAYSIA

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Chairman : Associate Professor Ismail Bin Abd Latif, PhD
Faculty : Agriculture

The poverty issue has become one of the most challenges problem is facing the United Nation since 1978 when planned to reduce extreme poverty around the world. The number of people who left extreme poverty line is increasing for example, in China about 200-300 million have lifted an extreme poverty during the period 1978-2000s. Furthermore, the worldwide poverty was reduced from 900 million in 2012 to about 700 million in 2015 (Millennium Development Goals). However, there are hundreds of millions of children still out of schools and do not have access to basic needs such as health care, electricity, and clean water. The majority of poor people is located in Sub-Saharan Africa and south Asian countries such as Pakistan, Myanmar and Vietnam.

The Malaysian Government has started to reduce poverty early since 1970s and had successfully reduced poverty from 49.3% in 1970 to 1.6% in 2015. The great success was as the result of economic growth and policy the Malaysian Government had made. Despite of this success there is remain areas and sectors live in poverty that may because the monetary approach does not reflect the multidimensional poverty.

The general objective of this study is to analyze the determinants of poverty among coastal fishermen crew in Kelantan and Terengganu and specific objectives are to profile socioeconomic variables, measure the rate of poverty, poverty gap and severity poverty, also to analyze the relationship between poverty and socioeconomic factors.

The states of Kelantan and Terengganu selected as the study area because they have the highest number of licensed fishermen and also they have poor households. The primary data collected by using stratified random sampling during the period December 2009 to July 2010. The sample size was 662 respondents 315 from Terengganu and 347 from Kelantan. The SPSS software used to get the demographic

profile of the fishermen households, to measure poverty was used Headcount Index, Poverty Gap Index, Severity Poverty and the Binary Logistic model used to estimate the indicators that influence the household economic status.

The finding showed that most of the fishermen in both states are young or in the middle age, not highly educated and they have an income range between RM300 and RM2000. Moreover, the poverty was high extreme and normal/relative poverty, the Gini coefficient shown that there is a large gap between highest income and lowest income fishermen. The result of binary logistic showed that household size, marital status, income, education level, and having any type of transport such as motorcycle are the main indicators influence the household poverty. Whereas, the household durable goods and ICT they have positive sign but not significant. Therefore, the Government should support the fishing community with future investments to set them for better capitalization via development programs and cooperate societies. In addition, the Government should provide more credit facility that will increase the participation in the fishing sector. Moreover, the Government should also create some other profitable income generating for people living in the coastal areas. Finally, the Government should supply more housing for fishermen communities as most of them live in wood or semi-stone housing.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk Ijazah Master Sains

PENENTU KEMISKINAN DI KALANGAN CREWS COASTAL FISHERMAN DI KELANTAN DAN TERENGGANU, MALAYSIA

Oleh

ALI MOHAMED OMAR RHOUMAH

Januari 2017

Pengerusi : **Profesor Madya Ismail Bin Abd Latif, PhD**
Fakulti : **Pertanian**

Isu kemiskinan telah menjadi salah satu yang paling cabaran masalah yang dihadapi oleh negara yang bersatu sejak 1978 apabila merancang untuk mengurangkan kemiskinan di seluruh dunia. Bilangan orang yang meninggalkan garis kemiskinan melampau semakin meningkat sebagai contoh, di china 200-300 juta telah ditarik balik garis kemiskinan yang melampau dalam tempoh yang 1978-2000s. Tambahan pula, kemiskinan di seluruh dunia dikurangkan daripada 900 juta pada tahun 2012 kepada kira-kira 700 juta pada tahun 2015 (Matlamat Pembangunan Milenium). Walau bagaimanapun, terdapat beratus-ratus berjuta-juta kanak-kanak masih di luar sekolah dan tidak akses kepada keperluan asas seperti penjagaan kesihatan, elektrik, dan air bersih. Majoriti orang-orang miskin terletak di Sub-Sahara Afrika dan negara-negara Asia selatan seperti Pakistan, Myanmar dan Vietnam.

Di Malaysia, Kerajaan Malaysia telah mula untuk mengurangkan kemiskinan awal sejak tahun 1970-an dan mempunyai kejayaan untuk mengurangkan kemiskinan daripada 49.3% pada tahun 1970 kepada 1.6% pada tahun 2015. Kejayaan besar adalah sebagai hasil daripada pertumbuhan ekonomi, program, dan dasar kerajaan Malaysia telah dibuat. Walaupun kejayaan ini terdapat kekal bidang dan sektor hidup dalam kemiskinan yang mungkin kerana pendekatan monetari tidak mencerminkan kemiskinan pelbagai dimensi.

