



**Awareness to Avoid The Misuse of Antibiotic in Chicken
Among Farmers in Kelantan**

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**A thesis submitted in fulfilment of the requirements for the
degree of Bachelor of Applied Science Animal Husbandry
Science with Honours**

Faculty of Agro Based Industry

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DECLARATION

I hereby declare that the work embodied in this report is the result of the original research and has not been submitted for a higher degree to any universities or institutions.

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I certify that the report of this final year project entitled “The Awareness To Avoid The Misuse Of Antibiotic In Chicken Among Farmers In Kelantan” by Nur Zafirah Hani Binti Mohamad, matric number F15A0169 has been examined and all the correction recommended by examiners have been done for the degree of Bachelor of Applied Science (Animal Husbandary Science) with Honours, Faculty of Agro-Based Industry, Universiti Malaysia Kelantan.

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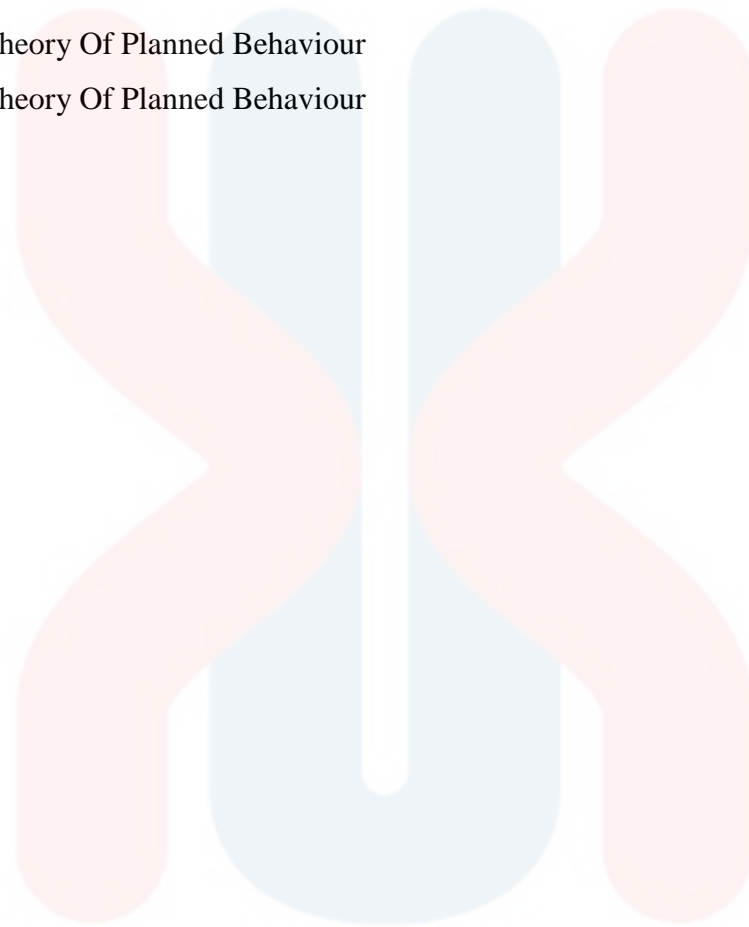


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LIST OF ABBREVIATION & SYMBOLS

UMK	UNIVERSITI MALAYSIA KELANTAN
%	Percentage
r	Correlation
p	Significant Value
n	Frequency
z	z-score

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The Awareness To Avoid The Misuse Of Antibiotic In Chicken Among Farmers In Kelantan.

ABSTRACT

The number of poultry is increasing year by year. The increased number of poultry also lead to the use of antibiotic. Antibiotic brings positive effect, however the use of antibiotic may lead to some negative effect especially if the use of antibiotic was abused. The awareness of using the antibiotic is crucial to avoid the risk of antibiotic towards public health. Thus, this study is conducted to investigate the awareness to avoid the misuse of antibiotic in chicken among the farmers in Kelantan. This study was conducted through the survey method based on the Theory of Planned Behaviour. There are three independent variables in the Theory of Planned Behaviour that were measured namely behavioural attitude, subjective norms and perceived behaviour control. A total of 118 respondents among farmers in Kelantan have been selected for this study through simple random sampling technique. The behavioural attitude was the most influencing factor compare than the other two independent variables which are subjective norms and perceived behavioural control. As a recommended the number of respondents can be enlarged in order to get a more precise result.

Keywords: Misuse, Antibiotic, Behavioural Attitude, Subjective Norms, Perceived Behavioural Control.

Kesedaran Bagi Mengelakkan Penyalahgunaan Antibiotik Terhadap Ayam Dalam Kalangan Peternak Di Kelantan.

