



UNIVERSITI PUTRA MALAYSIA

***RELATIONSHIP BETWEEN PERSONALITY TRAITS AND WORK
PERFORMANCE AMONG POTENTIAL PADDY FARMERS IN
MALAYSIAN GRANARY AREAS***

SARITA BTE SHAYID KHALIM SHAH

FP 2016 82



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PERFORMANCE AMONG POTENTIAL PADDY FARMERS IN
MALAYSIAN GRANARY AREAS**

By

SARITA BTE SHAYID KHALIM SHAH

**Thesis Submitted to the School of Graduates Studies, Universiti Putra
Malaysia, in Fulfillment of the Requirements for the Degree of Master of
Science**

December 2016

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DEDICATION

I'm grateful to Allah s.w.t for grace I managed to complete this thesis with great success. Thanks to the infinite also my husband, Wan Fadzil bin Wan Ali, my children Wan Nurlaili and Wan Muhammad Faqih is always patient and understanding of my work as a student at this time. Thanks a lot to my parents who never fail to pray for his daughter successful. In addition, thanks also to all thanks also to all postgraduates and under graduate student as helpful in giving ideas, information and useful input in this study. I'm personalizing this greeting to my friends of Nabilah, Najwa, Latipah, Azmiera, Kritharan, Lila, Ella, Fatin, Ida and all friends involved. In addition, not forgot also thanks a lot also to all granaries are involved in this research namely IADA Barat Laut Selangor, IADA Seberang Perak, IADA KETARA and MADA that have helped me in getting data easily and completing this thesis successfully.



Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the Degree of Master of Science

RELATIONSHIP BETWEEN PERSONALITY TRAITS AND WORK PERFORMANCE AMONG POTENTIAL PADDY FARMERS IN MALAYSIAN GRANARY AREAS

By

SARITA BTE SHAYID KHALIM SHAH

December 2016

Chairman : Salim bin Hassan, PhD
Faculty : Agriculture

Paddy is the third most widely planted crop in Malaysia. According to Department of Agriculture, 686,050 hectares were planted by paddy. The total population in Malaysia is reaching 32 million by 2020. However, Malaysia is facing problem in producing adequate paddy to feed the population. This study related Rogers theory, in context most of the paddy production and they formed 68% of potential paddy farmers. However, this study only focuses on human behaviour of paddy farmers to achieve a good work performance. The objective of the study is to determine the relationship of personality traits to work performance among potential paddy farmers in Malaysia. A survey using well-structured questionnaire was carried out. The respondents were chosen using cluster sampling technique. Four out of ten granaries were selected and the total respondents are 546. Descriptive analysis was used to simplify and describe the socio demographic of the respondents. Correlation and multiple regressions were used to examine the strength and relationship of the personality traits with work performance. The correlation coefficients shows that six personal traits variables positively correlated and one personal traits variables was negatively correlated with work performance at 0.05 significant level respectively. Multiple regression analysis explains 3 variables i.e. are ability to solve problem, information network and discipline have significant with work performance. These variables explain 44% variance of the work performance (adjusted $R^2 = 0.441$; $f = 62.395$, $p < 0.05$). Therefore, extension program should focus on these three variables in other to increase work performance.

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

HUBUNGAN ANTARA CIRI-CIRI PERSONALITI DENGAN PRESTASI KERJA DIKALANGAN PETANI PADI YANG BERPOTENSI DI KAWASAN JELAPANG PADI MALAYSIA

Oleh

SARITA BTE SHAYID KHALIM SHAH

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Padi merupakan tanaman yang ketiga paling banyak ditanam di Malaysia. Menurut Jabatan Pertanian, 686,050 hektar telah ditanam dengan padi. Jumlah penduduk di Malaysia mencecah 32 juta pada tahun 2020. Walau bagaimanapun, Malaysia menghadapi masalah dalam menghasilkan padi yang mencukupi untuk memberi makan kepada penduduk. Kajian ini berkaitan Teori Rogers, dalam konteks pengeluaran padi dan mereka membentuk 68% daripada petani padi berpotensi. Walau bagaimanapun, kajian ini hanya memberi tumpuan kepada tingkah laku manusia khususnya petani padi berpotensi untuk mencapai prestasi kerja yang baik. Objektif kajian ini adalah untuk menentukan hubungan personaliti petani padi dengan prestasi kerja dikalangan petani padi yang berpotensi di Malaysia. Satu tinjauan menggunakan soal selidik berstruktur telah dijalankan. Responden dipilih menggunakan teknik persampelan kelompok. Empat daripada sepuluh kawasan jelapang padi telah dipilih dengan jumlah 546 responden. Analisis deskriptif telah digunakan untuk memudahkan dan menggambarkan sosio demografi daripada responden. Korelasi dan kaedah regresi telah digunakan untuk mengkaji kekuatan dan hubungan antara personaliti dengan prestasi kerja. Pekali korelasi menunjukkan bahawa enam ciri-ciri peribadi pembolehubah berkorelasi secara positif dan satu pembolehubah berkorelasi secara negatif apabila dikaitkan dengan prestasi kerja dimana nilai adalah signifikan pada level 0.05. Analisis regresi berganda menjelaskan 3 pembolehubah iaitu keupayaan untuk menyelesaikan masalah, rangkaian maklumat dan disiplin mempunyai signifikan dengan prestasi kerja. Pembolehubah ini menerangkan 44% perbezaan prestasi kerja (R^2 terlaras = 0.441; $f = 62,395$, $p < 0.05$). Oleh itu, program pengembangan perlu memberi fokus kepada ketiga-tiga pembolehubah ini untuk meningkatkan prestasi kerja petani padi.

