UNIVERSITI PUTRA MALAYSIA

FARMER'S PERCEPTION TOWARDS COMPETENCY OF EXTENSION AGENTS IN TRANSFER OF TECHNOLOGY IN GRANARY AREAS, MALAYSIA

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BY

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DECLARATION

This project report entitles “Farmer’s Perception towards Competency of Extension Agents in Transfer of Technology in Granary Areas, Malaysia’’. Prepared by Wani Binti Sidek and submitted to the Faculty of Agriculture in fulfillment of the requirement of PRT 4999 (Final year project) for the award of the degree of Bachelor of Agriculture Sciences based on my own original works.

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ABSTRACT

Paddy production in Malaysia still in low quantity which is cannot totally feed the population of Malaysian. In order to fulfill the requirement of the populations, government needs to import extra rice from other countries like Thailand and Vietnam. Besides, MARDI also proposed few ways to improve the yield production of paddy. One of that is introducing technology of Rice Check whereas comprised of ten components. Thus, the propose of this research is to study the farmer's perception towards competency of the extension agents in transferring technology based on Rice Check through three skills. The skills are planning, implementing and monitoring. The method used is by using questionnaire and data analysis. The respondents chosen were farmers which come from four different granary areas of Malaysia which are IADA KETARA, IADA Pulau Pinang, IADA Kerian and IADA Seberang Perak with 535 respondents using sampling method by Krejcie and Morgan (1970). The questionnaire consists of two components which is demographic profile of farmers and competency level of extension agents in planning, implementing and monitoring the farmers based on Rice Check technology. The data taken were analyzed by using Statistical Package for Social Science (SPSS) version 21. The system used to analyze the descriptive data, correlation coefficient and regression in purpose to see the strength of relationship between independent variable and dependent variable. Independent variable comprised of component in technology transfer based on Rice Check namely planning, implementing and monitoring while dependent variable is the work performance of extension agents. Results show that the extension agents highly competence in the transferring of technology process in planning, implementing and monitoring. While the correlation shows moderate positive correlation between the independent variable with dependent variable. All the skills are important in affecting the work performance of extension agents in granary areas of Malaysia.

ABSTRAK

Pengeluaran padi di Malaysia masih dalam kuantiti yang rendah dimana masih tidak dapat menampung keperluan penduduk Malaysia. Dalam usaha untuk memenuhi keperluan penduduk, kerajaan mengimport beras tambahan dari negara lain seperti Thailand dan Vietnam. Selain itu, MARDI juga mencadangkan beberapa cara untuk meningkatkan pengeluaran hasil padi. Antaranya adalah teknologi Semakan Padi yang terdiri daripada sepuluh komponen. Objektif kajian adalah bertujuan untuk mengkaji kompetensi agen pengembangan dalam memindahkan teknologi kepada para petani berdasarkan Semakan Padi melalui tiga kemahiran iaitu kemahiran merancang, melaksana dan memantau. Kaedah yang digunakan adalah dengan menggunakan soal selidik dan data analisis. Responden dipilih terdiri daripada petani yang berasal dari empat kawasan jelapang padi di Malaysia iaitu IADA Ketara Terengganu, IADA Pulau Pinang, IADA Kerian dan IADA Seberang Perak yang berjumlah 535 responden. Soal selidik ini terdiri daripada dua komponen. Komponen berikut adalah profil demografi petani dan tahap kompetensi agen pengembangan dalam merancang, melaksana dan memantau petani berdasarkan teknologi Semakan Padi. Data yang diambil telah dianalisis dengan menggunakan SPSS versi 21. Ia digunakan untuk menganalisis data deskriptif, korelasi dan regresi bertujuan untuk melihat kekuatan hubungan antara pembolehubah bebas dan pembolehubah bergantung. Pembolehubah bebas terdiri daripada komponen dalam pemindahan teknologi berdasarkan Rice Check iaitu merancang, melaksana dan memantau manakala pembolehubah bergantung adalah prestasi kerja agen pengembangan. Keputusan menunjukkan agen pengembangan sangat kompeten dalam proses pemindahan teknologi dalam semua kemahiran perancangan, pelaksanaan dan pemantauan manakala korelasi positif yang sederhana antara pembolehubah bebas dengan pembolehubah bergantung. Kesemua kemahiran didapati penting dalam mempengaruhi prestasi kerja agen pengembangan.