ABSTRAK

Bilangan ternakan unggas meningkat dari tahun ke tahun. Peningkatan jumlah ayam juga membawa kepada penggunaan antibiotik. Antibiotik membawa kesan positif namun penggunaan antibiotik mampu membawa kepada kesan negatif terutama jika berlaku penyalahgunaan antibiotik. Kesedaran menggunakan antibiotik adalah penting untuk mengelakkan risiko terhadap kesihatan awam. Oleh itu, kajian ini dijalankan bagi menyiasat kesedaran untuk mengelakkan penyalahgunaan antibiotik terhadap ayam dalam kalangan peternak di Kelantan. Kajian ini dijalankan melalui soal selidik berdasarkan Teori Tingkahlaku Terancang. Terdapat tiga pemboleh ubah yang akan diukur iaitu tingkah laku, norma subjektif dan kawalan tingkah laku. Sejumlah 118 responden dalam kalangan peternak di Kelantan telah dipilih dalam kajian ini melalui teknik pensampelan mudah rawak. Berdasarkan kajian, tingkah laku merupakan faktor yang paling mempengaruhi berbanding pemboleh ubah bebas yang lain yang merupakan norma subjektif dan kawalan tingkah laku. Sebagai cadangan, jumlah responden patut diperbesar bagi mendapatkan hasil kajian yang lebih tepat.

Kata kunci: Penyalahgunaan, Antibiotik, Tingkah Laku, Norma Subjektif, Kawalan Tingkah Laku

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CHAPTER 1

INTRODUCTION

1.1 Background Study

Over the years, the Malaysian population increase thus resulting to an increasing demand for poultry production especially their interest towards chicken (The Poultry Site, n.d). Malaysia was one of the country that has the highest per capita consumption rates in the world for chicken and chicken is the most popular protein source among Malaysian because they are the cheapest source. The farmers use antibiotic in chicken to fulfil the high customer demand. According to John Maas, the use of antibiotics is essential to maintain animal health, assure animal welfare and comfort, and prevent certain diseases from occurring in the first place (Antibiotics and Animal Health, 2015).

However the use of antibiotic may lead to the emerging public health crisis of antibiotic resistance (Bengtsson & Greko, 2014). Antibiotic resistant bacteria can be transferred from animals to humans and vice versa, and food-borne transmission through food of animal origin. For example, antimicrobial-resistant *E. coli* and *Salmonella* species are transmitted from farm animals to humans. In California the outbreak of multidrug-resistant *Salmonella serotype* Newport occur in 1985 where the transmission of the pathogen was traced by genetic means from human

infections to hamburger consumption at fast-food restaurants, then to meat processing plants, and finally back to the dairy farms where the cattle were raised (Swartz, n.d).

The awareness level among farmers must be high in order to avoid the misuse of antibiotic. Based on some incident that occur in other countries such as United States and India, the farmers might misuse or overuse the antibiotic in the chicken. It has been recorded that between 2009 and 2012, the total amount of antibiotic used in food producing animal rose by 16% in the United States and 97% of those drugs are sold over the counter without the veterinarian seeing the animals and writing the suitable prescription (Owen, 2014). 94% of the drugs are believe to be used for the growth promotion or to prevent disease rather than to treat the sick animals when the drugs were given to an entire flock in their feed or water (Owen, 2014).

Other than that, irrational antibiotic use by Peri-urban smallholder dairy farmers in India are due to the low levels of awareness Findings shows that low level of knowledge related to antibiotics among farmers, active informal service providers, direct marketing of drugs to the farmers and easily available antibiotics, dispensed without appropriate prescriptions contributed to easy access to antibiotics. These factors drive to the action of self-administered use of antibiotics in the dairy farms that may lead to the misuse of antibiotics (Chauhan et al., 2018). Due to all of these incident stated, the researcher were motivated to investigate the awareness of risk to avoid misuse of antibiotics in chicken among farmers in Kelantan.

1.2 Problem Statement

Nowadays the issue regarding the use of antibiotics in animal producing food are still in debate. Antibiotic are not deniable to be very important to treat and ensure the animal health. Antibiotic are not deniable to be very important to treat and ensure the animal health. As Marton (2007), state that the antibiotics in animal were used to treat and prevent infection. Antibiotics is one of the animal welfare because the use of antibiotics might prevent animal from getting sick.

However the misuse and overuse of antimicrobials in food-producing animals have been implicated in the emergence of antimicrobial resistance. For example in chicken, some farmers add antibiotics in the feed and drinking water to improve the feed efficiency and for the growth of their chicken by gaining weight (Antibiotics and Animal Health, 2015). Instead of treating the animal, the antibiotics were used to increase the weight of the chicken.

According to Animal Health Institution data, about 87 percent of all antibiotics used in animals were used for these therapeutic purposes in 2007. Hence antibiotics are still important in farming and antibiotics has bring the debate around worldwide regarding the risk of antimicrobial resistance especially the use of growth promoter. Thus the awareness regarding the use of antibiotics in animal are important to avoid the misuse of antibiotic. Many parties are required to take part in to enhance the importance to avoid the misuse of antibiotics. As an example, in Europe the antibiotic growth promoter was ban in 2006, and they imposed the law that the antibiotics have the withdrawal periods before food can enter the food chain

(Martin, 2015). The farmers are the most important community that must be responsible on the judicious use of antibiotic.

1.3 Objectives

1. To identify the awareness to avoid the misuse of antibiotic in chicken among farmers in Kelantan.
2. To examine the level of behavioural attitude, subjective norms and perceived behavioural control among farmers in Kelantan.
3. To analyse the relationship between the awareness to avoid the misuse of antibiotic in chicken to the behaviour, subjective norms and perceived behavioural control among farmers in Kelantan.

