ATTITUDE AND KNOWLEDGE OF MALAYSIAN VEGETABLE FARMERS ON MALAYSIAN CERTIFICATION SCHEME OF GOOD AGRICULTURAL PRACTICES (MyGAP)

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Abstract - Quality and safe fresh produce especially vegetables is becoming a global priority. Consumers tend to demand for high quality vegetables as their health concern rises. The government of Malaysia introduced Malaysian certification scheme for Good Agricultural Practices (MyGAP) as one of the strategy not only to increasing quality, safety and environmental-friendly product but also to satisfy the preference and demand of consumers. Although the government has provided a lot of extensions, training and non-mandatory process towards applying MyGAP, the uptake among Malaysian vegetable farmers is still low and slow. In order to address the knowledge gap, there is a need to conduct this study which is to determine the significant differences of attitude and knowledge between vegetable farmers with MyGAP and those without MyGAP. Respondents for this study were interviewed via survey questionnaires. Descriptive analysis and independent samples t-test was conducted and the result presented that both groups of vegetable farmers were significantly different in terms of their attitude and knowledge. Vegetable farmers with MyGAP tend to imply higher attitude and knowledge compare to farmers without MyGAP. Government and policy makers should pay more attention on farmers without MyGAP in motivating them to endorse their farm products with MyGAP.

Keywords - Attitude, Knowledge, Vegetable farmers, MyGAP, Independent Samples *t*-test.

I. INTRODUCTION

Over 64% of consumers today agree that it is important to eat healthy and pay attention to nutrition (Simmons, 2013). Vegetables are known as a preventer for many diseases and deficiencies such as birth defects, physical retardation, weaken immune systems, and so on (FAO, 2003). In Malaysia, the consumption of vegetables among consumers has increased from 147.3 per capita in 2009 to 150.9 per capita in 2013 (DOA, 2012). At the same time, the cultivation of safe vegetables has also gained attention (The World Vegetable Center, 2104) and so as the demand for safe vegetables in Malaysia (Tey *et al.*, 2009). According to Ares *et al.* (2011), the existing issues of food safety are the establishment of consuming hygienic food and the use of pesticides and residues in their food. One way to ensure that a vegetable product is safe and high in quality is by checking the quality-label on vegetables packaging (Golnaz *et al.*, 2014). To address this, the government has introduced good agricultural practices (GAP) to farmers. Implementing good agricultural practices (GAP) is the best way to protect customers, improve business and the produce from the industry as a whole (Coleman and Maynard, 2014). In August 2013, Ministry of Agriculture Malaysia (MOA) has launched a certification scheme called Malaysian certification scheme for Good Agricultural Practices (MyGAP) to recognize farms that practice GAP (MOA, 2015). For the crop sector, MyGAP was rebranded from Malaysian Good Farm Practice Scheme (SALM) which was launched earlier in 2002 by the Department of Agriculture Malaysia (DOA) (DOA, 2015). MyGAP is a voluntary scheme, where interested farms can register and undergo a series of steps before the farm can be accredited. Furthermore, this scheme is needed because of the challenges the country faced when the World Trade Organization (WTO) started to implement the concept of free trade worldwide (WTO, 2010). Also, the government has tried their best in attracting farmers by providing them with free courses and training. However, the number of farmers who practice MyGAP is relatively small. Currently, the number of farms with MyGAP certification for the crop sector is still low at 674 farms nationwide, that is, only 0.2% of the total acreage of vegetable farm land in Malaysia (DOA, June 2014). However, as the certification is not mandatory where it is provided for free and does not incur cost to comply with, the uptake among Malaysian farmers is still slow (TheStarOnline, 2013). Therefore, this study is aim to assess the significant differences of the attitude and knowledge between vegetable farmers with MyGAP and without MyGAP.

II. METHODOLOGY

This was a group comparison study among vegetable farmers with MyGAP and vegetable farmers without MyGAP in Peninsular Malaysia. Face to face interview was conducted among the respondents via self-administrated questionnaire between January 2015 and May 2015. Respondents were eligible to be part of this study if they are vegetable farmers and have knowledge on GAP certification scheme in Malaysia.