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ABBREVIATIONS

DAN	'Dasar Agro makanan Negara'
MoA	Ministry of Agriculture
DoA	Department of Agriculture
NKEA	National Key Economic Areas
FAMA	Federal Agricultural Marketing Authority
MoF	Ministry of Finance
MADA	Muda Agricultural Development Authority
KADA	Kemubu Agricultural Development Authority
MARDI	Malaysian Agricultural Research and Development Institute
FOA	Farmer's Organization Authority
IADA	Integrated Agriculture Development Area
KETARA	North Terengganu Integrated Agriculture Development
SPSS	Statistical Package for Social Sciences
UPM	Universiti Putra Malaysia
mt/ha	metric ton per hectares

CHAPTER ONE

INTRODUCTION

1.0 Introduction

Chapter 1 is about the introduction of the study which is comprised of Agriculture in Malaysia, Paddy Farming in Malaysia, Granary Area in Malaysia, Technology Transfer, Definition of Competency, Problem Statement, Research Questions and Objective of the study.

1.1 Agriculture in Malaysia

Malaysia is one of the country that located in equatorial climate with uniform temperature, high humidity and copious rainfall which is at South-East Asia. This location consist of two geographical region that separated by the South China Sea whereas Peninsular of Malaysia in the west, lying on between Thailand and Singapore. While Sabah and Sarawak is located in the northern part of the island of Borneo shared with Indonesia. Total land area of Malaysia is 330,800 km^2.

Agriculture is one of the important sector that contribute to the development of social and economics of Malaysia and contribute 7.1% to Gross Domestic Product (GDP) for 2013 (DoA, 2013). This sector act as an important role as the food source that feeds people all over the world. In Malaysia, agriculture can be divided into two categories which are agricultural commodities for industrial and food commodities. An agricultural commodity for industrial is the production crop for exporting purposes. While for the food commodities, their production of crops are for the requirements of domestic use only. Example for agricultural

commodities for industrial are oil palms, rubbers, timbers and cocoa and for food commodities such as paddy, livestock, vegetables fruits and many more.

According to the big contribution of agriculture sector in economic developments which is stated as first priority in Malaysia budget by Ministry of Finance (2015), government allocate RM5.3 billion to this sector in budget 2016. According to the speech of Prime Minister of Malaysia, the division of this budget is (i) RM450 million provided for variety high impact programs such as planting of fruits and vegetables as well as matching grants and research of herbal products and rearing fish in cages, (ii) RM180 million for upgrading the infrastructure of drainage and irrigation in Integrated Agriculture Developments Area (IADA), (iii) RM190 million give to FAMA, which is for the purpose of Price Reduction Program through addition of more than 50 Agromarket and 150 new Agrobazar Rakyat 1Malaysia (ABR1M). 40% of the ABR1M sale products such as fish and vegetables, and it cost only 5 to 30 % less than market price and; (iv) RM90 million is allocated to the Entrepreneurs Financing Fund for Agricultural Development and Agropreneur Programme.

Economic performance of agriculture increasing from 2.1% in 2013 to 2.6% in 2014 which is RM57,528 million. Based on Department of Statistic, Malaysia, the biggest contributor is the palm oil sub-sector at 36.6%, followed agriculture (20.1%) fisheries and aquaculture (14.6%).

1.2 Paddy Farming in Malaysia

Malaysia is one of the countries that are consuming rice as the staple food to most of the citizens and small rice producer compared to neighbor country such as Indonesia, Thailand and China (DoA, 2013). Rice cultivation is the major food crop beside oil palm, rubber and coconut. Currently, there are more than 300,000 farmers are doing cultivation on rice in

674,928 ha of land areas (Rashid & Dainuri, 2013). In Malaysia, total active population is estimated increasing every year. Production of rice cannot support the population feed. Furthermore, from Figure 1.1 below, it shows that total paddy import on 2013 is 1,583.8 metric tons in order to feed the citizen.