1.4 Research Question

1. Did the farmers in Kelantan are aware to avoid the misuse of antibiotic?
2. What was the factors that influence farmers to avoid misuse of antibiotic
3. Did the behavioural attitude, subjective norm and perceived behavioural control are related to the awareness to avoid the misuse of antibiotic in chicken among farmers in Kelantan.

1.5 Scope of Study

This study is to examine the factors that influence the awareness to avoid the misuse of antibiotic in chicken among farmers in Kelantan. Therefore, this study

is only focusing towards farmers in Kelantan. A survey study would be carried out.

The survey data would be analysed using the descriptive statistic

1.6 Significant of Study

This study will be significant to identify the awareness to avoid the misuse of antibiotic in chicken among farmers in Kelantan by distribute the questionnaires to respondent respectively. Moreover, this research it may help the future researcher and also beneficial to the government agencies as they can refer to this study regarding the level of awareness among farmers.

CHAPTER 2

LITERATURE REVIEW

2.1 Antibiotic and Its Effect

For the past 50 years, the use of antibiotics helped to increase the growth of the poultry industry and reducing the negative impacts of many avian diseases (Bermudez, 2003). Antimicrobial refers to drugs that will fight variety of microorganism include bacteria, viruses, fungi, and parasites while antibacterial refers to drugs that will only fight bacteria (Mehdi et al., 2018). Another term for antibacterial drug is antibiotic. Antimicrobial resistance refer to the ability of bacteria or other microbes to resist the effect of a drug (Mehdi et al., 2018).

Antibiotic only works to fight against infectious disease caused by bacteria. Antibiotics can be given to animal in the form of balanced supplements and premixes that are processed and sold by the feed-manufacturing industry. Most antibiotics in poultry was administered in the drinking water.

Antibiotic also used in animal for the prevention of disease, for the treatment of disease and for the growth promoter. The term

for treatment of disease is therapeutic. The term for prevention of disease is prophylaxis, while Metaphylaxis is the term used for the treatment of a batch of animals when at least one is diagnosed as ill. Subtherapeutic is the term used to promote growth and improve feed efficiency that was administered in the animal feed and water (Phillips et al., 2003).

The misuse or overuse of antibiotic may give negative impact toward human health through the development of resistant strains of organisms in host animal. Food borne disease usually occur due to the existence of *Campylobacter*, *Escherichia Coli Bacteria* and *Salmonella*. Tens of millions of cases of these bacterial infections occur in humans every year worldwide (Mehdi et al., 2018). Zoonotic disease can occur through the transfer of a resistance problem from animals to man. The bacteria *Salmonella* and *Campylobacter* except the *E.coli* cause no disease in animals but can cause disease in man (Phillips et al., 2003).

Antimicrobial resistant *Salmonella* is a resistant bacteria that can be transmitted through foods based in a study in United States regarding the isolation of antibiotic resistant salmonella from the retail ground meats. It has been reported that 20% of samples of ground meats yielded salmonellae, meanwhile others were found in chicken, turkey, pork, beef and shellfish (White et al., 2001). Chicken is also the main source of *Campylobacteria* infection. Based on the study of efforts to control *Campylobacter* infection in Iceland, approximately 62% of broiler carcass rinses were contaminated with *Campylobacter spp.* in 1999 before it decreased into 15% (Stern et al., 2003). The transfer of the antibiotic resistant can be transmitted from animals to people in three ways which are by the direct contact with infected animals, consumption of the contaminated food with resistant bacteria and finally through antibiotic resistance transferred into the environment.

2.2 The Theory of Planned Behaviour

Theory of Planned Behaviour (TPB) (Ajzen 1991) is a model that was usually used to study the human behaviour. It state that the strength of an intention to engage in a certain behaviour is a predictor of actual behaviour (Speksnijder & Wagenaar, 2018). The TPB was employed to measure the awareness among farmers to avoid the misuse of antibiotic. TPB was originally extended from the theory of reasons action (TRA) and was proposed by Azjen. The human behaviour was believed by Azjen to be affected by external factor and objectives circumstances rather than completely controlled by individual so he added a new variable which are the perceived behavioral control. Theory of plan behaviour develop three determinant which are the attitude toward the behavior, subjective norm, and perceived behavioral control. Intention is important as it shows the degree of effort how the individuals are willing to perform the behaviour (Ajzen, 1991).