ACKNOWLEDGEMENTS

I'm grateful to Allah s.w.t for grace I managed to complete this thesis with great success. Thanks especially to my supervisor Dr. Salim Hassan who has provided guidance in the success of this study from the beginning to the end. I was deeply moved as he was the supervisor who was very committed, educated, patient and his make me a lot easier to finished my job in this thesis.



I certify that a Thesis Examination Committee has met on 20 December 2016 to conduct the final examination of Sarita bte Shayid Khalim Shah on her thesis entitled "Relationship between Personality Traits and Work Performance among Potential Paddy Farmers in Malaysian Granary Areas" 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.

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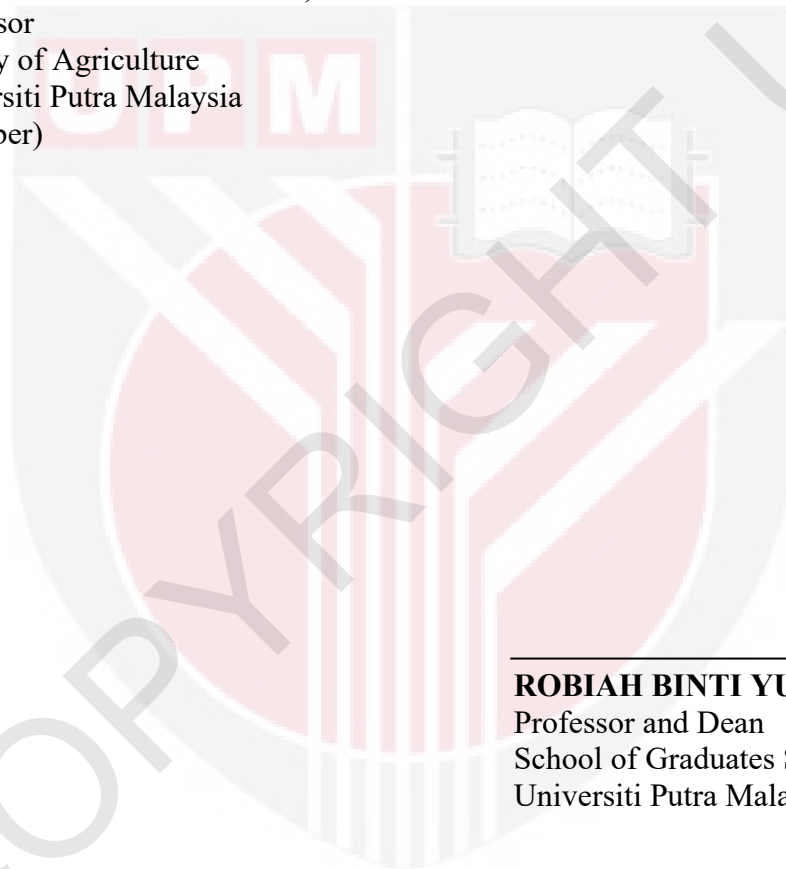
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LIST OF ABBREVIATIONS

AFTA	ASEAN Free Trade Agreement
CCS	Crop Cutting Surve
DOA	Department of Agriculture
ETP	Economic Transformation Programme
GAP	Good Agricultural Practices
GMP	Good Management Practices
GDP	Gross Domestic Product
Ha	Hectare
IADA	Integrated Agricultural Development Area
KETARA	Kawasan Pembangunan Pertanian Bersepadu Terengganu Utara
KADA	Kemubu Agricultural Development Authority
Mt	Metric Tonnes
MOA	Ministry of Agriculture
MADA	Muda Agricultural Development Authority

CHAPTER 1

INTRODUCTION

1.1 Introduction

Chapter 1 is the introduction of this study. It covers the Malaysian agriculture, paddy industry in Malaysia, performance of paddy farmers, problem statement, objectives and significance of the study.

1.2 Importance of Extension and Agriculture

A service extension is one of the core businesses of the Department of Agriculture Malaysia, which has been used for decades as one of the methods to disseminate information and technologies to farmers and entrepreneurs. As a result, it can improve the lives and incomes of the population, especially those living in rural areas. Extension is profoundly educational and intends to alter farmers' attitude so that they can positively change their farming behaviours while the agricultural extension agents and extension personnel have a role of bringing scientific knowledge to farm families in the farms and homes to achieve the crux of the task to improve the efficiency of agriculture and subsequently the livelihood of the farmers (Masso et al., 2016).

The meaning of extension is assisting farmers to help themselves through a process of informal education conducted in a systematic manner to serve and promote the adoption of a technique, technology and new information by a particular individual or group in accordance with their ability and need to achieve the socio economy. According to Saleh et al., (2016), agricultural extension plays an important role in rural development where the success of its work depends on competency (knowledge and skills) of the extension agent who is the critical element in all extension activities.

There are two basic concepts of educational development for farmers, namely:

1) Training

It explains about how to produce changes and treatment satisfaction in oneself.

