UNIVERSITI PUTRA MALAYSIA

RELATIONSHIPS BETWEEN EXTENSION WORKERS' COMPETENCIES AND JOB PERFORMANCE IN IMPLEMENTING THE GOOD AGRICULTURAL PRACTICES PROGRAMME IN MALAYSIA

NEDA TIRAIEYARIE

FPP 2009 10

RELATIONSHIPS BETWEEN EXTENSION WORKERS' COMPETENCIES AND JOB PERFORMANCE IN IMPLEMENTING THE GOOD AGRICULTURAL PRACTICES PROGRAMME IN MALAYSIA

By

NEDA TIRAIEYARIE

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfilment of the Requirement for the Degree of Doctor of Philosophy

JUNE 2009

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Doctor of Philosophy

RELATIONSHIPS BETWEEN EXTENSION WORKERS' COMPETENCIES AND JOB PERFORMANCE IN IMPLEMENTING THE GOOD AGRICULTURAL PRACTICES PROGRAMME IN MALAYSIA

By

NEDA TIRAIEYARI

JUNE 2009

Chairman: **Khairuddin Idris, PhD**

Faculty: **Educational Studies**

This study sought to determine extension workers' competencies that explain job performance in the case of the Good Agriculture Practices (GAP) Scheme at the Department of Agriculture, Malaysia. Specifically, the study determined extension workers' competency levels in clients' capacity development, SALM Standards, social skills and technology transfer process as independent variables. The study also determined the level of extension workers' job performance as a dependent variable.

The study employed stratified random sampling technique. Samples are chosen using a proportional sample allocation. The sample consisted of 210 extension workers from the Department of Agriculture in four states of Malaysia, namely Perak, Negeri Sembilan,

Kelantan and Johor. Data were collected using a self administered questionnaire. The data were analyzed using descriptive statistics, Pearson correlation and multiple regression analysis.

Results indicated that more than half of extension workers rated their level of job performance as high. A majority of respondents also rated their competency on leadership development, problem solving and decision making development, social skills, and technology transfer process skills as high. More than half of the respondents indicated high ratings for cultural and SALM program competencies. The finding supported the positive relationship between all competencies and job performance. However, only four competencies were significant in explaining job performance of extension workers. These are competencies on program evaluation, culture of clients, SALM program and social.

This study is important as it contributes to the Interdependence Model of Extension by confirming competencies that extension workers need to have in both technical and human development. The findings would also assist policy makers and administrators in increasing the performance of extension workers. The competencies that have been identified in this study can be incorporated into both the pre-service and in-service training of extension workers.

Abstrak tesis yang dikemukakan Kepada Senat University Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doctor Falsafah

PERHUBUNGAN ANTARA KOMPETENSI PEKERJA PENGEMBANGAN DAN PRESTASI KERJA DALAM PELAKSANAAN SKIM AMALAN LADANG BAIK DI MALAYSIA

Oleh

NEDA TIRAIE YARI

JUNE 2009

Pengerusi: Khairuddin Idris, PhD

Fakulti: Pengajian Pendidikan

Kajian ini bertujuan menentukan kecekapan pekerja pengembangan yang dapat menerangkan prestasi kerja mengenai Skim Amalan Baik (SALM) di Jabatan Pertanian Malaysia. Secara khusus, kajian ini menentukan tahap kecekapan pekerja pengembangan berkenaan pembangunan daya peladang, standard SALM, kemahiran sosial dan proses pemindahan teknologi. Kajian juga menentukan tahap prestasi kerja pekerja pengembangan sebagai angkubah bersandar.

Kajian menggunakan teknik persampelan rawak berstrata. Sampel dipilih secara pembahagian sampel serata. Persampelan terdiri daripada 210 orang pekerja pengembangan dari Jabatan Pertanian di empat negeri di Malaysia iaitu, Perak, Negeri

Sembilan, Kelantan dan Johor. Data telah dikumpul melalui borang soal selidik isi sendiri. Data dianalisis menggunakan statistik deskriptif, korelasi Pearson dan analisis regresi pelbagai.