2.1. Survey Questionnaire

In order to achieve the objectives of this study, two types of slightly similar structured questionnaires were designed for both groups of respondents namely, vegetable farmers with MyGAP and vegetable farmers without MyGAP. The questionnaire was developed and modified from literature reviews. The questionnaires were also structured using nominal scale (open-ended and close-ended questions) to measure the demographic profile and interval scale (7-point Likert scale) to assess the attitude and knowledge of respondents. For example, to measure respondents' attitude, each item (e.g., "To me, having MyGAP certified in my farm is...") were measured using a seven-point semantic differential scale (e.g, easy/difficult, cheap/costly and beneficial/not beneficial). As for their knowledge, the respondents were asked to rate a seven-point Liker scale statements by writing the appropriate number that best describe their opinion which is from 'strongly disagree', 'disagree', 'slightly disagree', 'neither agree or disagree', 'slightly agree', 'agree' and 'strongly agree'. In the next step, the outcome of the questionnaire modified into rank-order statements and questions. The final questionnaire consisted 2 separate domains; firstly farmers' attitude of MyGAP followed by farmers' knowledge of MYGAP.

2.2. Statistical Analysis

Analyses were accomplished by using Software Package for Statistical Analysis (SPSS) version 20. Descriptive analysis was performed to discover the socio-demographic background of the respondents while independent samples t-test was used to explore whether respondents with MyGAP and without MyGAP differ significantly in terms of their attitude and knowledge. On the other hand, Cronbach's alpha was used to measure the coefficient reliability consistency. Based on the literature review, below hypothesis were proposed:

$\boldsymbol{H_{0_1}}$: There is no significant difference in the mean scores of attitude for farmers with MyGAP and farmers without MyGAP

$\boldsymbol{H_{0_2}}$: There is no significant difference in the mean scores of knowledge for farmers with MyGAP and farmers without MyGAP

III. RESULTS AND DISCUSSION

3.1. Demographic Profile of Respondents

A total of n = 263 respondents undertook the questionnaire. Demographic characteristics are presented in Table 1. All continuous variables were presented as mean (SD) with categorical data presented as frequencies or percentage. Referring to the table, majority of the respondents were male (n = 204, 77.6%) and had farming experience for over 10 years (n= 166, 63.1%). Along with that, most of the respondents employed less than 4 laborers in their farms (n = 212, 80.6%). Based on Gurrieri *et al.*, farmers above the age of 41 years are considered "old" and those under 40 years of age are "young". In this study, more "young farmers" respondents were without MyGAP (n = 52, 36.7%) compare to respondents with MyGAP (n = 23, 19.2%). Moreover, most of the farmers were secondary educated (n = 89, 33.8%) and when they were asked about how they were informed about GAP certification scheme (either SALM or MyGAP), majority said the government (n = 143, 54.4%) were the one who acquaint them about it.

Table 1. Respondents' Characteristics

	With MyGAP (n=120)	Without MyGAP (n=143)	All (n=263)
Age (years)	51.52 (1.084)	48.21 (1.048)	49.72 (0.760)
Farming Experience (years)	16.01 (1.496)	13.61 (0.957)	14.70 (0.860)
Number of labors	3.13 (0.369)	3.39 (0.402)	3.27 (0.276)
Gender			
Male	97 (80.8%)	107 (74.8%)	204 (77.6%)
Female	23 (19.2%)	36 (25.2%)	59 (22.4%)
Educational Level			
Non-formal	2 (1.7%)	28 (19.6%)	30 (11.4%)
Primary	43 (35.8%)	30 (21.0%)	73 (27.8%)
Secondary	42 (35.0%)	47 (32.9%)	89 (33.8%)
STPM/Diploma	8 (6.7%)	23 (16.1%)	31 (11.8%)
Bachelor's Degree	21 (17.5%)	15 (10.5%)	36 (13.7%)
Others	4 (3.3%)	0	4 (1.5%)
Sources			
Carnival	2 (1.7%)	17 (11.9%)	19 (7.2%)
Newspaper	16 (13.3%)	31 (21.7%)	47 (17.9%)
Internet	19 (15.8%)	17 (11.9%)	36 (13.7%)
Supermarket	10 (8.3%)	7 (4.9%)	17 (6.5%)
Friends and Family	19 (15.8)	88 (61.5%)	107 (40.7%)
Television	10 (8.3%)	25 (17.5%)	35 (13.3%)
Government	102 (85.0%)	41 (28.7%)	143 (54.4%)