Objektif utama kajian ini adalah untuk menganalisis penentu kemiskinan di kalangan anak-anak kapal nelayan pantai di Kelantan dan Terengganu, dan objektif tertentu adalah ke profil pembolehubah sosio-ekonomi, untuk mengukur kadar kemiskinan, jurang kemiskinan, dan tahap kemiskinan, juga untuk menganalisis hubungan antara kemiskinan dan faktor-faktor sosio-ekonomi.

Negeri-negeri Kelantan dan Terengganu dipilih sebagai kawasan kajian kerana mereka mempunyai jumlah tertinggi nelayan berlesen dan juga mereka mempunyai beribu-ribu isi rumah miskin. Data primer yang dikumpul oleh Jabatan Perikanan dengan menggunakan persampelan rawak berstrata dalam tempoh Disember 2009 hingga Julai 2010. saiz sampel adalah 662 responden 315 dari Terengganu dan 347 dari Kelantan. Perisian SPSS digunakan untuk mendapatkan profil demografik isi rumah nelayan, untuk mengukur kemiskinan telah digunakan Indeks Headcount, Indeks Gap Kemiskinan, Keparahan Kemiskinan, dan model *Binary Logistic* yang digunakan untuk menganggarkan penunjuk yang mempengaruhi status ekonomi isi rumah.

Temuan tersebut menunjukkan bahwa sebagian besar nelayan di kedua negara tersebut masih muda atau di usia paruh baya, tidak berpendidikan tinggi dan memiliki rentang pendapatan antara RM300 dan RM2000. Selain itu, kemiskinan adalah melampau tinggi dan kemiskinan normal/saudara, pekali Gini yang menunjukkan bahawa terdapat jurang yang besar antara pendapatan tertinggi dan nelayan berpendapatan rendah. Hasil logistik binari menunjukkan bahawa saiz isi rumah, status perkahwinan, pendapatan, tahap pendidikan, dan mempunyai apa-apa jenis pengangkutan seperti motosikal merupakan petunjuk utama mempengaruhi kemiskinan isi rumah. Manakala, barang tahan isi rumah dan ICT mereka mempunyai tanda positif tetapi tidak ketara. Oleh itu, Kerajaan harus menyokong masyarakat nelayan dengan pelaburan masa depan untuk menetapkan mereka untuk permodalan yang lebih baik melalui program-program pembangunan dan kerjasama masyarakat. Di samping itu, kerajaan perlu menyediakan lebih banyak kemudahan kredit yang akan meningkatkan penyertaan dalam sektor perikanan. Selain itu, kerajaan juga perlu mewujudkan beberapa lain yang menjana pendapatan menguntungkan bagi orang-orang yang tinggal di kawasan pesisir pantai. Akhirnya, kerajaan harus membekalkan lebih banyak perumahan bagi masyarakat nelayan kerana kebanyakan mereka tinggal dalam kayu atau separa batu perumahan.

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I certify that a Thesis Examination Committee has met on 19 January 2017 to conduct the final examination of Ali Mohamed Omar Rhoumah on his thesis entitled "Determinants of Poverty among Coastal Fisherman Crews in Kelantan and Terengganu, Malaysia" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Master of Science.

Members of the Thesis Examination Committee were as follows:

Nolila binti Mohd Nawi, PhD
Senior Lecturer
Faculty of Agriculture
Universiti Putra Malaysia
(Chairman)

Norsida binti Man, PhD
Associate Professor
Faculty of Agriculture
Universiti Putra Malaysia
(Internal Examiner)

Nalini d/o Arumugam, PhD
Associate Professor
Universiti Sultan Zainal Abidin
Malaysia
(External Examiner)

NOR AINI AB. SHUKOR, PhD
Professor and Deputy Dean
School of Graduate Studies
Universiti Putra Malaysia

Date: 2 June 2017

This thesis was submitted to the Senate of the 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:

Ismail Bin Abd Latif, PhD
Associate Professor
Faculty of Agriculture
Universti Putra Malaysia
(Chairman)

Nitty Hirawaty Kamarulzaman,PhD
Associate Professor
Faculty of Agriculture
Univesiti Putra Malaysia
(Member)

ROBIAH BINTI YUNUS, PhD
Professor and Dean
School of Graduate Studies
Universiti Putra Malaysia

Date:

Declaration by graduate student

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Name and Matric No: Ali Mohamed Omar Rhoumah , GS41128

Declaration by Members 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) were adhered to.

