

SOCIO-ECONOMIC FACTORS IN RELATION TO SMALL RUMINANT FARMING' POTENTIAL IN MALAYSIA: RANCHERS' PERSPECTIVE

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ABSTRACT

Small ruminant (goat and sheep) farming plays a significant role in economic development and improves the livelihood of ranchers. The contribution of the small ruminant industry to the agriculture productivity is becoming more substantial and significant. Hence, a study was conducted to observe the socio-economic characteristics of ranchers and production system of small ruminants. In addition, the relationship between socio-economic characteristics and the potential for small ruminant farming were determined. A total of six hundred (600) ranchers randomly selected from the eleven states of Malaysia to examine the socio-economic and farm profile of small ruminants. The survey was done by face to face interview through questionnaire. Simple percentages and frequency distribution tables were used to characterize and classify the data using the statistical package for social sciences (SPSS Version 21). The results showed that the highest number of respondents was involved between the ages of 40 to 50 years (23.5%), 92.8% were male and 7.2 % female. The married (86.7%) respondents and holding two family members were dominated in this industry. The majority of the ranchers were educated with less than five years of experience (36%), while a few (1.2 %) were illiterate in this farming. However, a significant (67.7%) of the respondents were keeping this industry as a part time job. Mostly land size of farms was less than 5 acres and dominated by owners' farms (75.6%). Chi-square analysis showed positive significant relationship to variables with the number of animals and experiences except, age, gender, material status and part time job. Hence, small ruminant farming needs great intension by the government to develop appropriate policies for this industry. Moreover, government sector should encourage the participation of youth and women ranchers to participate and attract them by giving some subsidies like as poultry and oil palm industries.

Key words: Farming, Goat, Livestock, Rancher, Sheep

Introduction

The agricultural sector is an important sector in the economy and it encompasses all agricultural activities particularly in Malaysia. This sector includes plantation crops, food crops, fisheries, livestock and forestry. In Malaysia, plantation crops gather high income mainly rubber, oil palm and cocoa. However, food crop, fisheries and livestock industry also remain important in term of food consumption for Malaysian. It is characterized by both small and large-scale production units, which produce output for domestic consumption and export (NAP3, 2010). The strategic importance of the agricultural sector in overall economic development of a country extends to being a major source of food supply, export earnings, capital formation and linkages with other sectors. Most significantly, agricultural sector serves as a source of employment. Particularly, it has major contribution to rural development and apparent in terms of improvement in income of rural households that subsequently, improves their quality of life. It can be concluded that the agricultural sector is an important sector of every economy.

Livestock industries play a vital role in economic development and play a major role in the life of farmers in developing Asian countries. In the Malaysian economy, livestock industry also plays a vital role especially for value-added and employment. The livestock industry consists of the production of cattle-beef, dairy cattle, buffalo, mutton, poultry meat, eggs, pork, and milk as diet. According to Department of Veterinary Services (DVS, 2014) statistical data, the gross output value of livestock in Malaysia has been increasing year by year. However, livestock constituted an important contributor at 6.1% rate due to a greater demand for the consumption of domestic poultry. The agriculture sector can be categorized as highly commercialized among the

ruminants industries. These industries have been proved with a stable progress since many years mainly recognized to the dynamic involvement of the private predominantly in the other sub-sectors. The pig and poultry sub-sectors have been comparatively capable of improving from lower to the higher levels with a modern commercialization and high efficiency performance within a limited time period.

The ruminant industries still lag far behind with the majority of cattle, small ruminant still owned by individual farmers. A total of 53.78% ranchers have poultry (chicken and duck) farming, followed by cattle ranchers 27.18%, while small ruminant ranchers were 16.01% with only 0.56% ranchers that rear pig. Furthermore, an insufficient entrepreneur rearing deer, ostriches and are commonly related to leisure industrial activities (MOA, 2011). Among the livestock, small ruminant is the fourth major livestock after swine, chicken and cattle. The contribution of the Malaysian small ruminant industry to the Malaysia agriculture output growth is becoming more important and significant. Small ruminant has a very strong niche market to supply the Muslim ritual slaughter requirements for the majority Muslim population. In addition, Indian have same demand but with different ritual.