2) Programme Development

It explains about how to encourage the individual to change the performance of a well-designed full energy and physical mind to succeed.

Therefore, the importance of extension and agriculture is to produce changes that have influence on individuals and can impact satisfaction and great objectives. Agricultural extension has a crucial role in identifying the problems faced by the

farmers, transferring the scientific research to the study, and also finding appropriate solutions, recommendations, and solutions to the problems (Saleh et al., 2016)

According to Salim H. (2011), to ensure that extension officers are competent in the training and development programme, they need to follow adequate training in both fields while the failure to equip them with high potential development could have implications in the rice production.

The investments by the government in technology transfer, extension and R&D must be strengthened as these efforts could help to ensure the sustainability and improved the productivity of paddy (Mohamed et al., 2016).

Both are equally important and relevant to competence and affect work performance, thus should be emphasized by extension officers while striving for customers (Rahim et al., 2010).

1.3 Malaysian Agriculture

Agriculture GDP by the types of economic activities is divided into five main sectors namely 45 % of oil palm, livestock 12 %, fishing 13 % and forestry and logging 10 %, while other agriculture contributes 20 %. Oil palm is the biggest contributor to the national economy because Malaysia is an exporter of oil palm to the world. Based on statistics, agriculture remains as an important sector of the Malaysian economy, which contributes 6.6 % to the National Gross Domestic Product (GDP) in 2015 and provides employment for 11.91 % of the labour force in Malaysia (Statistics, 2014). However, the contribution is still low compared to manufacturing and services sectors in Malaysia. Agriculture is an important sector for food security, thus the production by agricultural sub-sector includes 44 % of vegetable, fruits 22 %, 18 % of food crops, paddy 12 % and 4 % of others. Others refer to other cash crops that are not much planted in Malaysia in quantity (Statistics, 2014). In addition, Malaysian farmers produce a number of fruits and vegetables for the domestic market, including bananas, coconuts, durian, pineapples, rice, and rambutans (a red, oval fruit grown on a tree of the same name in Southeast Asia). The Malaysian tropical climate is very favourable for the production of various tropical exotic fruits and vegetables.

Agricultural development can be divided into four phases:

- 1) Substance Agriculture (agricultural practiced in primitive area which means farmers produce for home users).
- 2) Commercial Agriculture (agricultural practiced in industrial area which means farmers produce beyond home consumption with the primary objective to supply the markets).

- 3) Sustainable Agriculture (eternal agricultural practices where the objective of the agricultural production is to reduce production costs and optimize profits, besides taking care of the welfare of the environment).
- 4) Precision Agriculture (precise agricultural practices in which agricultural production processes are devoted only to one crop. It encompasses studies and technology development on that production).

Lately, agriculture in Malaysia can be vested to the eternal agricultural practice phase (*sustainable*) which means, many agricultural industries in Malaysia are practicing the Good Agricultural Practices (GAP) and Good Management Practices (GMP). As a result, agricultural entrepreneurs optimize their profit based on the control of GMP and agriculture threat on the environment based on GAP.

There are two (2) types of agricultural practices found in Malaysia, namely the smallholding agriculture (personal maintenances) and plantation. Some of the factors that influence agricultural development in Malaysia are:

- 1) Government policy on agricultural industry.
- 2) The capital of the entrepreneurs and farm industries.
- 3) The agricultural management governance structure.
- 4) The mastery of knowledge and skills to operate farms.

1.4 Paddy Industry in Malaysia

1.4.1 Historical Background

Paddy sector in Malaysia has traditionally been a smallholder based activity for over the last decade. However, rice is the third main crop grown in Malaysia after the extent of oil palm and rubber. According to the Department of Agriculture (2014), the total area for rice production is 679,315ha. In 1965, the concept of integrated agricultural development project was introduced in the northern Peninsular Malaysia as the first granary area commonly known as MADA. Today, to ensure sufficient rice production, the government has designated a cluster of ten granary areas in Malaysia including the Muda Agricultural Development Authority (MADA), Kemubu Agricultural Development Authority (KADA), Kerian Integrated Agriculture Development Area, Barat Laut Selangor Integrated Agriculture Development Area, Seberang Perak Integrated Agriculture Development Area, Pulau Pinang Integrated Agriculture Development Area, North Terengganu Integrated Agriculture Development (KETARA), Kemasin Semerak Integrated Agriculture Development Area, Pekan Integrated Agriculture Development Area and Rompin Integrated Agriculture Development Area (Department of Statistics Malaysia, 2015).

The paddy industry can be divided into two types, namely the small schemes where paddy land has a special irrigation system and a second sub-district where rice production using irrigation systems is not specific or less perfect. Usually, paddy lands that have a special irrigation system in the whole paddy fields is controlled by

the Malaysian government departments and agencies, while those with non-specific irrigation systems usually belong to individuals or private entrepreneur. Paddy production in Malaysia is divided into two; the main and off seasons. The main season is the period when paddy is grown without depending wholly on any irrigation system. For administrative purposes, the main season is defined as the commencement date of paddy planting between Augusts (1st) to March (28/29th) of the following year while the off season is the dry period when paddy planting normally depends on an irrigation system. For administrative purposes, the off season is defined as the commencement date of paddy planting from March (1st) to July (31th). Figure 1.1 shows the map of the granary area in the Peninsular Malaysia.