Signature:	
Name of Chairman of Supervisory Committee:	Associate Professor Dr. Ismail Bin Abd Latif

Signature:	
Name of Member of Supervisory Committee:	Associate Professor Dr. Nitty Hirawaty Kamarulzaman

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DOF	Department of Fisheries
GDP	Gross Domestic Product
GRT	Gross Registered Tonnage
ICT	Information and Communications Technology
OECD	The Organization for Economic Cooperation and Development
UNICEF	United Nations Children's Emergency Fund
UNDP	United Nations Development Program
FA	Fishermen's Association
FGT	The Foster-Greer- Thorbecke
HCI	Headcount Index
PGI	Poverty Gap Index
SP	Severity of Poverty
TE	Time to Exit Poverty

CHAPTER 1

INTRODUCTION

1.1   Introduction

Poverty is one of the major problems in the world. The poverty in the world is about 700 million (12% of global population) are living in extreme poverty or less than $1.90 a day (World Bank, 2015). The united nation development goal is to end the extreme poverty by 2030. For instance, in China 200-300 million in last 30 years from 1978 to 2000s have left extreme poverty line. Despite of this success, there are many populations still unable to access education, health care and thousands of children die before their fifth birth. The number of children who out of school in poorest countries about 58 million (UNICEF, 2012). However, there is great success in reducing the number of women and girls who died each year in the childbirth from 523,000 in 1990 to 289,000 in 2013. Therefore, the question; why the poverty is still high and what is the cause of poverty.

In Malaysia, the Government had been focusing on eradicating poverty regardless of race and ethnicity since the 1970s. Malaysia has successfully reduced the poverty rate from 49.3% in 1970 to 1.6% in 2014 (11th Malaysian Plan, 2016). Hence, the focus now is to re-orient to elevate the income levels of the bottom 40% households. Households, which are within this bracket, irrespective of their race and ethnicity or location, will be eligible for support and resources based on their specific needs. By the end of the 10th Malaysia Plan, the government targets to reduce the poverty rate from 3.8% in 2009 to 2% in 2015. It also aims to increase the mean income of the bottom 40 % households from RM1, 440 in 2009 to RM2, 300 in 2015. Furthermore, the Government planned to reduce the Gini coefficient from 0.44 in 2009 to 0.42 in 2015 in order to improve the overall inequality in income. The 9th Malaysia Plan reveals the growing inequality in terms of income and other dimensions among the households in Malaysia.

There is a significant gap between the rural and urban dwellers, developed and less developed areas in terms of income inequality. Although the average mean monthly household income is increasing and progress has made to reduce poverty, the proportion of income received by households in developed areas is higher than less developed areas. Thus, rural dwellers are still living in poverty whereby their source of income is agriculture and fishing, especially for those who are living in coastal areas. Nik Hisham (2011) found in his study on economic analysis of fishery development policy that the fisheries sector is a traditional and associated with two main issues, namely low productivity and employment, which in term leaded to low income to the fishermen's families. In 2007 for example, the poverty rate in rural areas is 7.1%, but only 3.8% in urban areas. The Ninth Plan of poverty reduction in Malaysia (2006-2010) placed fishermen among 70,000 poor households in terms of income and access to basic amenities in the rural and agricultural areas. Hence, in Malaysia poverty is a rural phenomenon. This shows that in order to reduce poverty there is a

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need to do research based on rural areas whereby there is a limited source of income. Consequently, the main aim of this research is to measure poverty and its determinants among the fishermen in the area of study.

1.2 Definitions of Poverty and Poverty Line

Poverty is essentially defined as inability to achieve the minimum standard of living and having the deficient income to buy the significant necessities of life, for instance food, clothing and shelter. However, the World Bank defines poverty as living on less than $2 every day per individual as a fundamental neediness pointer in developing countries. As indicated by the United Nation Development Program (UNDP), poverty is not a one-dimensional issue or lack of income, but multidimensional issues that need a wide range of solution for a wide range of problems. Therefore, the multidimensional definition includes low education levels, bad housing conditions, poor health care, and lack of adequate Sanitation, clean water and others.

1.2.1 Absolute Poverty Line

The absolute poverty line is essentially characterized as the lowest level of income or consumption used to make refinements between poor and non-poor and therefore is the separation line used to differentiate individual with income below the poverty line as poor while others non-poor and remain constant over time.

Rowntree (1901) developed the poverty line utilizing of items made up of every one of those basic goods and services expected to meet the base sustenance prerequisites in the household. The poverty threshold is set utilizing the financial estimation of this basket plus a fixed amount of money aimed at covering different sorts of consumption, for instance, petrol or rent. Each household whose income is not as much as this figure will be classified as poor.

1.2.2 Relative/Normal Poverty Line

The relative poverty line considers the status of each individual or household in relation to the status of other individuals or households in the community. The relative poverty line is usually set at around 50-70% of the average or median income in the country and differs from country to another country. The Government used relative poverty line to compare changes in income over time. Therefore, any person fall below 50% of average income considered poor. Relative poverty line ordinarily utilizes pointers in view of monetary factors, for example income or expenditure consumption. In both cases, a minimum variable level is fixed which; individuals are named poor and non-poor.