Hasil kajian menunjukkan lebih dari separuh pekerja pengembangan menyatakan prestasi kerja mereka adalah tinggi. Sebilangan besar responden juga menyatakan kecekapan mereka dalam pembangunan kepimpinan, pembangunan penyelesaian masalah dan membuat keputusan, dan proses pemindahan teknologi juga tinggi. Lebih separuh daripada responden juga menunjukkan tahap kecekapan yang tinggi berkenaan budaya pelanggan dan Skim SALM. Penemuan kajian menyokong perkaitan positif dalam semua kecekapan dan prestasi kerja. Kecekapan tersebut ialah penilaian program, budaya pelanggan, Skim SALM dan sosial.

Kajian ini penting kerana ia menyumbang kepada Model Saling Pergantungan Pengembangan dengan mengesahkan kedua dua kompetensi teknikal dan pembangunan manusia yang diperlukan oleh pekerja pengembangan. Penemuan kajian juga dapat membantu pembentuk polisi serta pentadbir dalam meningkatkan prestasi pekerja pengembangan. Kecekapan yang telah dikenalpasti dalam kajian ini juga boleh dimuatkan dalam latihan pra-kerja dan dalam kerja pekerja pengembangan.

ACKNOWLEDGEMENT

In the first place I would like to praise God for whatever gifts He's given to me. This research would not have been possible without the support of many people. For most I would like to thank members who serve on my committee. I would like to express my deepest appreciation to Dr. Khairuddin Idris for his academic advice, supervision and friendly helps throughout this process in different ways. His support was consistent from start to finish. I owe my most sincere gratitude to Professor Azimi Hamzah, who helped and supported me during data collection in Malaysia. I have also benefited by advise and guidance from him in the filed of agricultural extension and education. Special thanks go to my other committee member Associate Professor Dr. Jegak Uli for his valuable advice and recommendations in this research. His guidance and help in statistic and data analysis were greatly appreciated.

Many thanks go to the Department of Agriculture in Malaysia for their cooperation and approval letter for this research. Thanks to personnel of the Department of Agriculture for their willingness to provide required information.

Lastly, and most importantly, I wish to thank my parents for their generous and constant support throughout my life especially during my academic and professional goals. This dissertation was simply impossible without their help. I am indebted to my father for all his sacrifices. This thesis dedicated to my parents who played a significant role in my life.

TABLE OF CONTENTS

LIST OF TABELS

LIST OF FIGURES

LIST OF ABBRIVAIATION

FAO	Food and Agricultural Organization
HRD	Human Resource Development
T&V	Training and Visit Extension System
EDP	Exploratory Data Analysis
TOT	Transfer of Technology
SPSS	Statistical Package for Social Science
SALM	Skim Amalan Ladang Baik Malaysia
GAP	Good Agricultural Practice
DOA	Department of Agriculture
FOs	Farmer organizations
NAP3	Third National Agricultural Policy
TI	Technical innovation
LD	Leadership Development

CHAPTER I

INTRODUCTION

This study is an attempt to describe and determine the relationship between different areas of competencies and job performance in relation to the Good Agricultural Practice (GAP) among Malaysian extension workers at the Department of Agriculture (DOA). This chapter contains eight sub topics sections: background of the study, statement of the problem, objective of the study, significance of the study, research hypothesis, scope and limitations, assumption of the study and definitions of terms.

Background of the Study

Agriculture in Malaysia

Agriculture has played a key role in the development of Malaysia. This country is the world's leading palm oil producer and the third largest producer of natural rubber. Agriculture continues to make a significant contribution to the national economy. In 2003, the agriculture sector registered a growth of 5.5%, following in importance the manufacturing and the service sectors. In 2004, the government of Malaysia announced the agriculture sector to be the third engine of growth. The government's policy towards agriculture focuses on increasing production, in order to achieve food self-sufficiency and to develop exports (FAO, 2004).

As reported by Ahmad Sarji Abdul Hamid (2006) in 2005 the agricultural sector contribution was 9% of GDP, 4% of export tax, 6% of export earning and employed 13% of total labour.

Rice cultivation is the major food crop enterprise but priority agricultural systems throughout Peninsular Malaysia, Sabah and Sarawak are based on oil palm, rubber and coconut. Accounting for about 0.67 million hectare for all seasons in 2001 (Ministry of Agriculture, 2003). Oil-palm, rubber, coconut and durian also occupy large areas in the agricultural cropping systems. In 2001, there were 3.63, 1.57, 0.15 and 0.12 million hectares of oil-palm, rubber, coconut and durian, respectively. Together with paddy, these crops covered 97% of the cultivated agricultural land in Malaysia (Department of Agriculture, 2003).

