

# Identify the Knowledge Level of Rural Leaders towards Paddy Farming Technologies in Muda Agriculture Development Authority (MADA-MALAYSIA)

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## Abstract

Rural leaders are the people who are able in an informal manner that the influence relatively frequently on the behavior and attitudes of others towards what is desirable. However, The study was conducted to determine the knowledge perception levels of rural leaders of paddy farming technologies in muda agriculture development authority (MADA). The sample size of this study is (260). The random Sampling technique was used in this study. This research also was done by interview approaches to gain the knowledge perception levels of rural leaders of paddy farming technologies. Using SPSS, descriptive and inferential analyses was performed to fulfill the objectives determined. Based on the results gained, the knowledge level of paddy farming technologies among respondents is moderate. Further analysis done have proved that there is a significant relationship between some social, demographic factors and level of knowledge of respondents on paddy farming technologies, it is recommended that rural community access and exposure to agricultural technologies must be strengthened, so that our future generations will have good knowledge on paddy farming technologies to have the best paddy.

**Keywords:** Knowledge, Rural Leaders, Technologies, Paddy Farming, MADA

## 1. Introduction

Agriculture is one activity that is more important to human life than just being important to the economic growth of a country which makes it totally different from other economic activities. Reason being the most important food for life and agriculture being the only source for that. It does not only impact the economy of a country, but also has several environmental, ethical, cultural and social aspects to it<sup>1</sup>. new technologies such as organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good of life for all involved”.[1] Malaysia’s heading nourishment yields are: rice; soil

grown foods, for example, papaya, pineapple, banana and star fruit; and vegetable harvests like chili pepper, cabbage and different Brassicas; Curcubits (cucumbers and comparative products); Solanaceous products (tomato, eggplant, sweet pepper); and beans (Fabaceae). Rice growth possesses the biggest area region, representing 670,000 ha in 2010[2]<sup>2</sup>. Oil palm, elastic, coconut and durian likewise possess substantial development regions. Together with rice, they speak to 97% of the sum rowed farming land in Malaysia<sup>3</sup>. Paddy farming in Malaysia is one of the first irrigated rice production systems observed in Asia. Indirectly, our first perception, Malaysia is way forward in advancement of paddy farming. Unfortunately, these days, Malaysia is way at the back of Asia countries.

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Malaysia is one of many countries in our planet where food self-sufficiency is decreasing, year by year. Consequently, Malaysia is becoming a net food importing country.<sup>4</sup> Thus the Muda Agricultural Development Authority (MADA) was established in 1970, and delegated semi-autonomous powers by the Parliament to manage the project, directly under the auspice of the Ministry of Agriculture in the Federal Government<sup>5</sup>. MADA is responsible to operate and maintain all the irrigation and drainage infrastructures; to propagate and advance agriculture technology through training and extension services to farmers; to regulate and promote farmer association activities; and to perform many other functions related to the technical, social and economic development of the agriculture sector.<sup>[4]</sup> This is consistent with the concept irrigated agriculture, as a complex socio-technical system, requires coherent and dynamic management effort to nurture and develop both the social and technical assets. The Integration of information technologies and services for citizens facilitates internal governance as well as transparency of government through external access by extension with Government is leveraging on technology to expand public and private financial networks in rural areas<sup>5</sup>.

MADA is organized into three major divisions by functions, namely Administration, Engineering, Agriculture and Planning and Evaluation, to provide a comprehensive range of services to the farming community, drawing on internal resources, expertise, skills, experience and judgment or external ones whenever required, and emphasis has always been placed on coordinated planning and implementation<sup>6</sup>.

## 2. Literature Review

Agriculture extension is referred to as complete organizations which are devoted to solve the problems which are faced by people in agricultural field and also update them in terms of skills, technology and knowledge required to improve the overall living and human capital per individual<sup>7</sup>. Agriculture extensions main idea is to make farmers able to find out the correct knowledge and reach out beyond the boundaries of the village and buy and follow the practice which is best for them. Malaysia along with countries like Nepal are countries which follow to the steps and information provided by the ministry of extension services<sup>8</sup>. Extension education in Malaysia