1.3 Malaysian Policy and Strategies for Reducing Poverty

The Malaysian Government has begun ahead to diminish poverty among all ethnic groups since 1970 when the rate of poverty was 49.3% and has been lessened to 2% in 2015. The considerable accomplishment in decreasing poverty was a positive economic growth during that period and projects to improve living conditions of rural households from the first plan until the Tenth plan (2010-2015). Malaysia as World Bank classification considered is a middle-income country that means per capita income range from$7000-$9000 in 2010 the target of 11th plan to become developed nation (Higher income nation) that means the per capita income will increase to $15000-$17000 by 2020.

Eight Plan of poverty diminishment in Malaysia (2000-2005) is focused to upgrade the education of the poor and low-income groups through educational bolster programs, higher education loans, enhancing exclusion of rural students, improving the infrastructure of rural schools, enhancing the personal satisfaction for poor groups through better health and nutrition program, availability of water, electricity, transportation and communication. Furthermore, the eighth plan target was to improve income-generating activities among low-wage groups, particularly in rural and agricultural sectors through incorporating commercial farming, land amalgamation, group farming.

The Ninth Plan (2006-2010) of poverty eradication target was to raise the capacity for knowledge and advancement and nature "first class mentality; to enhance the standard and maintainability of personal satisfaction or quality of life; to decrease employment disparity, and reduce assets and wealth disparity. Likewise, the plan tended to industrious socioeconomic inequalities constructively and productively; and developing competitive Bumiputra entrepreneurs. Besides, the Malaysian Government empowered the poor to access to education and training within a support program (textbooks, scholarship, loans and supplementary food schemes, hostels for children of poor families).

The 10th Malaysia Plan (2010-2015) means to totally annihilate no-nonsense poverty and upgrade the efficiency of low-wage family units. In that heading, it has institutionalized the meanings of poverty and low-income group. These standard definitions will push organizations to rapidly identify and help the objective gatherings and arrange their consolidated endeavors adequately. In addition, the Plan will upgrade the expectations for everyday comforts of the bottom 40% family unit's through more open doors for upward monetary versatility. Offering chances to upgrade capacities in industry significant and concentrated on topography ranges through, among others, mechanical association and occupations are attempts at making open doors for upward financial flexibility. Supervisors will be associated with capacity pool in rural regions. Furthermore, more prominent support will be given to those hoping to set up claim associations through the incorporated arrangement of preparing, financing and key gear to expand business and work openings.

1.4   Poverty and Income Distribution in Malaysia

According to the Midterm Review Report of the Ninth Malaysia Plan (2006 to 2010), the average household income had continued to rise from RM3, 249 in the year 2004 to RM3, 686 in the year 200.   Positive economic growth has generated many employment opportunities that helped to raise the income levels of Malaysian. All the ethnic groups in Malaysia enjoyed a rise in the household income during this period. In 2007, the average monthly household income of Bumiputera had increased by 5.2% to RM3,156, whereas the Chinese households enjoyed a 3.0% rise to RM4, 853 while the Indian households have a 3.2% increase to RM3, 799.

The rise in the household income managed to improve the disparity among the rural dwellers and urban dwellers from1:2.11 in the year 2004 to 1:1.19 in the year 2007. This undoubtedly surpasses the target set at 1:2.0 by the year 2010 in the 9th Malaysia Plan. The disparity between the average income of the Bumiputera community and the Chinese community has also improved as the disparity ratio has declined from 1:1.64 in the year 2004 to 1:1.54 in the year 2007. The disparity with the Indians has improved from 1:1.27 in the year 2004 to 1:1.20 in the year 2007. During this period, more importance has been accorded to human capital development through skills enhancement and incorporation of positive values. The main objective of the plan was increasing the income share of the lowest 40% of households and creating a larger and more prosperous middle-income group.

Despite of these improvements in average household income, the fisheries sector still has a higher rate of poverty. Yeo et al (2007) demonstrated that over 80% of the husbands, fisheries on the East Coast of Peninsular Malaysia did not have any paid employment, and around 70% of the household incomes were from fisheries. Thus, only one-third of the households were above the poverty line. According to (EPU, 2009; 2011) the poverty in rural areas, particularly in Kelantan (10.6%), Terengganu (15.4%), Kedah (7%) and Sabah (19.7%) remain unchanged in spite of the achievements in poverty reduction programs.

