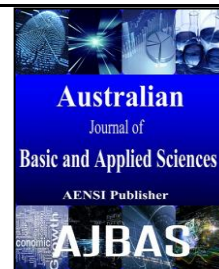




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Vegetable Farmers and Malaysian Certification Scheme of Good Agricultural Practices (MyGAP): Opinions and Barriers

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ABSTRACT

Background: The demand for quality, safety and environmental-friendly fresh produce, especially vegetables, is growing among Malaysian consumers. In response to this, the government has introduced Malaysian certification scheme for Good Agricultural Practices (MyGAP) to farmers in the perks of encouraging them to practice good agricultural practices in their farms. Although the government has provided a lot of extensions, training and complimentary process for MyGAP application, the uptake among Malaysian vegetable farmers is still low and slow. **Objective:** This study is therefore conducted to explore the latent factors that influence the vegetable farmers' failure to apply MyGAP. This group of farmers play an essential role in shaping the rising trend in producing high quality vegetables in Malaysia. **Results:** Descriptive analysis and factor analysis were used in this study and the factors that were extracted from the factor solution were barriers, underlying values, personal norms, knowledge and affirming attitude. **Conclusion:** These latent factors mentioned play a relatively high importance in determining the vegetable farmer's opinion and barriers in endorsing MyGAP.

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INTRODUCTION

Fresh food produce, especially vegetables, are increasing in demand to meet the needs and preferences of consumers. In Malaysia, consumers are getting more concern and becoming more aware about the food that they partake. The Department of Statistic (2012) reported that the consumption of vegetables among Malaysian consumers has increased from 147.3kg per capita in 2009 to 150.9 kg per capita in 2013. Under the Economic Transformation Program (ETP), the Premium Fruits and Vegetables of the National Key Economic Areas (NKEA) has been aiming to export local premium vegetables to other countries that import 50 percent of global production of higher quality local vegetables that comply with food safety standards, like the Middle East and Europe (PEMANDU, 2013). In other words, Malaysian vegetable have to achieve global food safety standards in order to compete internationally.

One of the government's strategies to increase agricultural productivity of quality and safe food that can easily be recognised worldwide is through introducing good agricultural practices (GAP). GAP

has long been recognised among the crop farmers since Malaysian Good Farm Practice Scheme (SALM) was introduced by the Department of Agriculture (DOA) in 2002. However, the acknowledgement of GAP has recently rebranded to Malaysian Certification Scheme for Good Agricultural Practice (MyGAP) in 2013 in order to extend its recognition to farms that practice GAP following an environmental-friendly concept, taking into account the welfare and safety of the workers as well to produce quality and safe vegetable suitable for consumption (MOA, 2015).

MyGAP is a voluntary scheme, where interested farms can register and undergo a series of steps before the farm can be accredited. The rebranded MyGAP is a combination of the crop sector, aquaculture sector and livestock sector (DOA, 2015). Agricultural produce which are certified with this scheme is very significant in market entry especially to the international market due to the confirmation of it compliance with food safety procedures.

Despite the advantages that MyGAP provide and the substantial encouragement from the government, reports claimed that only 5% of the total vegetable farmers in Malaysia are certified with MyGAP which

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accounts only 2% of total acreage of vegetable-farm land nationwide (TheStarOnline, 2013). If there are no effective action taken, Malaysia's goal in being a country that consistently produce safe and quality food may be far away from achievement.

Objective:

The uptake among Malaysian farmers in the MyGAP scheme is still at the ground-level. It is said that this may be due to the changes that the farmers are required to make in their practice, especially the paperwork (TheStarOnline, 2013). Therefore, this study aims to explain the socio-demographic background of vegetable farmers without MyGAP. Moreover, it also emphasizes on exploring the latent factors that influence the opinions and barriers of vegetable farmers without MyGAP towards the certification scheme itself.

Methodology:

A survey was conducted among the vegetable farmers in Peninsular Malaysia without MyGAP certification to gather information on respondent's attitude towards MyGAP. Cluster and systematic random sampling has been applied and a total of 143 respondents were selected where face to face

interview was conducted via structured questionnaire.

The questions on respondents' attitude, assigned values (individually assigned values), underlying values (general priority in life), perceived barriers, personal norms and knowledge were structured using seven point Likert scale. Descriptive analysis was undertaken to discover the socio-demographic background of the respondents while factor analysis was used to explore the different dimension of vegetable farmers' opinion in adopting MyGAP and Cronbach's alpha was used to measure the coefficient reliability consistency.