is a relatively new idea. Although extension work had been carried out in Malaysia since the inception of the Department of Agriculture, the concept applied was more fitted for 'advisory services' rather than extension work in its true sense<sup>9</sup>. As an effort to correct this misconception, the Department of Agriculture has since defined extension as: a process of developing human resources, of putting useful technology into action and transforming the rural economy and community into dynamic and productive institutions<sup>10</sup>. This definition denotes that extension has been viewed as a process of educating farmers and other rural dwellers to uplift their standard of living through learning of new knowledge, technology and skills and making use of them to overcome their problems related to their farms, homes, families and communities<sup>11</sup>. So far, the agricultural extension service in Malaysia can be considered as not sufficiently effective in developing agriculture since only focusing on the role of technology transfer and very little to the development of human resources. One of the main problems is the role and competency of personnel who have not satisfactory enough to deliver good services<sup>[12]</sup>. Based on the discussion above, focus of the study is to determine the level of roles among extension agents as change agents. Roles as change agents divided into four which encompasses role as catalyst, resource linker, solution giver, and process helper<sup>9</sup>. Generally, one can't effectively arrange the notion of initiative in an institutionalized manner. There are no general criteria to characterize initiative that apply to all of associations or circumstances and the plenty of expositive expression, knowledge compilation books, and handbooks on administration will validate that<sup>13</sup>. Therefore, Leader is technique for executing rural improvement approach. It is described by seven characteristics: Lags<sup>14</sup>. The development of rural areas and communities are essential for the well being of rural people in developing countries such as Malaysia since many rural areas are still characterized by low population density, poor infrastructure and limited access to public services<sup>15</sup>. According to<sup>16</sup>, the need for rural development and local leadership to address traditional obstacles and facilitate development in the face of new challenges is therefore vital. Due to the tremendous pace that development is taking place, leadership aspect is important to ensure that rural residents are not left behind and able to compete with the urban residents especially when it comes to development issues.

Accordingly, leadership is a purposive process which is inherently value-based. Consistent with the notion that leadership is concerned with change; the leader is basically a change agent<sup>17</sup>. Rogers (2010) also said that rural leaders are the people who are able in an informal manner that the influence relatively frequently on the behavior and attitudes of others towards what is desirable. As the rural leaders play a role in important programs in agricultural extension, so the agricultural extension is a connection process at two-stages: 1) Area Agricultural Extension agencies with rural leaders; 2) rural leader with other farmers. The leaders are a key contact between extension workers and farmers. Their task is to spread the message of education and to convince the farmers. Best management practices in paddy agriculture involve the practices which increases the productivity should the farmers have good information about this practices. It includes the practices right from land preparation to marketing the produce<sup>18</sup>. Therefore, leaders need to have better understanding on real work of extension agents, get familiar with and understand and fully informed the details of the mission of extension, the rural leaders in granary area are facing some problems. Among that is the adoption of the technology that has been transferred to them. Their knowledge's and skills are low because of the lack of training from agencies to leaders and lack of competence. As the result, they do not transfer the new information that they have about new technology to other farmers because the relation or the communication between the leaders and farmers is not well conducted.

### 3. Objective of Study

- Identifying characteristics of respondents.
- Identifying the perception levels of knowledge on paddy farming technologies of the respondents.
- Determine the relationship between socio demographic factors and perception level of knowledge on paddy farming technologies for the respondents.

### 4. Methodology

The data collected was done from April to June 2015 in Agriculture Development Authority (MADA) in

Malaysia. 260 respondents were selected by random Sampling. The instrument was for data collection was a questionnaire that consists of two sections. Section one had some socio demographic factors of respondents in the area of study like age, Religion, level of education, Occupation and etc. and section two had 22 statements of the knowledge of agricultural technologies in paddy farming. Five points Likert scale ranged from 1 = strongly disagree to 5 = strongly agree. Reliability was estimated by calculating Cronbach's alpha, which was 0.840. SPSS software was used to analyze the data collected, statistics such as frequency, percentage, mean, standard deviation and the q- square was used.

## 5. Results Discussion

Majority of respondent (25.8%, n = 260) were 43-48 years old, follow with 25.8% between age (49 to 54) years old, and the remaining 19.6% were respondents in the age above (55) years old. Most of the respondents in the study were Muslim religion. The below table shows the respondents' level of education (30.4%) of respondents in MADA has secondary levels. Only few of them have further studied in certificate, diploma and degrees. Occupation is as follows, More than half of respondents (76.7 percent) are full time farmers and (32.3) percent are part time farmers. Table (2) shows the years of experience of respondents ranged from 8 to above 20 years and the table shows majority of respondents have above 20 years' experience in agricultural. Then (20.0) percent of the respondents have (14-19 years) experience in agriculture. Average number of family size of farmers was 6-9 people. follow by (21.2) percent of respondents have a small family (2-5 person). As for length of functional service 32.4% have (15-19 years) in functional service as rural leader, and the remaining 16.7% of the respondents have (above 20 years) of functional service as a rural leader. For the yield of paddy table shows 25.4% of the respondents have (3-5 tons) of the yield of paddy and 20.8% of respondents have (6-8 tons) yield of paddy but only 15.8% of the respondents have (above 12 tons) yield of paddy.