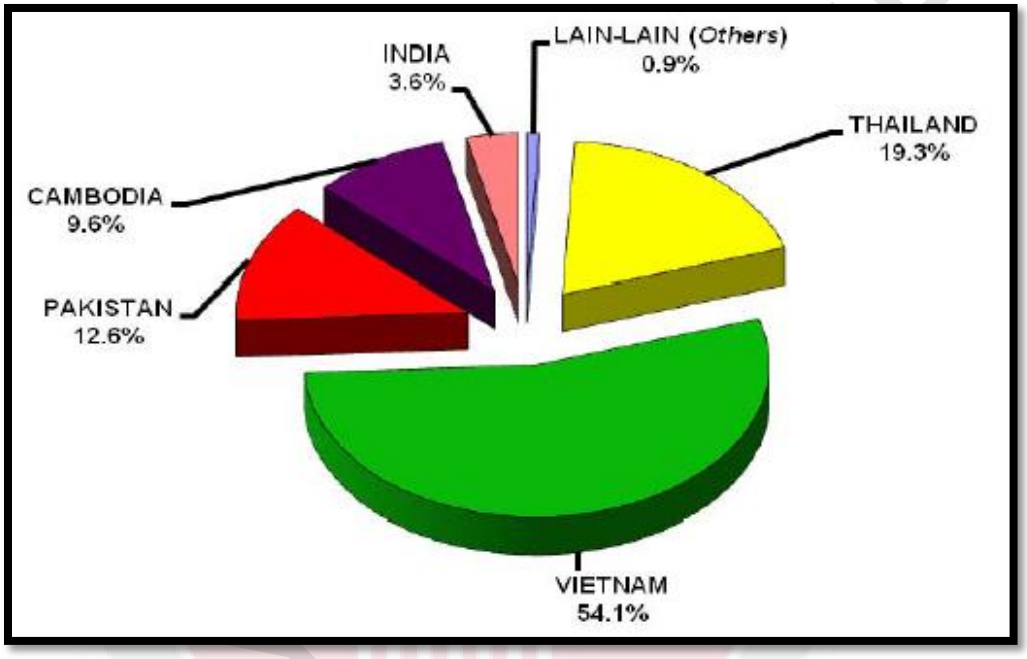

Figure 1.1: Import of rice by country, Malaysia 2013 – 1,583.8 metric tons

To fully meet the requirement of rice, Padi Beras Nasional Berhad (BERNAS) imported about 30% to 40% of Malaysia's domestic rice demand annually (BERNAS, 2014). According to DoA, 2005 also, Malaysia still imports 458, 600 metric tons of rice in order to fulfill the feed of population.

In applying varieties of rice such as MR263, MR220CL1 and MR220CL2, introduced by MARDI which is targeted to produce 10 metric tons of yields, still, the rice is not enough to the population. This is because of the average yield not achieved the target.

1.3 Granary Area of Malaysia

Based on the Statistic Paddy of Malaysia, granary areas refer to the major irrigation scheme which is covered more than 4,000 ha area and recognized by government in the National Agriculture Policy as the main producing areas. Granary areas covered 393,306 ha by 1,855,276 metric tons of paddy production for 2013 based on Crop Statistic by *Dasar Agromakanan Negara.* The production of rice for granary area is 1,205,930 metric tons. There are eight granary areas in Malaysia as below (Paddy Statistic of Malaysia, 2013) and the location can be referred to the Figure 1.2. While, Table 1.1 shows the total area with average of the yield produce by granary areas of Malaysia;

i. IADA Pulau Pinang
ii. IADA Terengganu Utara (KETENGAH), Terengganu
iii. MADA, Kedah
iv. IADA Seberang Perak, Perak
v. IADA Kerian, Perak
vi. KADA, Kelantan
vii. IADA Kemasin Semarak, Kelantan
viii. IADA Barat Laut Selatan, Selangor