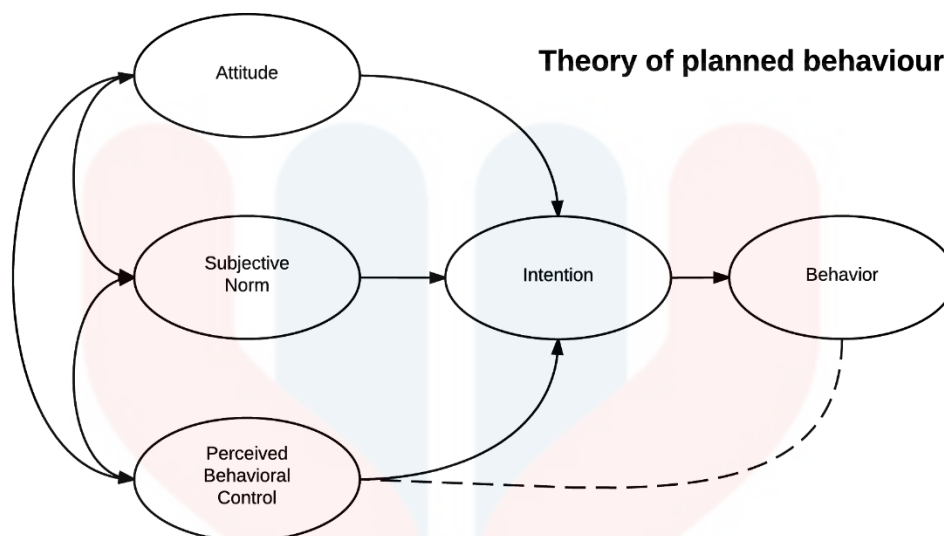


Figure 2.1: Framework of theory of planned behaviour. (Source: Azjen, 1991)

In figure 1, the ‘Intention’ is the central construct of the theory (Jackson, Quaddus, Islam & Stanton, 2006). Intentions show a person's motivation. The attitude toward the behaviour, subjective norm and the perceived behaviour control are the variables that will influence the intention. To measure the level by which the extent of an individual believes the outcomes of a behaviour can be controlled, the perceived behavioural control has been added (Azjen, 1991).

2.2.1 Behavioural Attitude

The first determinant is the attitude. Attitude was resulted from the individual behaviour (Azjen, 1991). The farmers’ attitude will influence them whether to a misuse the antibiotic or avoid them. Behavioural attitude determined by their beliefs on the outcome of their attitude. It can be influenced by perceptions

of risks, past experiences, personal characteristics, knowledge and others (Speksnijder & Wagenaar, 2018).

For example in a qualitative interview study, there were 21 veterinary surgeons purposively selected from all UK pig veterinary surgeon. The endemic disease in the UK pig must be prevented and some of the surgeon feel like the use of antibiotic is important (Coyne et al., 2016). Some of them however suggest the farmers to use vaccine instead of antibiotic to prevent disease and to avoid from overuse it.

Based on a survey study in Wales and England this study is significance because it plays important role to contribute to farmer awareness. The study report that the farmer behavioural attitude was higher because they were aware and concern about the risk of misuse of antibiotics (Jones et al., 2015).

2.2.2 Subjective Norm

The second determinant is the subjective norm. The individual decision to perform the behaviour are affected by the social force such as from the organization, government and from the significant others (Ajzen, 1991). The farmers might be influenced by their significant other. However, according to Fishbein and Ajzen (1975), individual perception depends on the people around them such as close relative that will be an inspired person to do certain things and be a role model to their self. Subjective norm are affected by two factors which are normative believe and motivation.

Subjective norm was basically the perception of views of others towards the behaviour and motivation that lead the individual to perform the behaviour (Speksnijder & Wagenaar, 2018). In a qualitative interview study to understand the culture of antimicrobial prescribing in agriculture toward UK pig veterinary surgeons, one of the strong reason for the individual to perform the behaviour was the influence of the peer farmer on the use of antibiotics, and the preventive measures (Speksnijder & Wagenaar, 2018). Thus, the researcher may study the awareness to avoid misuse of antibiotic in chicken among farmer by doing research based on the subjective norm.

2.2.3 Perceived Behavioural Control

The third determinant is the perceived behavioural control. Perceived behaviour control was important in the theory of planned behaviour to show that this theory was different from the theory of reasoned action. A measure of perceived behavioural control may add little to accuracy of behavioural prediction. This theory describes the level of ease or difficulty for the individual to perform the behaviour. Azjen (1991) state that if the individual having difficulties to perform the behaviour, so there is high possibilities that the perceived behavioural control is poor.

Perceived behaviour control refer on the ease or difficulty to perform certain behaviour. Normally, the perceived behaviour control was influenced by past experiences, external factors in the environment, and seeing others doing it (Speksnijder & Wagenaar, 2018). Non-pharmacological issues such as the administration of the antimicrobial (ease of administration, animal temperament,

and farmer's ability to administer drugs) will influence the choice of antimicrobial prescribed. The choice of antibiotic to be used is important to avoid the misuse of antibiotic. This was proved based on a study among veterinarian regarding the antimicrobial prescribing behaviour of veterinary practitioners in cattle practice in Ireland. The issue was on the frequency of treatment, route of administration, duration of treatment, withdrawal periods, volume of injection and distribution of drug in the body (Gibbons et al., 2013).

CHAPTER 3

METHODOLOGY

3.1 Research Design

The aim of this study was to identify the awareness to avoid the misuse of antibiotics in chicken among farmers in Kelantan. This study applied a quantitative research design. The dependent variable for this study is the awareness to avoid the misuse of antibiotics in chicken among farmers in Kelantan while the independent variables were the behavioural attitude, subjective norms and perceived behavioural control. The data that was collected were then analysed using SPSS software to determine the demographic profile, dependent variable as well as independent variables.

3.2 Research Framework

The aim of this study is to identify the awareness to avoid the misuse of antibiotics in chicken among farmers in Kelantan, as well as applying the Theory of Planned Behaviour to this study.