**For the Perception toward the Knowledge of Respondents on Paddy Farming Technologies:** Table (3) shows the level of the knowledge of respondents on paddy farming technologies, is shown the item with the

**Table 1.** Profile of the Respondents

Characteristics	n (260)	Percentage
Age	Frequency	Percent
31-36 years	66	25.4
37-42 years	53	20.4
43-48 years	67	25.8
49-54 years	51	19.6
Above 55 years	23	8.8
Religion	Frequency	Percent
Islam	133	51.2
Christian	44	16.9
Hindu	16	6.2
Buddha	67	25.8
Level of education	Frequency	Percent
no education	29	11.2
primary level	62	23.8
secondary level	79	30.4
foundation	35	13.5
diploma	14	5.4
degree	41	15.8
Occupation	Frequency	Percent
Full time farmers	176	67.7
Part time farmers	84	32.3
Years of Experience in paddy farming	Frequency	Percent
8-13 years	71	27.3
14-19 years	52	20.0
Above 20 years	137	52.7
Family size	Frequency	Percent
2-5 person	55	21.2
6-9 person	139	53.5
Above 10 people	66	25.4
Length of functional service as a rural leader	Frequency	Percent
5-9 years	61	23.3
10-14 years	70	26.6
15-19 years	85	32.4
above 20 years	44	16.7
Yield of paddy	Frequency	Percent
Below 2 tons	55	21.2
3-5 tons	66	25.4
6-8 tons	54	20.8
9-11 tons	44	16.9
Above 12 tons	41	15.8

highest mean (4.12) is “you know how to differentiate the strengths and weaknesses of seeds”. this means that rural leaders have the ability to choose good seeds of paddy to use in farming this result agree with study<sup>19</sup>. The results also report the statement with least mean (3.36) is “you know how removing and burning paddy straw around the farm”. This means that the respondents have little

knowledge of how removing and burning paddy straw around the farm.

From Table (4) we can see the overall mean for the level of knowledge of respondents of paddy farming technologies is (3.81), reveals that nearly more than quarter of the respondents (38%) have high level of knowledge of paddy farming technologies. It can be noted that 57%

**Table 2.** Perception toward the Knowledge of Respondents on Paddy Farming Technologies

Statements of knowledge	Frequency/(%)					Mean	SD
	1	2	3	4	5		
You know how to differentiate the strengths and weaknesses of seeds	3.4	4.6	31.6	33.1	26.2	4.12	0.728
You can controlling field water to find whether it is polluted with weed seeds	5.7	7.6	15.6	44.9	25.1	4.09	0.729
You know how to weeding and eliminating weeds	4.9	9.5	27.0	35.0	22.4	4.08	0.709
You know the purpose and objective for machineries for paddy	4.9	10.6	11.8	43.0	28.5	4.05	0.695
You know the fact and theories about sri	3.8	9.9	12.9	43.7	28.5	4.04	0.704
You know how to use it in recording farm Record	5.3	9.5	14.1	39.9	30.0	3.94	0.73
You know how to setting the appropriate water depth	4.6	9.5	19.4	38.8	26.6	3.90	0.816
You have knowledge about farming alternation in order to control rice weeds	5.7	11.4	25.1	31.2	25.5	3.86	0.908
You have knowledge about Ipm	4.6	6.8	18.3	38.8	30.4	3.85	1.08
You know about the legal of MR256	2.7	10.6	20.2	36.9	28.5	3.84	1.07
You know about the cultural and social issues related to CLXX	5.7	9.9	24.0	35.4	24.0	3.81	1.13
You know how to use the machineries of paddy	4.9	9.9	36.5	24.0	23.6	3.80	1.12
You have various ways and strategies of developing their understanding of use MR256	0.8	1.1	14.4	59.3	23.2	3.79	1.06
You know about different type of IPM	0.4	4.2	15.2	60.5	18.6	3.77	1.09
You controlling weeds by integrated rice cultivate and duck-culture	0.8	1.9	11.0	62.7	22.4	3.77	0.99
You know how to solve the problem of tractor when you do land preparation	0.8	1.5	11.8	59.3	25.5	3.75	1.01
You know how to assess farmers performance about use transplanting machine	0.8	1.9	10.6	57.0	28.5	3.74	1.09
You have sufficient knowledge about structure of knowledge of rice check manual	0.8	6.1	25.9	39.9	26.2	3.63	1.12
You have had sufficient opportunities to work with different technology in paddy farming	0.4	4.2	23.2	47.9	23.2	3.61	1.09
You know how to assess farmers learning in Multiple ways about tract	2.3	11.4	41.1	36.5	7.6	3.60	1.15
You know the concept and procedure within harvesting	0.4	2.7	11.8	56.7	27.4	3.52	1.12
You know how removing and burning paddy straw around the farm	1.9	6.5	24.7	45.6	20.2	3.36	0.87
<b>Total average means</b>						<b>3.81</b>	<b>0.95</b>