Generally, in Malaysia small ruminants are kept in rural villages, in the cultivation of rubber, palm oil, fruit orchards, rice fields and vacant land. Most small ranchers keep livestock for different purposes which are meat, milk and organic fertilizer. Small ruminant farming is not limited only economically, but these animals are important in terms of socio-agriculture, as it has long been observed by rancher (Devendra, 1982). Ranchers in Malaysia are categorized into four groups such as breeder, cross-breeder, traders and importer. The farming of small ruminants occurs on a small scale basis with a few enterprises trying to participate on a commercial basis. Several breeds of small ruminants are being reared at various places in Malaysia such as, Boer, Dopper, Jamnapari, Katjang, Saenan and Anglo Nubian. Besides these, more hybrids from different breed come without proper breeding program. It appears that ranchers do not get much knowledge about small ruminant breeding. Boer, Dopper and Ktjang are usually reared for meat consumption, while Anglo Nubian, Jamnapari and Saenan are for milk. Boer and Dopper are highly demanded in the market because of their high quality meat (Sithambaram and Hassan, 2014).

The potential for increasing productivity of small ruminants in lesser developed countries (LDCs) is well documented. To realize this potential, however, will require that traditional rancher's place more emphasis. Problem facing in small ruminant farming in Malaysia which is feed price, breed and stock, price of meat and live small ruminant, ranchers' skill and management and capital for rearing small ruminant. Local breeds less suitable for commercial scale or large-scale preserved to give a quick return. Lacks of food quality for local food ingredients and processing technology have not been known to support growth of import breeds. Although there is a suitable technology for breeding, but our government was not ready to adopt the technology at this time to improve the productivity of local breeds. Government more emphasis on commercial agriculture with crop plantations of rubber, oil palm and coconut, which has proved increase the national economy. Among the above factor influence the farming will be success or not. Some ranchers successful, while other rancher, given similar circumstances, are unsuccessful and experience a crisis situation. This study helps to address the research question which is what are the relationship between socio-economic characteristics and potential of small ruminant farming that are directly related with the small ruminant farming industry to help mitigate and solve the obstacles that affect the potential of small ruminant industry. The objectives have been set up for this study was to identify demographic profile of respondents and to determine the relationship between socio-economic characteristics and the potential of small ruminants farming.

Methodology

A total of six hundred (600) farmers randomly selected from ten states in Malaysia were surveyed to examine the socio-economic and production characteristics of small ruminant production in Malaysia. The parameters surveyed included sex, age, educational qualification, experience, occupational status and years start rearing. Others were scale farming, an important person, farm category and farm system. 600 respondents were available for interview. The study was carried out in selected state in Malaysia namely, Kelantan, Terengganu, Pahang Kedah, Perlis, Negeri Sembilan, Selangor and Johor. Data were collected through structured questionnaires administered to respondents through personal interviews. The questionnaires were designed to help obtain detailed information on the socio-economic characteristics of the respondents and production characteristics and parameters. Data generated were subjected to statistical analysis using descriptive statistics. Simple percentages and frequency distribution and chi-square analysis were used to characterize and classify the data using the Statistical Package for Social Sciences (SPSS Release 21).

Result And Discussion

Demographic Profile Result

In the present section, outcomes on the socio- economic status are presented. Socio-economic were presented which are age, gender, race, material status, education level, family involve in farm, experiences and year started. Table 1 show the distribution percentage of respondents which are involved in this program by age category were highest between the ages of 40 to 49 years i.e. a total of 144 (24.0%), followed by the age category 50 to 59 years with 132 people (22.0%). The next category of age of 30 to 39 years of 126 (21.0%), 20 to 29 years of 93 persons (15.5%), 60 to 69 years of 83 persons (13.8%), while the lowest recorded number of categories is the age category over 70 years were 18 (3.0%) and age categories of less than 19 years of 4 (0.7%).

From the study, out of the 600 respondents, 92.8% were male and 7.2% female. Relatively elderly men were more likely to be engaged in small ruminant farming and vice-versa (refer to Table 1). These statistics suggest the dairy goat multiplication programmer mainly targeted men. The number and percent of respondents by people involved in the rearing of the study showed

that the respondents were Malays in majority 549 respondents (91.5%), followed by Indian were 38 persons (6.3%) and Chinese 12 persons (2.0%). About 86.7% of the respondents were married, (14.8%) singles and a minority 1.5 % widowed.