Agricultural sector in Malaysia is divided into two sub-set namely industrial commodities such as oil palm, forestry and logging, rubber and cocoa, and the food commodities covering fisheries, livestock, paddy and coconut, vegetable, fruits, tobacco and pepper. The food commodities account for about 16% of the total agricultural exports in 2005. In terms of agricultural land use, food commodities account for about 12.5% as compared to oil palm plantations covering at 63.4% of food commodities (Chen and Hasnah Mohd.Zain, 2006).

The Malaysian agricultural sector is characterized by dualism in its production systems which are the estate sub sector and smallholding sub sector. The estate sub sector is highly commercialized but smallholding sub sector making up less commercialized. The

average size of a small farm holding is about 1.45 hectares. However, because of the large number of small farm holdings, the hectares of land operated by them are larger than that of the estate sub sector. At present there are more than 1 million small holders cultivating about 75% of land area under agriculture. The estates totally involved in the production of industrial crops. However the small holdings are the main contributors to the food crop as well as the industrial crop (Norma Othman, 2006).

The bottom line in agricultural trade is that manufacturers are demanding agricultural products that are produced in a safe and sustainable way and with assurance that they are truly conforming to standards of Good Agriculture Practice (GAP). Towards this objective, attention has been given on sustainable agricultural productions (Norma Othman, 2006).

Thus, the Malaysian government is trying to encourage production in the food sector for export and to develop and expand the market for agricultural produce and agro-based products globally in order to balance the trade, especially in agriculture by 2010. For that purpose, the third National Agricultural Policy (NAP3) was launched on 22 February 1999. In this policy, agriculture is recognized as the third engine of growth, after the manufacturing and service sectors and has been given more emphasis (Mohamed Mohd. Salleh, 2007).

However, 90% of the clients in the food sector are smallholders with uneconomic-sized farms. The cost of production of these smallholders is high, with low input, low yield and poor quality produce. Thus, the government launched several good agricultural

practice (GAP) schemes in order to improve the quality of produce and the income of clients. These smallholders are the target for the GAP schemes (Mohamed Mohd. Salleh, 2007) and the mission statement of the Department of Agriculture currently includes provision of consultancy services to these small holders (Farrington, Christoplus, Kidd & Beckman, 2002). Taking cognizance of these challenges and to achieve the new Agricultural Policy, Malaysia has also embarked on the program to ensure that the agricultural production meets the guidelines of sustainable agriculture. Hence a certification scheme audited to GAP standard was introduced and implemented in the country.

Good Agricultural Practices (GAP)

The GAP approach applies recommendations to addressing environmental, economic and social sustainability for on-farm production and post-production processes resulting in safe and quality food and non-food agricultural products (FAO, 2003).

Similarly Iowa State University (2004) defined The Good Agricultural Practices as set of recommendations that can help improve the quality and safety of the produce grown. The GAP focus on four primary components of production and processing: soil, water, hands, and surfaces. According to FAO (2003), The Good Agricultural Practices covers on-farm and post-farm activities related to food safety, food quality and food security, the environmental impacts of agriculture and often various social objectives including animal health and welfare and agricultural workers rights. A GAP approach to agriculture involves the establishment of guidelines or standards for agricultural producers and post-farm handlers, the monitoring of these standards, and the

communication of these standards through credible quality signals to downstream firms, consumers and the public in general (FAO,2003). Norma Othman (2006) defined the Good Agricultural Practice as an integrated system to manage the hazards associated with the elements of land, input, processes and output of agricultural production to achieve productivity, sustainability, quality and safe produce.

The first GAP scheme for food crops introduced in Malaysia was the Malaysian Farm Certification Scheme for Good Agricultural Practice (Skim Amalan Ladang Baik Malaysia) with the acronym SALM. The scheme was developed by the Department of Agriculture of the Ministry of Agriculture and Agro- based Industry, modeled after EUREPGAP and later was modified to suit the needs of the local and international markets. It was launched in the year 2002 (Norma Othman, 2006).

SALM is a national program implemented to recognize and certify farms which adopt Good Agricultural Practices (GAP), considering products that are of quality, safe and suitable for consumption. The SALM certification scheme comprises 16 components, whereby each component is made up of rules. The scheme is based on Malaysian Standard MS 1784:2005 – Crop Commodities – Good Agricultural Practice. The GAP schemes provide an assurance to consumers that the farm produce are safe for consumption (Norma Othman, 2006).