The distribution of income among Malaysian households has improved during period 2012 and 2014 as seen in the Table 1.1. The groups earning an income below RM2, 000 reduced from 22.6% to 11.7% while there was a significant increase among groups, which have income above RM10, 000. The average monthly income for rural households increased from RM3, 080 in 2012 to RM3, 831 in 2014, which translated to 10.9% growth as compared to those who live in urban areas where their monthly income increased from RM5, 742 to RM6, 833 (DOS, 2015). Therefore, this shown reduction in the gap between rural and urban households.

Table 1.1 : Distribution of household by Income Class, Malaysia, 2012 and 2014

Income Class	Percentage of Income Distribution		
	2012		2014
RM900 and below	5% ⎤ 22.6%		11.7%
1,000-1,999	17.6% ⎦		
2,000-2,999	15.9% ⎤		⎡12.6%
3,000-3,999	16.7% ⎥ 51.5%	53.3% ⎤	17.8%
4000-4,999	11.1% ⎥		12.8%
5,000-5,999	7.8% ⎦		⎣10.1%
6,0000-6,999	6% ⎤		⎡7.4%
7,000-7,999	4.5% ⎥ 16.2%	21.3% ⎤	6%
8000-8999	5.7% ⎦		4.5%
9000-9999			⎣3.4%
10,000-10,999	⎤		⎡2.4%
11,000-11,999	⎥		2%
12,000-12,999	⎥ 9.7%	13.7 ⎤	1.6%
13,000-13,999	⎥		1.2%
14,000-14,999	⎥		1.1%
15,000 and above	⎦		⎣5.4%

The Table 1.1 shows that the percentage of groups whose income below RM2,000 reduced from 22.6% in 2012 to 11.7% in 2014 that means decreased by more than 11%. Therefore, this indicates much improvement in income distribution. The percentage of income distribution of those groups who income ranges between RM2000-5,999 has increased from 51.5% in 2012 to 53.3% in 2014 it showed an increase by around 1.8%. Groups with income ranging between RM6, 000 and 9, 999 increased from 16.2% in 2012 to 21.3% in 2014. Finally, the percentage of income distribution among groups, which have income above RM10, 000 or groups that in the top, has increased from 9.7 % in 2012 to 13.7% in 2014.

1.5   Fisheries Sector in Malaysia

In Malaysia, the fisheries sector is very important. In addition to its contribution to the national gross domestic product (GDP), it is also a source of protein, employment, and foreign exchange (Department of fisheries, 2005). In 2005, marine fisheries catch was 1,421,404.83 tons, which constituted 87.1% of total fish production evaluated at RM4, 017.52 billion. The catch accounted for 1.08% of GDP and 11.33% of agriculture GDP. The demand for fish is forecasted to increase from an annual consumption of 630,000 tons to 1,580,000 tons in the year 2010 (DOF, 2005) as it is the main source of protein. The value and quantity of fishery exports had increased from 425,709 tons evaluated at RM2, 570.01 million in 2010 to 463,828.40 tons evaluated at RM 3,399.17 million in 2013. At the same time, import of fish and fish products had

increased from 1,428,881 tons evaluated at RM6, 651.89 million in the year 2010 to 1,482,900 tons evaluated at RM8, 335,915,178 million in the year 2013.

In Malaysia, small-scale traditional fishing activity is facing major problems. Fishing is a traditional occupation, which has been passed down from generation after generation until the present times together with the socioeconomic problems of poverty and the depleting fish resources. The prevalence of poverty and the state of the fishermen community's socioeconomic issue should not be ignored in this era of modern technology. There has been assumptions that the fishermen's low productivity and income are caused by the lack of technology being used in the industry, causing poverty to be inevitable

In Peninsular Malaysia, the poverty rate among fishermen decreased from 24.5% in 1987 to 10% in 2007. This is a significant development when compared to several agricultural sub-sectors. Around 2,841 fishermen have been classified below the poverty line, especially those with a household income of less than RM175 per month. The introduction of loan facilities is aimed to increase the number of fishermen possessing their own boats. Until 1990, a total of RM 29.34 million has been approved for offshore fishery programs; thus allowing small-scale fishermen to buy or build their own boats and consequently upgrades their productivity. The emergence of new offshore fisheries entrepreneurs is due to the introduction of loan schemes. Among the recipients are several fishermen's associations. The modern fishing fleets and gear are viewed as a way of enhancing the fish industry, hence leading to a rise in the level of fishermen's income.

The change in climate has its own impact on Malaysia and is one of the main concerns of the fishing community. The global temperatures are forecasted to escalate 1.5 and 4.5 degree Celsius in the next millennium (Nelson and Serafin, 1996) and the direct hit would be the environment. The increase in sea levels and temperature has been recorded whereby the oceans are acidic, change in the rainfall patterns, intensified storms, and unpredictable ocean currents. The change in the climate has been made responsible for various significant economic losses and most worrying is that the drastic change in the climate, which could give negative impacts to the current socioeconomic state and the community's well-being.