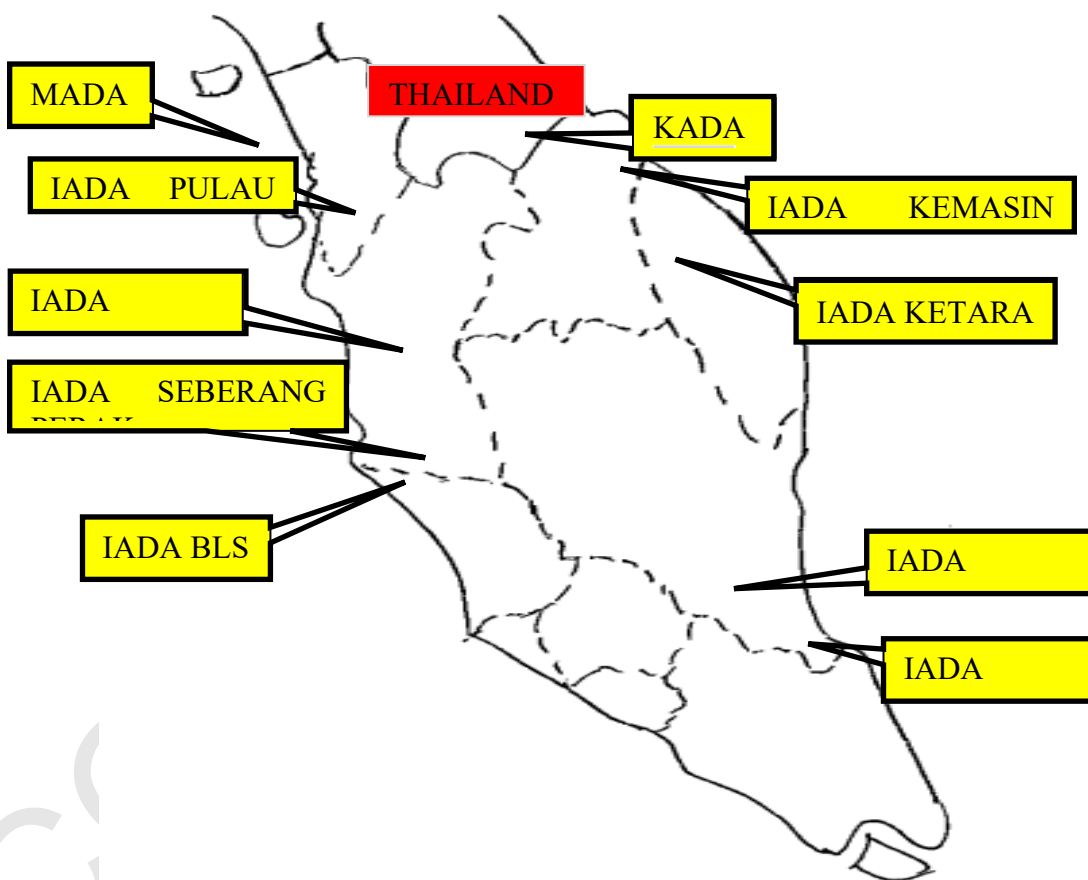


Figure 1.1 : Map of Granary Area in Peninsular Malaysia
(Source: Paddy Statistics of Malaysia, 2014)

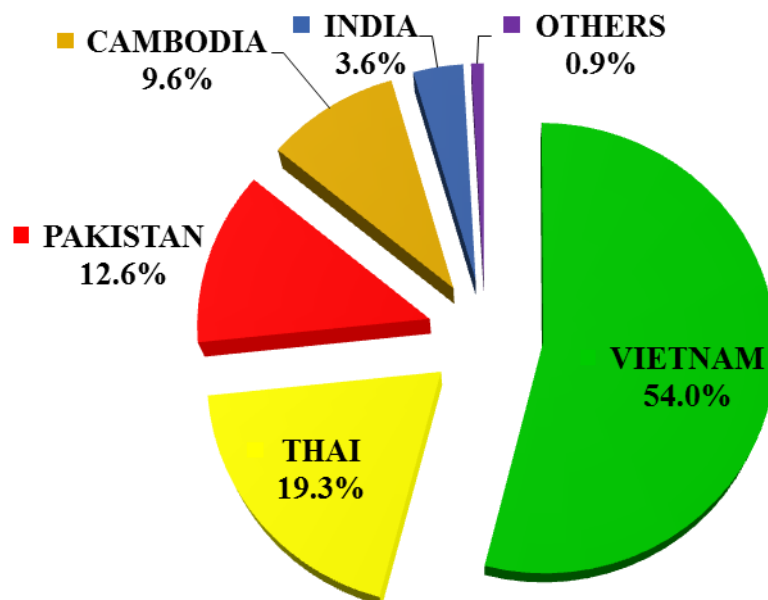
Table 1.1 shows the average yield of paddy in the granary and non-granary areas from 2010 to 2014 in the Peninsular Malaysia. There are 10 granary areas in the Peninsular Malaysia and the non-granary areas are recorded based on the states.