As the focus of this study is on extension workers transferring SALM program to the clients, it is important to note that getting clients to apply SALM or any new technology needs motivation and encouragement. A series of training throughout the country were

held by the DOA to explain the nature and rationale for this program to the clients', with emphasis on the benefits it brings. However many of the clients still have not adopted the SALM practices. According to Normah Othman (2006) adoption of SALM requires changing the mindset of the clients to conform and fulfill the conditions of SALM as stipulated in the scheme. As SALM is based on certain standards, clients who registered have to adjust their way of doing things on their farms such as keeping proper farm records which is not a norm amongst Malaysian clients who produce food crops. Adoption of SALM and Participation in this program in Malaysia is voluntary and there is no legislative control and no incentives given by the government, therefore the response from the clients and producers are quite slow.

Since the Third National Agriculture Policy in 1999, the emphasis has been on improving the quality of fresh produce, particularly for the export market in order to balance the Malaysian trade by 2010. To achieve this target, the Malaysian government launched good agricultural practices (GAP) in 2002 to promote agricultural products.

The government has introduced several certification schemes and this study focuses on the Malaysian Farm Good Agricultural Practice Scheme (SALM). The first Good Agricultural Practice scheme introduced in Malaysia was "Skim Akreditasi Ladang Malaysia" (SALM) or Malaysian Farm Accreditation Scheme by the Department of Agriculture Malaysia (DOA). The scheme was later changed to "Skim Amalan Ladang baik Malaysia," carrying the same acronym SALM. This is a voluntary scheme in which interested clients have to meet a set of requirements before being certified. The ultimate

goal of the scheme is for a produce to be branded as "Malaysia's Best", which is an internationally accepted mark (Mohamed Mohd Salleh, 2007).

SALM was launched on 31 January 2002 by the DOA. It is a national programme implemented to recognize and certify farms which adopt Good Agricultural Practices (GAP), operating in an environment friendly way, considering workers health and safety and yielding products that are of quality, safe and suitable for consumption. It is mandatory for the clients to take corrective action to address the weakness (Normah Othman, 2006).

The SALM Certification Scheme comprises 16 components, whereby each component is made up of rules or specific conditions. The scheme is based on Malaysian Standard MS 1784:2005 – Crop Commodities – Good Agricultural Practice (GAP). The components are:

> 1. Traceability 2. Record keeping and internal audit 3. Planting materials and root stocks 4. Site history and site management 5. Soil and substrate management 6. Fertilizer management 7. Irrigation and fertigation 8. crop protection 9. Harvesting 10. Post harvest handling 11. Pesticide residue analysis of Produce 12. Waste and pollution management, recycling and re-use. 13. Workers' health, Safety and welfare 14. Environmental issues. 15. Record of complaints 16. Legal requirements.

SALM provide an assurance to consumers that the farm produce are safe and suitable for consumption as they come from farms that have been certified. Improved consumer

confidence will facilitate easier market access as consumers perceive food safety to be integral to food quality. The GAP training programme for Malaysian clients focuses more on the SALM certification, since SALM is a programme that encompasses and integrates many activities that the DOA has been extending to Malaysian clients in the past such as farm record keeping, crop management, soil conservation, integrated pest management and post-harvest handling. Hence SALM certification is a value-added incentive for clients producing food commodities adhering to GAP (Normah Othman, 2006).

According to Normah Othman (2006).The Department of Agriculture plays a lead role in the extension programme in Malaysia. In order to achieve the objective of the sustainable agriculture and rural development, one of the major parts of the extension program is training of clients or the implementers. The objective of the training program is to increase awareness of good agricultural practices among clients. The GAP training programme for clients involved in crop production focuses more on the SALM certification. How ever the level of awareness among clients is still low since there have been insufficient promotional efforts to encourage adoption of SALM by clients.

Importance of extension education

Many clients in developing countries lack knowledge and skill of Good Agricultural Practice. The lack of knowledge cause the decline of trust between the agricultural and food processing sectors and reduces the potential benefits from food exports. Therefore clients need to be educated in the skills of farm management involving the adoption of GAP to produce raw materials that are of good quality and safe. Since extension is a