3.2. Reliability Analysis of Attitude and Knowledge of Respondents

In order to verify the internal reliability of the items studied, Cronbach's Alpha was used and the minimum alpha value used to indicate a sufficient research is 0.7 (Hair et al, 2010). In this study, Cronbach's Alpha of attitude and knowledge of respondents towards MyGAP is 0.927 which is more than 0.7, which means that these items have adequate internal reliability consistency.

3.3. Significant Differences between Respondents' Attitude and Knowledge

An independent sample t-test was performed to measure the differences between farmers with MyGAP and farmers without MyGAP with regards to their attitude and knowledge towards MyGAP (shown in Table 2).

Table 2. Independent samples t-test of attitude and knowledge between respondents with MyGAP and without MyGAP.

Variable	*N*	Mean	SD	t	p
Attitude				-17.743	0.000
Farmers with MyGAP	*120*	6.114	0.474		
Farmers without MyGAP	*143*	4.252	1.143		
Knowledge				-13.854	0.000
Farmers with MyGAP	*120*	5.946	0.490		
Farmers witout MyGAP	*143*	4.610	1.021		

Significant attitude differences (t = -17.743, p<0.01) were observed with MyGAP farmers having a greater attitude (M = 6.1139, SD = 0.47431) than non-MyGAP farmers (M = 4.2517, SD = 1.14322). The results also indicated that the knowledge of farmers with MyGAP was significantly different than the knowledge of farmers without MyGAP (t = -13.854, p<0.01), where MyGAP farmers has stronger knowledge (M = 5.9458, SD = 0.49012) compare to non-MyGAP farmers (M = 4.6101, SD = 1.02128). Therefore the null hypothesis was rejected. The finding shows that farmers with MyGAP seem to have higher attitude and knowledge towards MyGAP than farmers without MyGAP.

Results of this study suggest the attitude and knowledge of farmers whom certified with MyGAP and farmers whom are not certified with MyGAP are significantly different. For farmers without MyGAP, they seem to possess lower attitude than farmers that holds MyGAP. This is in line with the previous report that stated farmers (without MyGAP) are not interested in applying for MyGAP and it may be due to the changes that the farmers are required to make in the practice (TheStarOnine, 2013).

The concept of GAP is the application knowledge to the utilization of the natural resource base in a sustainable way for the production of safe, healthy food and non-food agricultural products (Rejesus, 2009). In contrast with this study, the knowledge of farmers without MyGAP is relatively low. Most of their knowledge is based on the principals of "seeing is believing' and knowledge is 'learn by doing'. Farmers learn by carrying out for themselves the various activities related to the particular farming practice they want to study and learn about it (Hansra, et al. 2005). In other words, farmers without MyGAP were not likely to have more attitudes in MyGAP unless they had seen other farmers that have MyGAP who succeed in business.

CONCLUSIONS

The main objective of this study was to identify whether there are any significant differences of attitude and knowledge between vegetable farmers with MyGAP and without MyGAP. In order to achieve the objective, independent samples t-test was conducted and it was indicated that there is a significant difference in the attitude and knowledge between both groups mentioned as vegetable farmers with MyGAP develop higher attitude as well as knowledge compare to farmers without MyGAP. Hence, the policy makers and government should target farmers without MyGAP by attracting, encouraging, providing support as well as educating them on GAP in order to motivate them in endorsing this certification scheme.

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