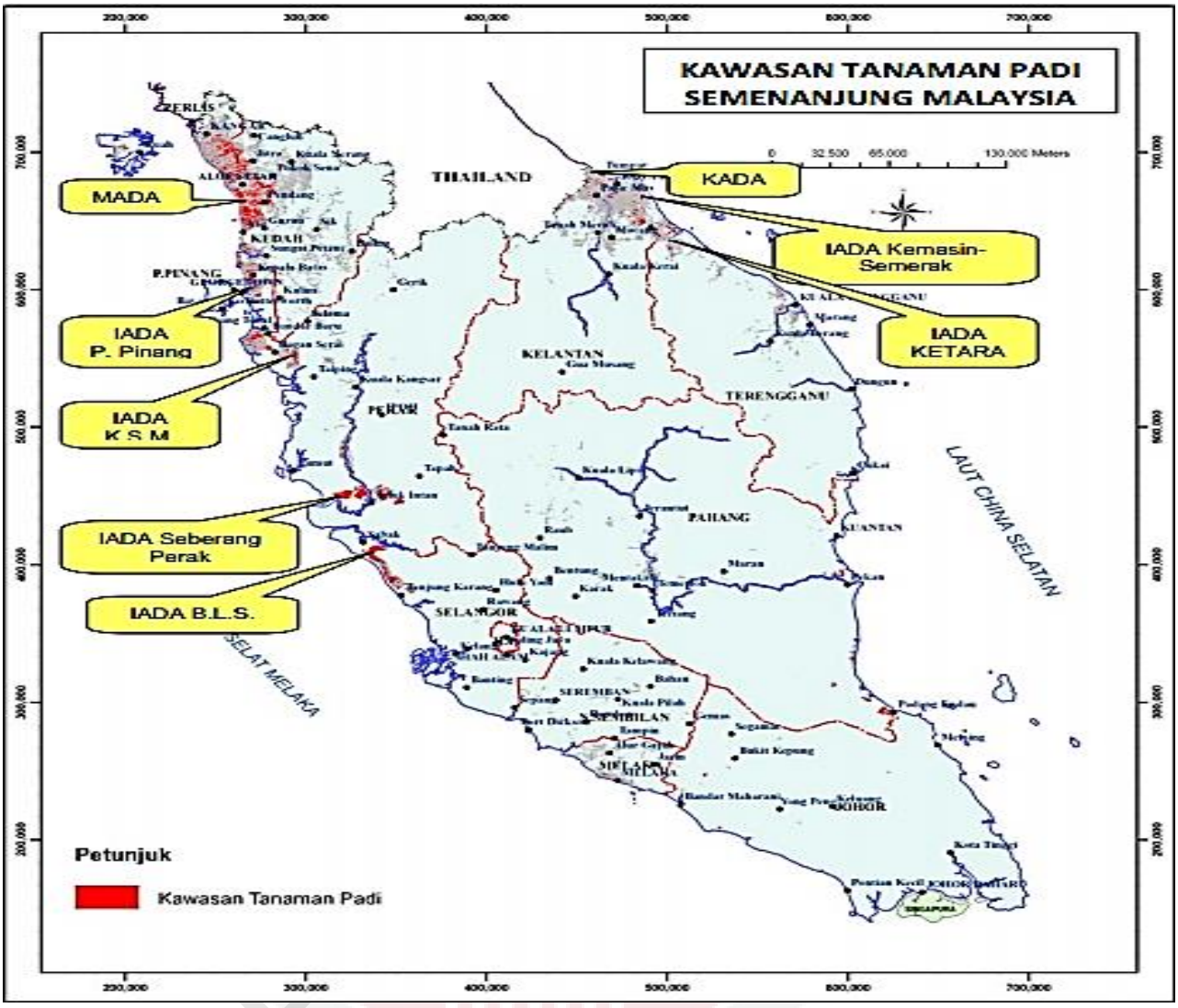

Figure 1.2: Granary area of Malaysia (Paddy Statistic of Malaysia, 2013)