Table 1.1 : Average Yield of Paddy in Granary and Non-Granary Areas, 2010 to 2014 in Peninsular Malaysia

Area	2010 (Tonne/Ha)	2011 (Tonne/Ha)	2012 (Tonne/Ha)	2013 (Tonne/Ha)	2014 (Tonne/Ha)
<u>Granary Area</u>					
MADA, Kedah	4.540	4.773	4.866	5.002	4.808
KADA, Kelantan	4.725	4.955	4.843	5.026	4.297
IADA Kerian, Perak	3.282	3.686	4.380	4.495	4.514
IADA BLS, Selangor	5.612	5.908	5.989	6.280	6.403
IADA Seberang Perak, Perak	4.375	4.592	4.948	4.552	4.484
IADA Pulau Pinang	5.589	5.728	5.621	5.841	5.872
IADA KETARA, Terengganu	5.354	5.843	5.604	5.549	5.738
IADA Kemasin Semerak, Kelantan	3.347	2.938	3.905	3.495	3.715
IADA Pekan, Pahang	-	-	-	-	2.671
IADA Rompin, Pahang	-	-	-	-	3.442
<u>Non Granary Area</u>					
1. Johor	3.85	3.80	3.95	4.53	4.32
2. Kedah	2.72	3.55	3.14	3.22	3.84
3. Kelantan	3.30	2.55	2.93	3.08	3.19
4. Melaka	2.35	3.37	3.00	3.58	3.27
5. Negeri Sembilan	4.01	3.20	3.98	4.24	4.51
6. Pahang	3.39	3.25	3.30	3.04	3.26
7. Perak	4.43	4.70	4.51	4.25	4.28
8. Perlis	3.13	3.64	4.09	4.20	4.22
9. Pulau Pinang	5.33	5.45	5.65	4.97	-
10. Selangor	-	-	-	-	-
11. Terengganu	3.82	3.83	2.96	2.58	3.71

(Source: Statistics, A. 2014)

Rice is the staple food diet of Malaysian and is a symbol of traditional Malay culture and the production of rice, which stood at 1.76 million metric tons in 2013, plays an important part in the country's agriculture. However, the overall production of rice does not satisfy the country's needs where rice consumption in 2015 was 2.50 million tons and by 2020 the rice consumption is expected to increase to 2.69 million tons (Anon, 2011). This shows an increment in rice consumption as much as 0.20 million tons over in five years and becoming 0.04 million tons per year. Thus, Malaysia has to import rice from other neighbouring countries, namely the biggest import from Vietnam (54 %) and Thailand (19.3 %) for fulfilling the needs of rice. This is followed rice supplied by countries like Pakistan, Cambodia, India and others with 12.6, 9.6, 3.6, and 0.9 %, respectively. Figure 1.2 illustrates the percentages of the rice supply.



Figures 1.2 : Import of Rice by Country
 (Source: Department of Agriculture, 2014))

The increase in population demands a higher quantity of food supply. The population of Malaysia is expected to rise to 32 million by 2020 (Department of Statistics Malaysia, 2015). Figure 1.3 shows the expected increase of the rice consumption from 2.30 million tonnes in 2010 to 2.69 million tonnes in 2020, indicating a growth of 1.6% per year due to the increase in population. Paddy production is expected to increase from 2.55 million tonnes in 2010 to 2.91 million tonnes in 2020, indicating a growth of 1.3% per year (Anon, 2011). Nevertheless, the per capita consumption of rice has declined over the years from 78.8 kilogram per year in 2013 to 78.6 kilogram per year in 2014 (Ministry of Agriculture and Agro-Based Industry Malaysia, 2014).

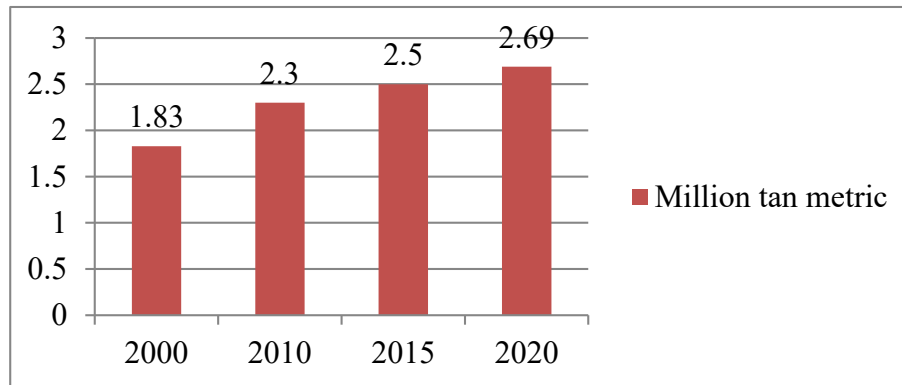


Figure 1.3 : Rice Consumption, 2000 - 2020 (Million Tonnes)
 (Source: Ministry of Agriculture, 2011-2020)

1.4.2 Granary Area

Granary area refers to the major irrigation schemes (more than 4,000 hectares) recognised by the government in the National Agricultural Policy as the main paddy producing areas. There are ten granary areas in Malaysia, namely the Muda Agricultural Development Authority (MADA), Kemubu Agricultural Development Authority (KADA), Kerian Integrated Agriculture Development Area, Barat Laut Selangor Integrated Agriculture Development Area, Seberang Perak Integrated Agriculture Development Area, Pulau Pinang Integrated Agriculture Development Area, North Terengganu Integrated Agriculture Development (KETARA), Kemasin Semerak Integrated Agriculture Development Area, Pekan Integrated Agriculture Development Area and Rompin Integrated Agriculture Development Area (Department of Statistics Malaysia, 2015).