have moderate level of knowledge of paddy farming technologies and only 5% of the respondents still have low knowledge toward paddy farming technologies. This results do not agree with study of [19], because the respondents were at a high level pertaining to their knowledge on sustainable agriculture.

**Table 3.** Level of knowledge of respondents on Paddy Farming Technologies (n=260)

Level	Frequency	Percentage	Mean	SD
High (3.67-5.0)	98	38	3.81	0.95
Moderate (2.34-3.66)	149	57		
Low (1-2.33)	13	5		
<b>Total</b>	<b>260</b>	<b>100.0</b>		

#### Relationship between Socio Demographic and knowledge Perception Level of respondents in paddy farming technologies

Table (5) shows chi square analysis result by relationship between socio demographic and knowledge level of respondents of paddy farming technology. Table (4) shows relationship between socio demographic with the level of Knowledge From previous results, the highest percentage of level of knowledge is 57 % out of 260 Of the respondents which meant they have Moderate level of knowledge. The high level is 38 % and for low level is 5%.

Table 5 indicates that, religion, occupation, length of functional service as a (rural leader), family size, have no significant relationship with the knowledge level of respondents of paddy farming technology. Only three variables are showing significant relationship between socio demographic and knowledge perception level of the respondents. The results shows age relate with knowledge level because whenever a rural leader has a big age that mean has a good experience and knowledge about paddy farming technology. This result agree with<sup>20</sup>.

The variable education level may relate with knowledge level because education has educate them to aware about succession for knowledge of paddy farming technologies. This result do not agree with study of<sup>20</sup>.

And the results show also years of experience in paddy farming relate with knowledge level because years of experience made them able to used paddy farming technology. All other variables with knowledge perception level are no significant relationship. This meant the relationship is failed to reject Ho. Maybe successor perception level is naturally.

**Table 4.** Relationship between Socio Demographic and Knowledge Perception Level (n=260)

Variables	Chi-square ( $X^2_{0.05}$ )	Df	Significance	Decision
Age	16.390a	8	0.037	Reject $H_0$
Religion	7.995a	6	0.238	Fail to Reject $H_0$
level of education	20.066a	10	0.029	Reject $H_0$
Occupation	1.200a	2	0.549	Fail to Reject $H_0$
years of experience in paddy farming	11.251a	4	0.024	Reject $H_0$
family size	4.664a	4	0.324	Fail to Reject $H_0$
Length of Functional service as a (Rural Leader)	2.362a	6	0.884	Fail to Reject $H_0$
Yield of paddy	14.482a	8	0.070	Fail to Reject $H_0$

## 6. Conclusion

Based on the gained results, it is evident that despite the respondents in Malaysia in study area respondents are having moderate knowledge regarding agriculture technologies on paddy farming, there is still much that need to be done to further enhance their level of knowledge especially with regards to eradication of pests, removing and burning paddy straw around the farm and the concept and procedure within harvesting, and proper usage of machinery. It is believed that such impartation of knowledge can only be materialized if there is enough support from every stakeholder-right from the policy makers to the respondents .Thus, it is recommended that all relevant parties will play their roles accordingly so that the objective of each farmer implementing good agricultural practices will be materialized so that our future generations will have good knowledge on paddy farming technologies to have the best paddy.

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