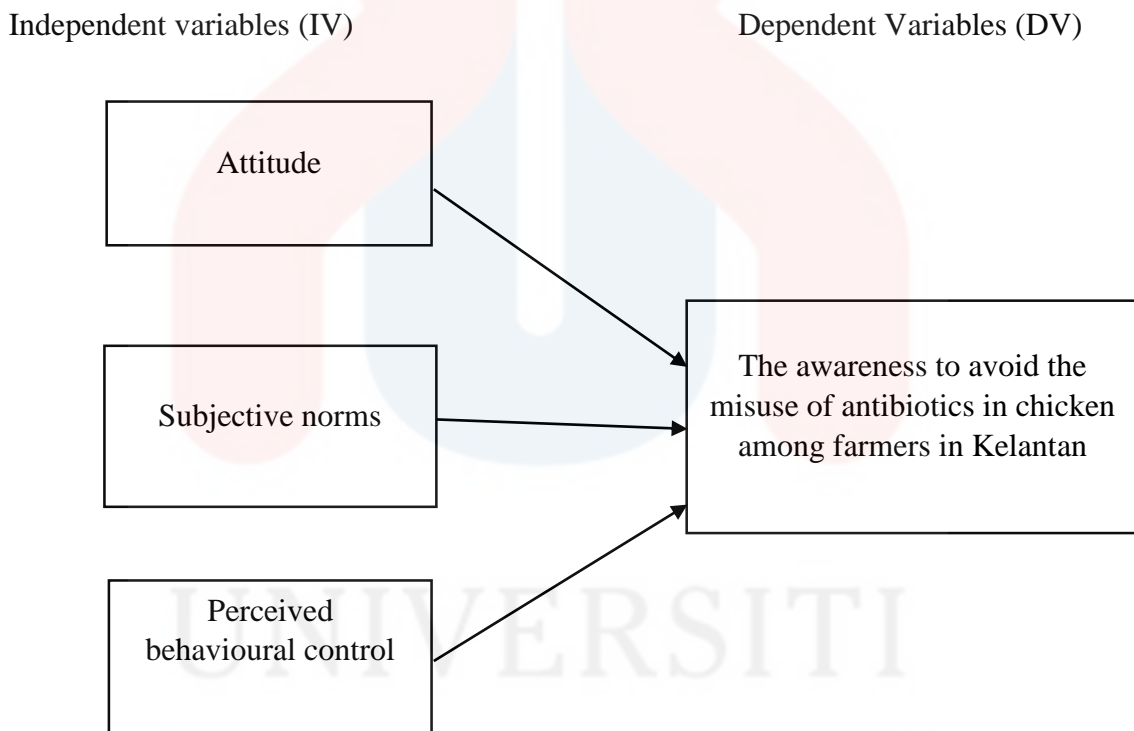


Figure 3.1: Theory of Planned Behaviour Framework

3.3 Research Hypotheses

There are several hypothesis on this study, it includes:

- H1: There is significant relationship between attitudes towards the awareness to avoid the misuse of antibiotics in chicken among farmers in Kelantan.
- H2: There is significant relationship between subjective norms towards the awareness to avoid the misuse of antibiotics in chicken among farmers in Kelantan.
- H3: There is significant relationship between perceived behavioural controls the awareness to avoid the misuse of antibiotics in chicken among farmers in Kelantan.

3.4 Instrumentation

Self-administrated questionnaire were prepared and distributed personally to the respondents in Kelantan. To ensure the reliability of the questionnaire, the participants who answered the questionnaire will be supervised by the researcher. The questionnaires consist of Part A, B, C, D and E. Demographic questions were asked in the Part A. While dependents variable of this study which is awareness to avoid the misuse of antibiotics was asked in Part B. Meanwhile, Part C (attitude), Part D (subjective norm) and part E (behavioural control) contains items for the independent variable. All items had been measured using a Likert scale ranging from 1 (Strongly disagree), 2 (Disagree), 3 (Average), 4 (Agree) to 5 (Strongly

agree). The data that has been successfully collected were transferred into SPSS for further analysis.

Part A: Socio-demographic Profile

Questions regarding the demographic information were asked in this part, it included the respondent's gender, race, ages, level of education, business experience and total number of chicken in their farm.

Part B: Awareness to avoid the misuse of antibiotics in chicken among farmers in Kelantan.

The dependent variable for this study is awareness to avoid the misuse of antibiotics in chicken among farmers in Kelantan. There are five items that consisted in this part. The items also had been referred from the previous study conducted by Jones (2015). The items in the questions had been modified by the researcher to ensure it is relevant to the context of this study

Part C: Behavioural Attitude

Behavioural attitude was the independent variables for this study. This part consists of five questions. Items were referred from the previous study conducted by Jones (2015). The items in this section had been modified by the researcher to ensure it is relevant the scope of this study. Thus, the items basically to determine awareness to avoid the misuse of antibiotics in chicken among farmers in Kelantan

Part D: Subjective Norm

This part consists of five questions. Items were referred from the previous study conducted by Jones (2015). The items in this section had been modified by the researcher to ensure it is relevant to the scope of this study. Thus, the items were employed to determine the awareness to avoid the misuse of antibiotics in chicken among farmers in Kelantan that commonly their decision was influenced from their family, friends and relatives respectively. In the other word, the items were known as external factor.