1.4.3 Most Popular Variety in Granary Area

Since 1971, MARDI has declared 41 varieties of paddy. There are three dominated varieties in the rice bowl area which are planted more than 50 % by farmers, namely MR 84, MR 167, and MR 219.

MR 219 was released in 2002 with high yield and planted by about 82 % of farmers in the Peninsular Malaysia (Department of Agriculture, 2011) and 26 % in 2014 (Department of Agriculture, 2014). MR 220CL1 and 220CL2 were released in 2010 to control the weedy rice in the field. MRQ 74 is a type of fragrant rice and has been grown in the outside granary area. Table 1.2 shows the rice varieties declared from 1990 to 2013.

Table 1.2 : Rice Varieties Declared 1990-2013

Bil	Varieties Name	Year of Introduce
1	MR 127	1991
2	MR 159	1995
3	MR167	1995
4	MR 185	1997
5	MR 211	1999
6	MRQ 50	1999
7	MR 219	2001
8	MR 220	2003
9	MR Q74	2005
10	MR 232	2006
11	MR 220 CL1	2010
12	MR 220 CL2	2010
13	MR 253	2010
14	MR 263	2010
15	MRQ 76	2012
16	MR 269	2013

(Source: CCS report Paddy Department of Agriculture, 2014)

Figure 1.4 shows that MR 219 is the main variety grown in the granary areas with the cultivation areas of 53 %. This variety was developed through the establishment of Plant Varieties for Scatter System Continues which began in the early 1988. The bulk of these varieties meet the characteristics required for the production of high yields of crops under the direct seeding system.

Originally, this variety was produced through the crossbreeding of MR 137 and MR 151 in 1991 during the off season. The MR 137 breed has the characteristics of a good plant with short maturity, good size and shape, and palatable taste while the MR 151 breed also has good characteristics of the uniformity on the stalk and leaves. In terms of resistance to pests and diseases, MR 137 is resistant to leafhoppers war, while the MR 151 red disease resistance are both resistant to the blast and bacterial leaf blight. Thus, MR 219 variety inherits features of the parent breeds.

The amylose content in MR 219 is lower by about 21.4%. This causes the rice to taste tender and juicy when eaten. The MR 219 variety is a leafy breed. Early fertilization (initial stage) does not require large quantities and it can simply use the fertilizer subsidized by the government. The MR 219 is the best rice variety that has been produced and grown for 20 seasons ever.

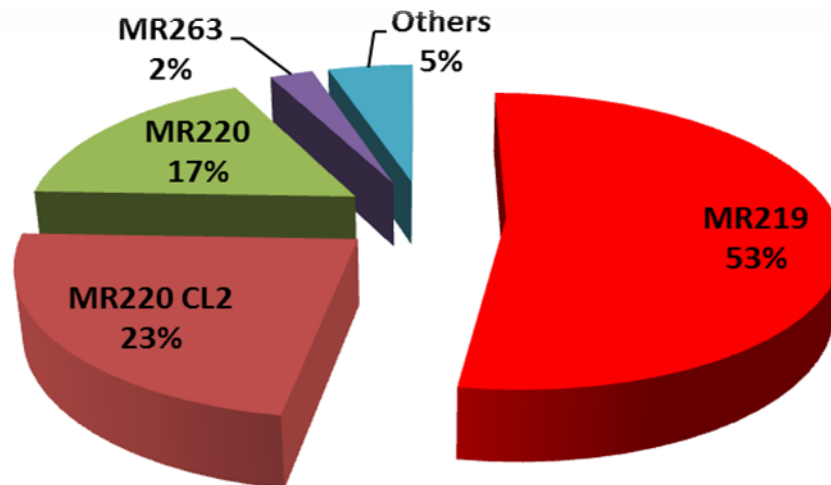


Figure 1.4 : Production Area for Paddy Varieties in Granary Peninsular Malaysia (Source: Department of Agriculture, 2014)

The cross breed between MR220 and 1770 which comes from the United States produces the kind of Clearfield rice varieties named as MR220 CL1 and MR220 CL2, which are tolerant to the *imidazolinone* type of poison. MR220 CL2 is the second highest variety planted by paddy farmers in the granary area (23 %). The paddy variety MR220 CL2 is also known as the "invincible rice ". This variety is resistant to a poison called *imidazolinone*, which is used to control weedy rice. Weedy rice resembles a kind of ordinary rice but the fruit will fall before or when it is harvested. Weedy rice is a critical problem in the industrial cultivation of rice because farmers will lose a lot of revenue when many of weedy rice exist in the field.

This is followed by MR220, 17 % produced by farmers and has a very good level of resistance to three major pests of rice blast diseases and bacterial leaf blight and is moderately resistant to the red disease virus. The resistance level is comparable the MR 219 variety. However, it is only moderately susceptible to *rhizoctonia solani* which should be done through chemical methods and good agronomic practices.