1.6   Marine Capture Fisheries

1.6.1   Employment in Fisheries Sector in Malaysia

The Department of Fisheries Malaysia announced that 144,019 fishermen have been recorded to be working on linseed fishing vessels in 2013 compared with 136,514 in 2012. This shows an increase of 5.50%. The number of local fishermen is 107,509 while the remaining 36,510 are foreigners. The numbers of local fishermen have increased by 7.35% from the previous 100,147 in 2012. The number of licensed fishing vessels in Malaysia showed a slight increase of 5.27% from 54,235 units in 2012 to 57,095 units in 2013.

Table 1.2 demonstrates the number of fishermen who have enrolled from 2012 to 2013. It demonstrates a positive note that the number of enlisted fishermen in Malaysia increases annually. This proves that the fisheries sector is able to attract people to depend on this sector as one of their key sources of earning. Nevertheless, all the related organization must set up the fishermen to be prepared socially and economically for climate changes. The significance in preparing the fishermen with what the climate can do is to help them to be prepared with the negative effects; the changes can do with their lives. Based on the statistics obtained from the DOF official website, the highest number of fishermen was registered in 2013. Sabah recorded the highest number of registered fishermen at 29,440.

Table 1.2 : Number of Fishermen Working on Licensed Fishing Vessel with Fishing Gear Group and State (2012- 2014) in Malaysia

State	2012	2013	2014
West Coast			
Perlis	6,153	6,835	6,144
Kedah	12,945	13,381	13,356
Palau Pinang	5,448	7,011	8,009
Perak	15,727	17,564	18,135
Selangor	6,782	9,122	8,340
Negeri Sembilan	523	527	513
Melaka	1,835	1,390	1,278
Johor/West Johor	5,428	5,148	13,016
Sub-Total	54,941	60,978	68791
East Coast:			
Kelantan	8,976	9,382	8,970
Terengganu	10,775	11,382	10,389
Pahang	7,917	8,738	8,082
Johor/East Johor	6,833	6,673	
Sub-Total	34,501	36,175	27441
Peninsular Malaysia	89,445	97,153	96232
Sarawak	16,813	16,210	16,349
Sabah	29,043	29,440	29,602
W. Persekutuan	1,216	1,216	1,238
Sub-Total	47,072	46,866	47189
Grand Total	136,514	144,019	143,421

Source: Department of Fisheries Malaysia 2014

1.6.2 Fishing Vessels

As a whole, the number of fishing vessels has a significant increase of 5.27% from 54,235 units in 2012 to 57,095 units in 2013. The government under the Special Poverty Eradication Program gave out 2,750 new licenses.

In 2013, about 33,476 units of registered fishing vessels, which correspond to 58.63% of the overall registered fishing fleet, have been recorded in the Peninsular Malaysia. However, the West Coast of the Peninsular has 23,621 units, which accounted for 70.56% fleets whereas the East Coast has only 9,855 units representing 29.44%. In the West Coast, Perak has 6,301 units (26.68%) as the highest record of registered fishing vessels while Terengganu has 3,605units (36.58%) as the highest record of fishing vessels on the East Coast. Furthermore, Sarawak, Sabah and Federal Territory of Labuan collectively had 23,619 units of the registered fishing vessels, which added only 41.37% of the overall fishing fleets in Malaysia. Therefore, an increase of 4.33% is observed compared to 2012, which had 22,638 units with only Sabah having the highest records of 16,103 units.

The figures of deep-sea fishing stayed small when compared to those operating in the inshore waters. Deep-sea fishing vessels are 70 GRT and above fishing vessels and are licensed to fish in waters 30 nautical miles from shore until the Exclusive Economic Zone boundary. In 2013, there were 56,071 certified fishing vessels operating in inshore areas. With 1,024 deep-sea fishing vessels licensed in 2013, there is a slight reduction of 1.35% from 1,038 units in 2012. The said deep-sea fishing vessels were not made up of size 70 GRT and above vessels registered to catch anchovy purse seiners, tuna, anchovy processing vessels along with vessels of 70 GRT (Gross Register Tonnage) and above operating lift nets, tuna long line and fish trap.

1.6.3   Marine Fish Landings

Fishery resources can be grouped into two categories based on the area, namely inshore and deep-sea resources. The inshore areas comprises of waters of about 30 nautical miles distance from the shore, whereas the deep-sea areas are considered 30 nautical miles beyond the shore. In the year 2013, a significant increase of the total marine landings was observed to be 1,472,240 tones and improved by 0.72% compared to 1,482,900 tons in 2012. The inshore landings increased by 1.81% from 1,136,182 to 1,156,719 tons between 2012 and 2013. Marine landings consist of 40.35% pelagic fish that amounted to 598,303 tons, 23.28% of demersal fish amounted to 345,273 tons and 36.37% of crustaceans, mollusks and others, which amounted to 539,322.96 tons.