Table 1.1: Total Area and Average Yield of Malaysia's granary area

No.	Area	Area (ha)	Average Yield (ton/ha)
1	IADA Barat Laut Selangor	37 833	6.3
2	KETARA Terengganu	9 752	5.5
3	IADA Pulau Pinang	20 610	5.8
4	MADA	187 413	5.0
5	IADA Kerian	41 955	4.5
6	IADA Kemasin Semarak	5 383	3.5
7	KADA	38 641	4.1
8	IADA Seberang Perak	27 686	4.6

1.4 Rice Check Technology

Rice check is guidance for managing the paddy crop according to set targets. Every main component in it needs to be followed correctly for better growth of paddy in order to produce high yield. There are 10 components including in the Rice Check that need to be applied by all people that involving in this planting (MADA, 2015). The 10 components are; (i) determination of soil acidity status, (ii) design of land, (iii) weedy rice control, (iv) irrigation schedule, (v) land preparation, (vi) sowing seeds, (vii) fertilization, (viii) water management, (ix) pest and weed control, (x) harvesting.

1.5 Competency

The term of competency is first probably introduced by David McClelland to the psychology literature in his article titled ‘’Testing for competence rather than intelligence’’. Bueno and Tubbs (2014) stated that competency comes from Latin word which is means ‘‘suitable’’. The word competency defined as ‘‘a basic characteristics of a person that give superior performance in a job’’ (Boyatzis, 1982). Competency including the knowledge, skills, abilities, traits and behaviors that make a person to perform a task within a specific function or job (Vichita and Jintawee, 2007). Competency also defined as underlying characteristics of a person which enables them to deliver superior performance in a given job, role or situation (Haygroup, 2013). While Okwoche et al. (2011) specified that skill of competencies area is including the communication skills, human skills, conceptual skills, emotional intelligence skills and industry knowledge skills.

1.6 Problem statements

There are many efforts done by the government or agencies to improve the production of paddy to feed the population. According to Rashid and Dainuri (2013), the government gave incentives and subsidy programs to sustain paddy sector and help the farmers. For example, Malaysian Agriculture Research and Development Institute (MARDI) generated many technologies in order to increase the yield production such as introducing Rice Check technology in 2002 and released by DoA as a guide to the farmers in paddy production, producing new quality varieties to achieve 10 metric ton per ha, improved the agronomy practices and production system and also the management of postharvest handling. Other than that, Department of Agriculture (DoA) also involved in leading the transfer of technology while Farmers Organization Authority (FOA) give help in financial to the farmers.

Although, the biggest cultivated paddy land in MADA also cannot achieve the national target average yield.

All above are about the extension in agricultural sector. Since, extension is a non-formal education (Tiraieyarie, 2009), thus extension agents competency is related to the effectiveness of the extension services or in delivering the information about the agriculture extension. It is highly dependent on the ability of the extension agents to transfer information from extension organization to the farmers (Tiraieyarie, 2009).

Hence, this study is to identify the competency of extension agents in term of relationship between work performance with competency level in planning, implementing and monitoring which are play important role in total average production of paddy in granary areas in Malaysia.

1.7 Research Questions

i. What is the level of competency of extension agents towards planning activities in transferring technology to paddy farmers?

ii. What is the level of competency of extension agents towards implementing activities in transferring technology to paddy farmers?

iii. What is the level of competency of extension agents towards monitoring activities in transferring technology to paddy farmers?

iv. What is the work performance of extension agents?

v. What is the relationship between planning, implementing and monitoring with work performance?

1.8 Objectives

1.8.1 General Objective

To study the competency of extension agents in transferring technology to the farmers based on Rice Check in granary area of Malaysia.