Furthermore, MR 263 is planted 2 % from the overall granary area. MR 263 is classified as long grain rice because its standard length exceeds 21.6 mm. the length and width ratio of rice showed that MR 219 is a better shape than the 263. The amylose content of MR 263 variety is 2 % lower than MR 219. This suggests that MR 263 and MR 219 rice varieties are still in the same category in terms of softness and stickiness when eaten. MR 263 has a moderate resistance against pests of plants.

Lastly, others varieties planted are as much as 5 %. There are hundreds of varieties of rice grown on appropriate locations by farmers. Other varieties that are grown on a small scale by paddy farmers in granary areas are MRQ 74 (fragrant rice), MR 232, MR 253, MR 220 CL1 and many others.

1.4.4 Paddy Production

In 2014, the total land area covering 689,732 ha were used for paddy cultivation for both granary and non-granary areas. From the total area, as much as 2.645 million tons of rice with an average production of 3.835 Mt/ha were produced. The total rice production stands at 1.704 million tons (Statistics, A. 2014). Table 1.3 shows the statistics of paddy production.

Table 1.3 : Statistics production of paddy (2010-2014)

Item	2010	2011	2012	2013	2014
Paddy Planted Area (ha)	677,884	687,940	684,545	671,679	689,732
Production of Paddy (‘000 tonnes)	2,465	2,579	2,599	2,604	2,645
Average Yield of Paddy (Kg/Ha)	3,636	3,748	3,797	3,876	3,835
Production of Rice (‘000 Tonnes)	1,588	1,661	1,675	1,677	1,704

(Source: Statistics, A. 2014)

Overall, the average paddy production for the granary area is 4.70 Mt/ha while the national average paddy production is 3.84 Mt/ha (Statistics, A. 2014)

1.4.5 Domestic Utilization

Rice is an important part of the daily diet in Malaysia. Table 1.4 shows that in 2013, Malaysia produced 1.69 million tonnes of rice. Even with this high production, Malaysia produces only 66% of the requirement to support its consumption and must import the rest. Malaysians’ average per capita is 78.6 kilograms of rice per person (Department of Agriculture, 2014). The growing population from one year to another reaching 29.95 million populations in Malaysia has resulted in more academics and researchers sought to examine the various methods and techniques in line with the technological advances to increase rice production for domestic use.

Table 1.4 : Crude estimates of rice consumption in Malaysia

Item	2009	2010	2011	2012	2013
Production ('000 Metric tonnes)	1620	1,588	1,661	1,675	1,685
Total Apparent Consumption ('000 Metric tonnes)	2704	2518	2692	2680	2561
Percentage of Production to Total Apparent Consumption (%)	60%	63%	62%	63%	66%
Population (Million)	28.08	28.59	29.06	29.52	29.95
Consumption Per Capita (kg/person/year)	96.3	88.1	92.6	90.8	85.5

(Source: Department of Agriculture, 2014)

1.4.6 Demand and Supply for Rice in Malaysia

The globalization and implementation of the ASEAN Free Trade Agreement (AFTA) have raised the challenges and fears that the Malaysian rice sector is unable to cushion the impact of competition arising from this trade liberalization. In addition, the smuggling and illegal trading activities of rice from the neighbouring countries have also threatened the local rice production. Rice being the staple food and pillar of the Malaysian food security influenced the strong economy growth with the average of 4.7% to 7.4% each year from 2010 to 2014 (Economic Transformation Programme, 2014). Malaysia's current population of 29.95 million is growing steadily at an average annual population growth rate of about 1.2 % (Department of Statistics Malaysia, 2015). The country has seen a steady increase in the standard of living, making the purchasing power per capita income to exceed RM 34,123 or US\$10,426 (Central Bank of Malaysia, 2014). Lifestyle changes have also led to an increase in the demand for convenient and health foods. Malaysia has emphasized agriculture on being the driver to increase food supply until today and the rice industry is one of the major sources of food in most semi-urban and urban areas in Malaysia.

1.5 Definition of Terminology

1.5.1 Personality Traits

Personality traits can be defined as characteristics of intelligent problem solving, high discipline, and good network (Salim H., 2015). According to Seibert et al. (2001), work performance often depends on the support, advice, and other resources provided by others. While according to Van Scotter and Motowidlo (1996), the oriented interpersonal behaviour will contribute to the success of an organization (Lopes et al., 2006).

1.5.2 Potential Paddy Farmers

According to Rogers (1995), potential paddy farmers can be defined as a group of people that have the highest influence on the performance yield with the highest percentage of 68% compared to other groups. In addition, Rogers also expressed that potential adopters have a threshold, in which over time, each potential adopter views his neighbours before deciding on the possibility to adopt based on the technologies they are using. This condition causes them to be successful in production because they are more cautious before making a decision.

1.5.3 Work Performance

According to Spencer and Spencer (1993), performance can be defined as farmers should have 'visible' and 'surface' competence where both shall be given the same attention to ensure the excellent performance of the farmers from any angle (Rahim, 2010). 'Visible' competency refers to knowledge and skills while 'surface' competency is the social role, self-image, traits and motives that should be in a person like farmer to achieve success in paddy production activities carried out.