Part E: Perceived Behavioural Control

This part consists of four questions. Items were referred from the previous study conducted by Jones et al., (2015). The items in this section had been modified by the researcher to ensure it is relevant to the scope of this study. Generally, the items in this part were examined to determine on how the respondents reacted when they faced the problems as well as challenges from the past experience.

3.5 Population & Sample

This research was conducted in Kelantan in five district which are Jeli, Tanah Merah, Kota Bharu, Pasir Puteh and Machang. The total number of farmers in those five district are 170. According to Krejcie and Morgan (1970), there are about 118 questionnaires would be enough to distribute among respondents who stayed in those

Table 3.1: Determining Sample Size of a Known Population

Table 3.1									
<i>Table for Determining Sample Size of a Known Population</i>									
N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	100000	384

Note: N is Population Size; S is Sample Size *Source: Krejcie & Morgan, 1970*

Source: Krejcie & Morgan (1970)

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3.5.1 Sampling Size and Procedure

It is quite difficult for researcher to collect data from each of element due to the every population consists of hundreds to thousands elements so the sample size was used. Sampling size is the process to select a sufficient amount of elements from the population and the collected data sample can represent the characteristic of the entire population. (Sekaran, 2003). However, to collect the data in the whole population still can be conceivable but the researcher consume a lot of time, expenses and human resource as well. According to Roscoe (1975) who was purposed the Rules of Thumb in order to determine the sample size, sample size must be larger than 30 samples and less than 500 are appropriate for most research. However, minimum size for sample size should be 30 samples for each category (Sekaran, 2003).

The researcher used the probability sampling method which is the simple random sampling. To be specifically, the researcher employed sampling without replacement which means a population element can be selected only one time respectively. For those who was taken the test before (pilot test), they were not allowed to do it again in the actual data collection. About 118 questionnaires were distributed to farmers in the five district. The reason of this study only selected the respondents among farmers so that the studies can focused on the awareness among farmers.

The collected data was obtained through the survey method. According to Hair et al., (2006), survey method was able to represent large sample sizes at relative

low cost and uncomplicated to researcher. The questionnaires were distributed by self-administrated and the instruction of self-administrated questionnaires must be simple and easy to interpret by respondents as well. The source of respondent's list name was obtained from Department Of Veterinary Services in Kota Bharu, Kelantan.

Since the sampling type was simple random sampling, researcher use Microsoft Excel software to obtain the random number from the list names of fish chicken so that every farmers has chance to be selected for questionnaires distributions. The collected data were then analysed in SPSS by the descriptive statistics and bivariate correlation of dependent as well as independent variables (Wellman, 1998).

3.6 Data Preparation

3.6.1 Pilot Study

A pilot test or preliminary study was conducted to 17 farmers in Kelantan. Thus, the information was obtained from respondents through the questionnaires that already distributed successfully. Then, to measure the reliability of the questionnaire the researcher used the reliability test and the Cronbach's alpha already calculated. Besides that, the respondents who had taken part in this test before were disallowed to do it in the next actual data collection.

3.6.2 Reliability of Instrument

Pilot test was done in order to determine its feasibility and reliability of the questionnaires and about 17 questionnaires successfully distributed to the respondents. In addition, to ensure the internal consistency of the items in every part of the questionnaires were reliable, the reliability test was conducted and the Cronbach's alpha value was calculated. According to Nunnally (1978), the Cronbach's alpha value must have a minimum alpha 0.6 for preliminary study. The reliability is an indication of the consistency with which the instruments measures the concept and helps to access the "goodness" of measure (Sekaran & Bougie, 2010).

Table 3.2: Reliability coefficients of the research instruments

Construct	Number of item	Alpha(n:17)
Awareness	5	0.647
Behavioural control	5	0.725
Subjective norm	5	0.753
Perceived behavioural control	4	0.696

The results of the reliability test analysis as shown above (Table 3.2). The value of Cronbach's alpha for dependent variable which is awareness, behavioural attitude, subjective norm and perceived behavioural control were 0.647, 0.725, 0.753 and 0.696 respectively. It indicated that all the values of dependent variables had exceeded 0.6 value and they were considered as acceptable and reliable.

3.7 Data Analysis

The collected data were analysed by using SPSS. The descriptive and correlation analysis has been employed to answer all the objectives of the research.

3.7.1 Descriptive Analysis

The elements in descriptive statistics namely frequency percentage, mean as well as standard deviation were adapted to clarify the demographic respondents. Besides that, descriptive also has been used to measure the level of each variable respectively. Mean score was one of the elements that been used in this studies to evaluate the level of dependent variable.

Table 3.3 Mean score interpretation

Mean score	Interpretation
1.00-1.80	Very low
1.81-2.60	Low
2.61-3.20	Medium
3.21-4.20	High
4.21-5.00	Very high

Source: Moidunny (2009)

Based on table 3.3, each level mean score represent the level of awareness of farmers to avoid the misuse of antibiotic. The mean score which in the range of 1.00-1.80

indicated that the level of awareness is very low while the range 4.21-5.00 indicated that the awareness was very high.