RESULTS AND DISCUSSION

This study was set out to explore the factors which explain the dimension of farmers' opinion towards adopting MyGAP. The Cronbach's alpha value for underlying values, assigned values, knowledge and experience, personal norms and attitude statements was 0.982, and this shows that there is consistency among the proposed model's construct. Therefore, the proposed model is fit for this study and for factor analysis to be run.

Table 1: Demographic characteristics of respondents

Characteristic	Percentage	Characteristic	Percentage
Gender		Age	
Male	87.5	Below 40 years old	36.7
Female	12.5	Above 41 years old	63.3
Race		Estimated Income (per year)	
Malay	74.2	Below RM20,000	39.2
Chinese	15.0	RM20,001 – RM40,000	37.5
Indian	3.3	RM40,001 and above	23.3
Others	7.5		
		Education Level	
Experience in Farming		Non-formal Education	15.8
Below 9 years	49.9	Primary Education	22.5
10 years and above	50.1	Secondary Education	32.5
		STPM/ Diploma	17.5
		Bachelor's Degree	11.7

Respondents' Demographic Background:

Table 1 shows the results of the respondents' characteristic while Table 2 indicates the farmers' MyGAP application status. By using descriptive analysis, most of the respondents were found to be male with 87.5% while female respondents were 12.5%. Meanwhile, 91 respondents (63.3%) were aged above 41 year old and based on Gurrieri *et al.*, farmers above the age of 41 years are considered "old" and those under 40 years of age are "young". The education level was categorized into five levels which were non-formal education (15.8%), primary

education (22.5%), secondary education (32.5%), STPM/Diploma (17.5%), and bachelor's degree (11.7%). Furthermore, there were approximately half of them (50.1%) with over 10years farming experience. The study also found out that 39.2% of the respondents earned below RM20, 000 per year.

Based on Table 2, most of them are currently not applying for MyGAP (83.3%) and only 16.7% of them are currently applying for it. Likewise, the result also shows that 55.5% of them intended to apply MyGAP in the future.

Table 2: Farmers and MyGAP application status.

Statement	Frequency	Percentage
Are you currently applying for MyGAP?		
Yes	24	16.7
No	119	83.3
Are you intended to apply MyGAP in the future?		
Yes	79	55.5
No	64	44.5

Dimensions of vegetable farmers' opinion towards MyGAP:

Factor analysis was found to be appropriate for this study as the result of Kaiser-Meyer-Olkin (KMO) test of sampling adequacy reaches the value of at least 0.906 and indicates significant value of Bartlett's Test of Sphericity. Out of 66 statements, there were only 23 statements that influence the

vegetable farmers' attitude concerning MyGAP. The five latent factors which account for about 76.243% of the total variance, are summarized in Table 3. These factors were extracted from the factor solution and assumed that Malaysian vegetable farmers without MyGAP certification place a relatively high level of importance on the perceived barriers, underlying values, knowledge and affirming attitude.

Table 3: Summary of Factor Analysis Results

Items	Factor Loading				
	F1	F2	F3	F4	F5
<i>Perceived Barriers</i>					
To me, MyGAP is a very complicating process	0.821				
I believe that being committed to MyGAP requires many labors	0.820				
To me, MyGAP brings a lot of paper works	0.792				
In my opinion, MyGAP has too many conditions to follow	0.756				
To me, a farm with MyGAP and without MyGAP doesn't give much difference	0.740				
Since I don't export any product, applying MyGAP is not necessary.	0.739				
I think that MyGAP endorsement is very costly	0.714				
MyGAP process is time consuming and waste my resources.	0.697				
Percentage of Variance	51.498				
<i>Underlying Values</i>					
Having MyGAP can reduce pollution of the environment		0.820			
Obtaining MyGAP is important to protect Malaysian ecosystem		0.744			
MyGAP assures the safety and welfare of farm workers		0.735			
MyGAP certified product is easily recognizable in the domestic market		0.717			
Percentage of Variance		8.546			
<i>Personal Norms</i>					
I am satisfied with my farm even without MyGAP endorsement			0.753		
I am confident with my product even though they are not endorsed by MyGAP			0.703		
I believe that my farm is in a stable condition financially			0.685		
I have a transparent production process which can build trust for my consumer			0.681		
I am morally obligated with what I do in my farm			0.582		
Percentage of Variance			6.197		
<i>Knowledge</i>					
I think I am well informed about MyGAP				0.807	
I know that MyGAP is in line with ASEAN GAP				0.752	
Basic knowledge about GAP helps me a lot in managing my farm				0.683	
Percentage of Variance				5.310	
<i>Affirming Attitude</i>					
To me, MyGAP certification is very beneficial					0.806
To me, MyGAP can ensure the safety of my farm					0.792
To me, endorsed with MyGAP will keep my farm well managed					0.737
Percentage of Variance					4.692
Total Percentage of Variance					76.243