The efforts to modernize rice have involved many government interventions such as the construction of drainage and irrigation to allow rice production twice a year and subsidies of input. A total of RM 2.211 billion for the subsidies includes subsidies for fertilizer, rice paddy, paddy price subsidies, incentives to increase paddy rice production and rice seed production incentives provided by the government expenditure for rice farming sector (Ministry of Agriculture and Agro-Based Industry Malaysia, 2014). However, the performance of the rice industry is still at a low level compared with other industries. Poverty still exists because the productivity and incomes are too low and continued reliance may burden the government. Now, after taking into consideration of the importance of rice in terms of food safety and high production costs, the government is focusing on the region's rice bowl.

Thus, having all the facilities, incentives and subsidies given by the government, the low rice yields are closely linked to the performance of the farmers themselves (Salim H., 2015). Therefore, this study will look at the issue from the angle of personality traits and performance of the majority paddy farmers.

1.6 Problem Statement

Food is a basic human need for survival while rice is the staple food for most of the population in the world, including Malaysia. The Malaysian government is aiming the paddy subsistence level of 72 % as the demand for paddy continues to increase in line with the growth of population. The need for rice for the population in Malaysia by 2020 is expected to increase to 2.69 million metric tons compared to 2.49 million metric tons in 2015 (Department of Statistics, 2015). At the same time, the areas of

agricultural land are competing with other sectors such as for the settlement which is also the basic human needs.

This study was based on the iceberg model of Spencer and Spencer (1993), which contains six levels representing the six characters of the mind. Personality traits influence what we do, namely knowledge, skills, social role, self-image, traits and motives which exist at different levels of consciousness. Nevertheless, this study focuses only on the farmers' behaviour, specifically on their personality traits.

Visible competencies are self-concept, motive and trait associated with a behaviour that drives a person to act towards things and perform relevant duties (Rahim, 2010). In fact, the internal behaviour of farmers is very important to set up as it affects the behaviours of an individual either towards positive or negative indirect impact on increasing productivity. Rural farmers' attitude is most likely to be negative if the technologies that come from the agencies are not relevant to increase their paddy income (Masso et al., 2016).

Besides, human behaviour is able to increase the paddy production because the farmers' decision to gain quality by implementing technology depends on the values they already have. Therefore, these values should be studied carefully. For example, most farmers at the Sungai Petani district in Kedah were not aware of the MyGAP or the Rice Check guideline (Mohamed et al., 2016).

In 2002, the most popular variety of paddy was MR 219. Hence, the government decided to use the MR 219 variety because of its high yield potential. At the same time, the manual of rice check was also released in 2002. As such, the government believed that the target to reach the potential yield of 10 metric tons per hectare for paddy fields can be achieved, especially by the rice granary that has been gazetted by the government. The Department of Agriculture (2014) stated that 90% of the granary areas cultivate MR 219. However, the average yield in 2014 after 12 years was 4.7 metric tons per hectare (Statistics, A. 2014). The situation was very worrying because the gap was very high at 53 %. Although the government had helped by giving various angles of assistance such as land, subsidies, new technology and service of extension agents, the results were not satisfying. Nevertheless, there are other contributing factors to the actual low yield. Thus, this study focuses on the human behaviour of personality traits to work performance among potential paddy farmers in the Malaysian granary area. The personality traits used in this study are the willingness to take risk, information seeker, ability to solve problem, willingness to invest, dare to make decisions, information network and discipline in terms of how human behaviour affects productivity paddy farmers.

1.7 Objective of the Study

The main objective of this study is to identify the relationship between personality traits and work performance among potential paddy farmers in the Malaysian granary area.

The specific objectives are:

1. To analyse the personality traits of the potential paddy farmers in granary area.
2. To investigate the level of working performance of the potential paddy farmers in granary area.
3. To determine the direction and strength of the relationship between the personality traits with work performance among potential paddy farmers.

1.8 Significance of the Study

This study strengthens the Iceberg Model of Competencies by adding seven characteristics of potential paddy farmers. Therefore, the aim of this study is to provide knowledge about personality traits of potential paddy farmers in Malaysia that can be used to identify the factors influencing the work performance of potential paddy farmers. Moreover, the result of this study will serve as input for the government especially the Ministry of Agriculture to improve the extension service in training paddy farmers. In addition, the knowledge can help improve paddy farmers' behaviours to increase their production by following the 'rice check' and creating network among them.

1.9 Organization of Thesis

This thesis is divided into five chapters. Chapter 1 discusses the background of the study which includes the importance of extension and agriculture, Malaysian agriculture, paddy industry and potential paddy farmers and work performance. The objectives of the study and problem statement are also explained in detail in this chapter. Chapter 2 reviews the methods and analysis of personality traits by previous studies. Besides that, the terms of personality traits and work performance used in this study are also discussed in this chapter. Various models of personality also are shown. Chapter 3 explains the theoretical and conceptual framework, data collection procedures, and analytical and estimation tools of the study. This study used seven types of personality traits listed as (1) Willingness to Take Risk, (2) Information Seeker, (3) Ability to Solve Problem, (4) Willingness to Invest, (5) Dare to Make Decisions, (6) Information Network, and (7) Discipline. Meanwhile, the work performance of the paddy farmers is viewed from the angle of their rice production. Chapter 4 discusses the findings of the descriptive, correlation, and multiple regression analyses of this study. Chapter 5 includes the summary of the major findings followed by the conclusion, recommendation and limitation of the study.

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