In Malaysia, Peninsular Malaysia is the biggest fish landings. In 2013, the contribution is 71.04% or 1,053,379 tons of the total fish landings, whereby the west coast contribution is a huge percentage with 715,683 tons (67.94%). Perak and Selangor are the two main contributors with 307,185.94 tons (42.92%) and 105,559 tons (14.75%) for the West Coast. On the East Coast, East Johor and Pahang are the main providers with 107,347 tons (31.19%) and 101,012 tons (29.91%) respectively.

Table 1.3 : The Production of Marine Landings and Values by State for the year (2013)

State	Inshore Fishery		Deep-sea Fishery		Total	
	Quantity (Tones)	Value (RM Millions)	Quantity (Tones)	Value (RM millions)	Quantity (Tones)	Value (RM millions
West Coast						
Perlis	82,687	479,911,624	16,905	104,973,714	99,592	584,885,338
Kedah	104,315	717,772,970	8,560	58,665,031	112,876	776,438,001
Penang	58,200	449,972,636			58,200,72	449,972,636
Perak	242,235	1,423,872,398	64,950	353,808,486	307,185	1,777,680,883
Selangor	104,867	434,986,791	692	2,250,370	105,559	437,237,161
Sembilan	567,78	6,309,415	-	-	567	6,309,415
Malacca	1,789	21,711,902	-	-	1,789	21,711,902
West Johor	29,911	296,266,888			29,911	296,266,888
Subtotal	624,575	3,830,804,624	91,108	519,697,600	715,683	4,350,502,224
East Coast						
Kelantan	27,585	116,783,629	29,524	128,117,508	715,683	4,350,502,224
Terengganu	61,326	426,468,888	10,897	54,230,965	72,224	480,699,853
Pahang	61,159	373,088,252	46,188	240,697,476	107,347	613,785,728
East Johor	56,263	249,129,573	44,749	226,584,424	101,012	475,713,998
Sub-Total	206,334	1,165,470,342	131,360	649,630,373	337,695	1,815,100,715
Peninsular Malaysia	830,910	4,996,274,996	222,468	1,169,327,973	1,053,379	6,165,602,939
Sarawak	114,028	535,959,778	45,797	130,267,169	159,825	666,226,948
Sabah	189,064	884,461,422	7,457	19,159,463	196,521	903,620,885
Labuan	22,715	196,853,613	50,456	403,601,793	73,172	600,464,406
Malaysia	1,156,719	6,613,549,779	326,180	1,722,365,399	1,482,899	8,335,915,178

Source: Department of Fisheries Malaysia (2013)

1.7 Education Training in Fisheries

The Department of Fisheries has carried out continuous and short-range hands on courses on diverse traits of fishing tools and technology, fish handling and aquaculture. Institute of Fisheries Malaysia in Chendering, Terengganu conducts courses on fishing processing and fishing technologies. Those in salt-water aquaculture are carried out in the Marine Fish Training Center, Pulau Pinang, Sarawak, Kedah, while Fish Training Center, Enggor and Perak carry out courses on aquarium fish breeding and freshwater aquaculture.

Fisheries and aquaculture related academic courses are made available by KUSTEM, Terengganu and the courses are offered at diploma and degree levels. A majority of public universities stated offered an extensive range of similar courses at diploma, degree and post-graduate levels.

1.8 Boat Deckhands in Malaysia

The deckhand work usually requires you to be involved as a crew on the seagoing fishing vessels. The vessels vary in sizes such as a small trawler with five to six people

capacity to a factory ship, which can accommodate up to 20 to 30 people on-board and work round the coastal waters in some known limited areas. The size of the boat determines how many working hours required to go near the shore or advanced into the sea. The work may be physically and may be conducted in harsh weather conditions such as storms and gales.

Fishermen on Boat Deckhands that work in small trawlers may contribute to more than 75% of the overall marine catch. The majority of the offshore workers in either small trawlers or a factory are being paid out of their ship's catch known as crew share. The crew share may vary based on the boat size and the number of people on the boat. Hence, 35-40% goes to the ship's owner (captain) while the remaining percentage is shared among the rest crew members after costs deduction for fuel, food and other expenses. Those working on the large vessel like factory trawlers normally received huge pay based on their hourly minimum wages.