3.7.2 Normality analysis

Normality test is a statistical process used to determine if a sample or any group of data fits a standard normal distribution. For data that follows a normal probability distribution, parametric test can be applied by comparing data values to a distribution which has a symmetrical shape and evaluated through the value of parameters such as z-value while the data that not follow normal probability distribution, non-parametric tests is used as a ranking of data.

3.7.3 Correlation analysis

The correlation analysis is used to determine the relationship between dependent and independent variables. There are two method in correlation analysis which are Pearson's correlation and Spearman's correlation. This analysis is to examine the magnitude and relationship of the variables (Ho, 2006). When two of the variables got positive r , meaning that it had a positive relationship and vice versa. Rule of Thumb by Guilford is used in this study to measure the strength of relationship.

Table 3.4: Strength of Spearman's correlation

<i>r</i>-value	Strength
0.00-0.19	Very weak
0.20-0.39	Weak
0.40-0.59	Moderate
0.60-0.79	Strong
0.80-1.0	Very strong

Source: Statstutor

Based on the Table 3.4, the strength of relationship is based on r value. When the value of r is less than 0.2, the strength of relationship is assumed negligible. Furthermore, if the value of r is increase, then the strength of the relationship also increases. For instance, when the r value is 0.2 to 0.4, 0.4 to 0.7, 0.7 to 0.9 and more than 0.9, the strength of relationships can be measured as low, moderate, high and very high relationship respectively.

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Introduction

This research was a quantitative research. This is due to the used of questionnaires as the sources of information. They were 118 questionnaires were distributed and collected. The study is conducted to study the awareness to avoid the misuse of antibiotic in chicken among farmers in Kelantan and it adopted descriptive test to explain the respondent's general information and their demographic profile. Reliability test was also used to test the validity of the results on the factors that influence the awareness of farmers to avoid misuse of antibiotic. The Cronbach's Alpha value must have a minimum alpha 0.6 and as suggested by Hair et al., (2006) as well as Sekaran and Bougie (2010). The questionnaire containing Likert-scale ranging from 1-5 and must be completed. The descriptive analysis like frequency, percentage, mean and standard deviation analysis also had been used to measure the level of dependent and independent variables respectively. The descriptive and the correlation analysis were adapted to answer the objective of this study. Data was collected in five areas in Kelantan which are Jeli, Tanah Merah,

Machang, Pasir Puteh and Kota Bharu with the 118 targeted respondents. High response rate was achieved from respondents due to each respondent was given 20-30 minutes to answer all the questions in the survey form before collected back. This research output was analysed by using SPSS version.

4.2 Validity of Questionnaire

Based on Nunnally (1978), Cronbach alpha test is a measurement tools for internal consistency. The reliability coefficient of each construct that exceed 0.6 is considered as acceptable.

Table 4.1: The Reliability Test results from SPSS

Construct	Cronbach's alpha	No. of items
Attitude	0.976	5
Subjective norms	0.882	5
Perceived behavioural control	0.942	4

Based on table above, the attitude has the highest Cronbach's alpha. It proves that the attitude is very consistent and a very reliable. The second highest level of Cronbach's alpha is the perceived behavioural control which is 0.942 followed by the subjective norms which is 0.882. The overall results of the reliability test above were found to be

good in consistency and reliability for all the independent variables as all of the Cronbach's alpha results were above 0.7.

4.3 Demographic Profile of Respondents

Table 4.2: Demographic Profile of Respondent

Item	Frequency (n = 118)	Percentage (%)	Mean	Standard Deviation
Gender				
Male	113	95.8		
Female	5	4.2		
Race				
Malay	112	94.9		
Chinese	6	5.1		
Age				
1(20-29)	6	5.1		
2(30-39)	28	23.7	3.31	1.18
3(40-49)	29	24.6		
4(50-59)	33	28.0		
5(60-69)	22	18.6		

Level of education				
1 Primary School	0	0		
2 Pmr	8	6.8	3.51	0.81
3 Spm	58	49.2		
4 Stpm/ Diploma	36	30.5		
5 Degree	16	13.6		
Business experience				
1(1-5)	9	7.6		
2(6-10)	28	23.7		
3(11-15)	28	23.7	3.44	1.49
4(16-20)	23	19.5		
5(21-25)	15	12.7		
6(26-30)	15	12.7		
Current stock				
1(1-20000)	109	92.4		
2(20001-40000)	1	0.8	1.19	0.731
3(40001-60000)	4	3.4		
4(60001-80000)	2	1.7		
5(80001-100000)	2	1.7		

Table 4.2 shows the gender for the total respondents (n = 118), frequency of 113 respondents (96%) are males and frequency of 5 respondents (4%) are females. This shows the population of male is higher than female. Male respondent is higher than female because commonly men are more active and stronger to do labour work (Lu, 2007). Other than that, female farmers are unable to do farm work because they have limited access to education on farming. They also lack in resources, credit, agricultural extension and information, land ownership and time (Mehra, 1991).

Only two race are available in this study. Out of the total respondents (n = 118), the highest respondent that contribute in this survey is Malay which is 112 respondents (95%) followed by 6 Chinese respondent (5%). This is due to the number of resident in Kelantan mostly are Malay. The number of Malay in Kelantan is 1,378,352 while the number of Chinese in Kelantan is 48,787, so this number might explain the huge different in the number of farmers according to different race.