1.8.2 Specific Objectives

The specific objectives are;

i. To measure the competency level of extension agents in planning activities in transfer of technology based on Rice Check in granary area of Malaysia.
ii. To measure the competency level of extension agents in implementing activities in transfer of technology based on Rice Check in granary area of Malaysia.
iii. To measure the competency level of extension agents in monitoring activities in transfer of technology based on Rice Check in granary area of Malaysia.
iv. To indicate the work performance of extension agents at granary area of Malaysia.
v. To study the relationship between planning, implementing and monitoring with work performance based on Rice Check in granary area of Malaysia.

REFERENCES

JOURNAL

Boyatzis R.E. 1982. *The Competent Management: A Model for Effective Performance*. New York: John Wiley.

Bueno, C. and Tubbs, S. 2014. *Identifying Global Leadership Competencies: An Exploratory Study.* Journal of American Academy of Business. Sep. 2004. 5(1/2), p. 80-87.

Department of Agriculture Peninsular Malaysia. 2005. *Paddy Statistic of Malaysia*.

Department of Agriculture Peninsular Malaysia. 2012. *Paddy Statistic of Malaysia*. 2011, 1-106. Retrieved from http://nkea.mardi.gov.my/index.php/epp-pertanian/epp/30-epp9-pengeluaran-beras-wangi-di-kawasan-luar-jelapang-padi

Department of Agriculture Peninsular Malaysia. 2013. *Paddy Statistic of Malaysia*.

HayGroup. 2013. *Using Competencies to Identify High Performers: An Overview of the Basics*. Haygroup Incorporation. Retrieved on 4 January 2016 from http://www.haygroup.com/downloads/uk/competencies_and_high_performance.pdf

Krejcie, R and Morgan, D. 1970. *Determining the Sample Size for Research Acitivities*. Educational and Psychological Measurement. Vol 30 : 607-610.

Lakai, D. 2010. *Identifiifcation of Competency Needed by Extension Agent in North Carolina Cooperative Extension.*

Ministry of Finance Malaysia. 2015. *2016 Budget.* Ministry of Finance Malaysia: Federal Government Administrative Centre. Retrieved on 29th December 2015 from http://www.treasury.gov.my/pdf/budget/speech/bs16.pdf

Metrani, A., Dalziel, M. and Fitt, D. 1992. *Competency Based Human Resource Management*. HayGroup.

Okwoche, V. A., Ejembi, E. P. and Obinne, C. P. O. 2011. *Professional Competencies to be Important and Needed by Female and Male Agricultural Extension Agents: A Study from Nigeria.* Journal Agricultural Science, 2(2): 121-126 (2011)

Padiberas Nasional Berhad (BERNAS). 2014. Retrieved from http://www.bernas.com.my/

Rashid, R. and Dainuri, S. 2013. *Food and Livelihood Security of the Malaysian Paddy Farmers*. Economic and Technology Management Review. Vol 8 (2013) : 59-69

Spencer, Jr. L.M. & S.M. Spencer. 1993. *Competence at Work: Models for Superior Performance*. Canada: John Wiley & Sons, Inc.

Tiraieyarie, N. 2009. *Relationships between Extension Worker's Competencies and Job Performance in Implementing the Good Agricultural Practices Program in Malaysia*. PhD Thesis, Universiti Putra Malaysia.

Vichita, V and Jintawee, T.. 2007. *Competency Requirements for Effective Job Performance in the Thai Public Sector*. Contemporary Management Research. 3:45-70.

INTERNET

MADA. 2015. *Senarai Semakan Tanaman Padi*. Retrieved on 30th December 2015 from http://www.mada.gov.my/.

Ministry of Agriculture. 2016. *IADA KETARA*. Retrieved from http://www.moa.gov.my/web/guest/iada-ketara

Ministry of Agriculture. 2016. *IADA Kerian*. Retrieved from http://www.moa.gov.my/web/guest/iada-kerian-sungai-manik

Ministry of Agriculture. 2016. *IADA Seberang Perak*. Retrieved from http://www.moa.gov.my/web/guest/iada-seberang-perak

Ministry of Agriculture. 2016. *Latar Belakang IADA Pulau Pinang*. Retrieved from http://iadapp.gov.my/Web/Page/Default.aspx?Page=Latar_Belakang