The number and percentage of respondents by level of education showed that the respondents were not in school were 7 people (1.2%), while the number of respondents attended primary school were a total of 107 (17.8%). The highest number of the people were who has participated in this study have only secondary education level 353 (58.8%). The next levels of education respondent have were higher education which is 133 (22.2%). Majority of the respondents (99.3%) had received formal education (Table 1), which suggested that communication of technical knowledge on goat farming would be easy. However, those mostly involved in dairy goat farming were lowly educated (17.8%) and the illiterate (1.2%). Furthermore, their education level may have limited opportunities to other forms of employment. Early marriages or deliberate focus on educating males were possible factors influencing education beyond primary school.

In term of number and percentage of respondents who have family members involved in the goats and sheep farm, the findings show that respondents who have family members 1 to 2 members were involved in farm which is 407 respondents (67.8 %), while the family members involved in the rearing of goats and sheep by 3 to 4 members were 93 respondents (15.5 %), 5 to 6 people were 18 respondents (3.0 %), 7 to 8 people were 3 respondent (0.5 %), exceeding 9 of 2 (0.3 %) and no family members were involved in small ruminant were 77 respondents (12.8 %).

Table 1 shows the distribution of respondents by years of experience acquired in small ruminant farming. The findings indicate that most respondents had less than 5 years experiences of about 125 respondents (41.7 %), followed 73 respondents (24.3 %) has spent the past 6 to 9 years, 10 to 14 years have 51 respondents (17.0 %), 15 to 19 years experiences have 20 respondents (6.7 %), 20 to 24 years have 14 (4.7 %). Further, 13 respondents (4.3 %) had more than 30 years and found only 4 people only (1.3 %) has spent the past 25 to 29 years on small ruminant farming. Table 1 show the number and percent of respondents by their income from small ruminant. The findings indicate that most respondents getting income below RM30,000 are 396 respondents (66.0 %), while minority of respondent (13 respondents) getting income between RM90, 000 till RM120, 000.

Table 1: Demographics of the respondents who benefited from goats and sheep

Variables	Parameter	Frequency	(%)
Age	< 19 years	4	0.7
	20-29 years	93	15.5
	30-39 years	126	21.0
	40-49 years	144	24.0
	50-59 years	132	22.0
	60-69 years	83	13.8
	>70+ years	18	3.0
Gender	Male	557	92.8
	Female	43	7.2
Race	Malay	549	91.5
	Chinese	12	2.0
	India	38	6.3
Marital status	Single	89	14.8
	Married	502	86.7
	Widow/widower	9	1.5
Education level	None	7	1.2
	Primary	107	17.8
	Secondary	353	58.8
	Higher Education	133	22.2
Number of family involved	0	77	12.9
	1-2	407	67.8
	3-4	93	15.5
	5-6	18	3.0
	7-8	3	0.5
	≥ 9	2	0.3
Experiences	≤ 5	228	38.0

	6-9	129	21.5
	10-14	122	20.3
	15-19	46	7.7
	20-24	45	7.5
	25-29	8	1.3
	≥ 30	22	3.7
Income	Below 30, 000	396	66.0
	30,001-60,000	101	16.8
	60,001-90,000	39	6.5
	90,001-120,000	13	2.1
	Above 120,000	51	8.3

Farm profile

In the present section, outcomes on the socio-economic status are presented and discussed in terms of scale farming, important person, category, system, land holding, livestock holding, cost and income of farm. The findings show in table 2 revealed that majority of respondents, 312 (52.0 %) have a scale farms ranging from 1 to 50, followed by 129 respondents (21.5 %) have scale farming in between 51 and 100 individuals. While a total of 85 respondents (14.17%) have scale farming in between 101 to 150 head of livestock and only 74 respondents (12.33 %) had large -scale farming of more than 151 heads of small ruminants. An important role in the management of small ruminant farming is show in table 2. The results show that farm owners 542 (90.3 %) play an important role in ensuring the success of small ruminant farming, followed by managers 54 (9.0 %) and others such as labor/workers 4 (0.7 %). Table 2 also show the categories of respondents based on their type of farm business. The findings revealed that most respondents classified in breeder 151 (71.8 %) respondents, followed by the category cross breeders 431 (25.0 %) respondents, traders less than two months 142 (23.7 %) respondents, importer 13 (2.2 %) respondents and others category are 113 (18.8 %) respondents. Others category include dairy rancher. Table 2 shows the types of farming systems practiced by the respondents. 290 (48.3%) of respondents have a semi-intensive farming system, followed by 241 (40.2 %) of respondents have intensive system where they keep small ruminant in house system completely, 85 (14.2 %) of respondents have extensive system, 37 (6.2%) of respondents practicing integration farming systems with permanent crops and 12 (2.0 %) of respondents have other system.