1.9   Fisheries in Terengganu and Kelantan

Kelantan is made up of more than 25 rivers with seven main basins such as Galas, Kelantan, Semerak, Golok, Pengkalan Datu, Pengkalan Chepa, and Kemasin river basins. Kelantan basin is the biggest river basin in the state as it is draining a catchment area of approximately 12,000 km^2 in the Northeast Peninsular Malaysia that, includes part of Taman Negara, National Park, and flows northwards into the South China Sea. Despite the fact that Kelantan recorded more than 35 freshwater species, the estimation is that river fish landings in Kelantan are contributing a mere 3.5% to 4.1% of the total river fish production. Kelantan and Terengganu have the highest number of the fishermen involved in licensed fishing vessels at 9,382 in Kelantan and 11,382 in Terengganu as recorded in 2013 statistics. In addition, fish production in Kelantan at 715,683.93 valued at RM 4,350,502,224 billion and Terengganu 72,224.30 tons valued at RM 480,699,853 million recorded approximately 75% of the value in East Coast, which is the highest in Peninsular Malaysia.

Despite the high production is recorded in Kelantan and Terengganu, the Ninth Malaysian Plan (2006-2010) revealed that the poverty among fishermen from both states have reached high levels and a record of 70,000 poor families or 50% of licensed fishermen are poor in overall Malaysia (DOF, 2014).

1.10   Problem Statement

The Malaysian Government has engaged numerous programs since 1990s to reduce the level of poverty and has been successful in overcoming poverty in the country. However, there is remaining of the population still living in poverty, especially in rural and coastal areas where most people depend on agriculture and fishing as their main source of income. The number of fishermen in Peninsular Malaysia considered the highest, according to latest statistic 96,232 fishermen (2014).

However, the fishermen classified among groups who facing higher rates of poverty, particularly in the East coast of Peninsular Malaysia. For instance, based on available statistic (2009) shown that the number of households in Terengganu who live under extreme poverty 7,038 as compared to Kelantan which have 9,391 household head poor. The fishermen who classified as poor earn monthly income RM 529 (Shaladdin, 2007). Salim Amin (2012) concluded that even though, the fisheries sector has engaged the major changes in term of technology the economic status of fishermen community still low as compared to other sectors in the country. Based on UNCT's calculation 2014 the poverty among rural households who engaged in agriculture, forestry and fisheries accounted 65% of the total rural poverty.

The poverty is complicated issue, therefore; to understand the poverty it is important to investigate the indicators that may influence the economic status of the fishermen households rather than describing the condition of being poor. These indicators are the resources claimed by the fishermen households, such as (assets, education levels, accessibility to health care services, housing ownership etc.).

1.11   Research Questions

1) What is the household profile of the fishermen in Kelantan and Terengganu?
2) What is the rate of the poverty, severity and the poverty gap among the fishermen community?
3) What is the relationship between poverty and socioeconomic factors?

1.12   Objectives of Study

1.12.1 General Objective

The general objective is to analyze the poverty profile and its determinants among the fishermen's crew in Kelantan and Terengganu, Malaysia

1.12.2 Specific Objectives

1) To profile socioeconomic features of various fishermen's groups in Kelantan and Terengganu
2) To identify the incidence, depth and severity of poverty among the fishermen community
3) To analyze the relationship between poverty and other socioeconomic factors

1.13   Significance of Study

The main aim of this research is to observe and evaluate intervention projects and policies that gear the poor. Broadly, the most important poverty measurement rest on the ability to predict effects and evaluate policies as well as programs designed to assist the poor. Good policies offer new opportunities for micro-credit of the poor

while information on poverty may help to understand the policies government should adopt to end poor through collecting information from households and their economic status. Poverty measurement helps to place the poor on the first agenda, therefore, credible poverty measurement can serve as a powerful instrument to focus on policy that better the living condition of the poor. Methods used to measure poverty have two major benefits, providing detailed information on poor household's conditions that help to determine poverty reduction strategy. However, the profile of demographic and household's assets useful to estimate the resources needed to lift the poor out of the poverty line.

1.14   Thesis Organization

The thesis consists of five different chapters, introduction, review of the literature, methodology, results and discussion, and finally summary and conclusions. Chapter one deals with the background of the study, which are the poverty in Malaysia and the meaning of poverty, problem statement and objectives of the study. In addition, the significance of the study also explained. Chapter two, the literatures of the past studies are reviewed and the concepts of poverty determinants are explained with details.

The research methodology is explained in the chapter three. The study area, sampling and sampling techniques, the source of the data is explained. Moreover, the poverty measures are explained and finally the model that used to analyze the data also presented and explained. The chapter four is about the results and discussion of the study. The multi-colinearity and the goodness of fit tests are well explained. The chapter five consists of the summary of results, conclusion and recommendations. It also the limitation of the study and suggestions for future research stated.

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