Perceived Barriers:

This factor consists of eight sub variables which are: "To me, MyGAP is a very complicating process" (0.821), "I believe that being committed to MyGAP requires many labors" (0.820), "To me, MyGAP brings a lot of paperwork" (0.792), "In my opinion, MyGAP has too many conditions to follow" (0.756),

"To me, a farm with MyGAP and without MyGAP doesn't give much difference" (0.740), "Since I don't export any product, applying MyGAP is not necessary" (0.739), "I think that MyGAP endorsement is very costly" (0.714) and "MyGAP process is time consuming and waste of resources"

(0.697). These sub variables accounted 51.498% of the total variance.

Undelying Values:

In this factor, there are four sub variables that accounted 8.546% of the total variance. These sub variables are: "Having MyGAP can reduce pollution of the environment" (0.820), "Obtaining MyGAP is important to protect Malaysian ecosystem" (0.744), "MyGAP assures the safety and welfare of farm workers" (0.735) and "MyGAP certified product is easily recognizable in the domestic market" (0.717).

Personal Norms:

There are five sub variables in this factor. These sub variables are: "I am satisfies with my farm even without MyGAP endorsement" (0.753), "I am confident with my product even though they are not endorsed by MyGAP" (0.703), "I belief that my farm is in a stable condition financially" (0.685), "I have a transparent production process which can build trust for my consumer" (0.681), "I am morally obligated with what I do in my farm" (0.582) and has a total variance of 6.197%.

Knowledge:

Three sub variables are consisted in this factor: "I think I am well informed about MyGAP" (0.807), "I know that MyGAP is in line with ASEAN GAP" (0.752) and "Basic knowledge about GAP helps me a lot in managing my farm" (0.683). The total variance accounted for this factor is 5.310%.

Affirming Attitude:

With a total variance of 4.692%, this factor comprises three amount of sub variables which are "To me, MyGAP certification is very beneficial" (0.806), "To me, MyGAP can ensure the safety of my farm" (0.792) and "To me, endorsed with MyGAP will keep my farm well managed" (0.737).

Therefore, the results revealed that the opinion of vegetable farmers without MyGAP towards the certification itself is greatly being shaped by having perceived barriers, underlying values, personal norms, knowledge and affirming attitude.

Discussion And Conclusion:

Farmers are able to help us in improving the quality of the vegetables we eat and at the same time, assuring consumers' safety and confidence. A particular approach to make this happen is when farmers practicing good agricultural practices (GAP). Farmers in Malaysia can acknowledge this practice by endorsing their product with MyGAP. However, this study shows that one of the main factors which are important in influencing their opinion towards endorsing MyGAP is the perceived barriers. Some of these barriers included are supported by Sierra *et al.* (2008) and Strohlic and Sierra (2007). The authors found out that the multiple barriers on related

certification are including the transition period, the financial and the paperwork. Moreover, this study also identified that underlying values of MyGAP are also important in shaping the opinion of farmers without MyGAP endorsement. Underlying value is a general guiding principle of a valued behavior (Seymour *et al.*, 2010). Based on (Defra, 2009), practicing GAP is essential to the farm, however, it is not a manual to farmers on how to manage their farm but it helps them to select the appropriate actions for their individual situation like delivering a good standard of environmental protection. Moreover, this study also proves that personal norms are included in one of the important factor in molding the opinion of non-MyGAP farmers. This is supported by a study of Olbrich *et al.* (2011) where individual farmers is said to have personal norms of sustainability that are heterogeneous across individuals. Furthermore, this study also found out that knowledge seems to be contributed in shaping the opinion of vegetable farmers as well. Waarts (2012) mentioned that increased knowledge will lead farmers to implementing good agricultural practices.

To move forward, policy makers should consider providing more support and encouragement to the farmers in order to decrease the barriers that keep the farmers from endorsing MyGAP. Marketing, promoting and spreading knowledge about MyGAP's benefits can also create awareness among vegetable farmers and indirectly contribute in improving the quality of vegetables consumed. Similarly, consumers need to be informed and educated about the importance of MyGAP so as to put more pressure on farmers to practice and adopt MyGAP.

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