Table 2: Farm profile of Small Ruminant Farming

Variables	Parameter	Frequency	%
Scale farming	1-50 heads	312	52.0
	51-100 heads	129	21.5
	101-150 heads	85	14.17
	≥ 151 heads	74	12.33
An important person	Owner	542	90.3
	Supervisor	54	9.0
	Other	4	0.7
Category	Breeder	151	25.2
	Cross breeder	431	71.8
	Trader	142	23.7
	Importer	13	2.2
	Other	113	18.8
System	Intensive	290	48.3
	Semi-intensive	241	40.2
	Extensive	85	14.2
	Integration	37	6.2
	Others	12	2.0

Table 3 shows the summary of Chi square test result between ranchers' demographic profile with small ruminant farming as potential business.

Table 3: Relationship between Respondents' Demographic Profiles with Small Ruminant Farming as Potential Business

Variables	Explanation	Result
Age	Age has no statistical significant association as an observed value of Chi square analysis is 2.717 with 6 degree of freedom and 0.843 levels of significance. The decision is fail to reject the null hypothesis.	Failed to reject H ₀
Education level	Education level has no statistical significant association as an observed value of Chi square analysis is 5.354 with 7 degree of freedom and 0.617 levels of significance. The decision is fail to reject the null hypothesis.	Failed to reject H ₀
Experience in farming	Experience in farming has no statistical association as an observed value of Chi square analysis is 3.084 with 3 degree of freedom and 0.697 levels of significance. The decision is fail to reject the null hypothesis.	Failed to reject H ₀
Income	Income has a statistical association as an observed value of Chi square analysis is 18.379 with 4 degree of freedom and 0.003 levels of significance. Therefore, the decision is to reject the null hypothesis.	Reject H ₀
Scale of farming	Farm size has a statistical association as an observed value of Chi square analysis is 18.292 with 3 degree of freedom and 0.000 levels of significance. Therefore, the decision is to reject the null hypothesis.	Reject H ₀

The results indicate that income and farm size have significant relationship with small ruminant farming as potential business. Significant interactions were found between the income of ranchers and small ruminant farming as potential business; ranchers with higher income and low income have different perspective regarding the small ruminant farming as potential business. Moreover, there is a significant relationship between scale of farming and ranchers' perception toward small ruminant farming as potential business. Overall, ranchers with bigger scale of farm have different perspective regarding the small ruminant farming as potential business. On the other hand, age, education level and experience in farming are the identified socio-economic characteristics which do not have significance relationships with the ranchers' perception toward small ruminant farming as potential business.

Conclusions, implications and recommendations

Small ruminant farming is immerging as an important source of livelihood particularly for landless labourers and marginal farmers across the country. In the present paper, an attempt has been made to explore the present socio-economic status of ranchers and prevailing management practices at household level. Majority of respondent age are between 40-49years old, male and married. Most of them have secondary education with average experiences about less than 10 years. Evidence has shown that majority of rancher own below 50 heads of small ruminant. About 90.3% of farms supervise by ranchers. Study also reveals that about 71.8% respondents were categorized as cross breed ranchers. In addition, respondents rear small ruminant in Intensive system of farming. Result of chi-square analysis showed positive significant relationship to variables with the number of animals and experiences except, age, gender, material status and part time job. Hence, small ruminant farming needs great intension by the government to develop appropriate polices for this industry. Moreover, government sector should encourage the participation of youth and women ranchers to participate and attract them by giving some subsidies like as poultry and oil palm industries. In general, it is important to take into consideration socio-economic factors that influence small ruminant breeding programs to enhance their success.

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