The highest age category is between 50 to 59 years' old which is 33 respondents (28.0%). Out of 118 respondents, 60 to 69 years old contribute to 22 respondents (18.6%). Followed with 29 respondent ages from 40-49 with 24.6 %. Then 23.7% of respondent ages from 30-39 with 28 respondents. While the lowest number of respondent with 6 respondent contribute to 5.1% ages from 20-29. The number of younger respondent are low. Based on an Africa literature, there are two conclusions which are the young people do not really interested in farming or they are interested to farm but due to some obstacle such as inability to own land had restrict the intention to farm (Sumberg, Yeboah, Flynn & Anyidoho, 2017). Other than that in Ghana, young people are interested in farming but due to the no land resources available had restrict their intention to farm (Amanor, 2010).

The highest level of education among the farmers is the study until the SPM which is 49% with 58 respondents. Out of 118 respondents, 31% of the respondent study until Diploma that contribute to 36 respondents. Next is 16 respondents with 14% of the total percentage have achieved degree level of education. Finally, the lowest number of respondent of 8-person study until primary education that contribute to 7% out of 100% respondent. According to Tadele & Gella, (2012) farming is always considered as a backward industry especially for those who had

higher level of education. The education level of farmers affects the farmer's awareness, as the educated farmer can easily gain information through reading or access the internet (Oztas, Kurt, Koc, Akbaba & Ilter, 2018).

The highest current stock of famers was around 1-20000 chickens, by which contribute to 92.4% out of 100% total farmers. The 92.4% contribute to total of 109 farmers. Next 3.4% show that 4 farmers have 40001-60000 chickens. Next there are two data that shows the same value of percentage which is 1.7%. 1.7% shows 2 farmers have 60001-80000 stock. While another 7.1% show that 2 farmers have 80001- 100000 stock. The lowest number of stock was 20001 to 40000 with 0.8% of 1 farmer.

Experience in farming is an important factor. The experience will affect the productivity of the work and increase production. Other than that, experience people lead to effective input and reduces cost (Oztas, Kurt, Koc, Akbaba & Ilter, 2018). For this study the experience farmers might aware on the use of antibiotic. Based on the previous study to know the Impact of Participating in an agriculture Program, show that they are lack of agricultural knowledge because they had no experience in agricultural. The result show 31.7% of the participants reported that they had no previous agriculture experience (Luckey et al., 2013). So experience is an important item to let people aware and have knowledge in farming and the use of drugs in farming

4.4 Normality Test on Farmers' Awareness

According to the previous study by Sribija (2010), the normality histogram

was used to study the dependent variable and it has complete information to analyse data by which it has the skewness value and kurtosis value. It had been shown that a bell-shaped curve has a negatively skewed distribution. This researcher also stated that these measures of skewness and kurtosis are one of the method to examine the distribution of the data.

4.4.1 Skewness and Kurtosis

Table 4.3: Skewness and Kurtosis Analysis Test

	Statistic	Std. Error
Skewness	-0.340	0.223
Kurtosis	-0.841	0.442

Based on the table 4.3, the value of skewness that obtained from the data was -0.340 until -0.841. According to the Shamshuritawati (2017), the acceptable range for normal distribution data of the value of skewness and kurtosis are between -3 to +3. Sribija (2010) stated that the value of Skewness and Kurtosis show the range of normal distribution where a given distribution around its mean, skewness can show the degree of asymmetry. Skewness will be close to 0 if the distribution of data is symmetric. An asymmetric tail that extend toward more positive values show positive skewness while a distribution with an asymmetric tail extending toward more negative values show negative skewness (Siyavula, n.d). Kurtosis show the relative peakedness or flatness of a distribution compared with the normal

distribution (Srbija, 2010). For normally distributed data the kurtosis is 0. A peaked distribution show positive kurtosis indicates a relatively flat distribution show negative kurtosis.

4.4.2 Shapiro-Wilk Test

Table 4.4 Summary of Shapiro –Wilk Test

Shapiro-Wilk	Statistic	Df	Sig
Mean Of The Awareness To Avoid The Misuses Of Antibiotic	0.935	118	0.000

Shapiro-Wilk Test was used to detect departures from normality and the sample size can apply up to 2000. Shapiro-Wilk test was used as another test apart from the measures of skewness and Kurtosis. Since, Skewness and Kurtosis are not definitive in concluding normality, so performing other tests for normality such as the Shapiro-Wilk or the Kolmogorov-Smirnov test are more preferable. (Razali & Bee, 2011).

Shapiro-Wilk was carried out first to determine the normality of the data and it also determined the suitable test used for correlation analysis. Shapiro-Wilk is a test which according to the correlation between data and the normal values (Peat & Barton, 2005). It is recommended by researchers as it has the ability to detect a

sample whether comes from a non-normal distribution (Asqhar & Saleh, 2012). According to the Table 4.3, the Shapiro-Wilk had been shown the statistic value of 0.951 with a significance value of 0.000.

Based on Shamsuritawati (2017), if the significance value of Shapiro-Wilk greater than 0.05 the data is considered as normal. While the significance value is lower than 0.05 it is considered as not normally distribute. From the Table 4.3, the data is not normally distributed because the significance result was lower than 0.05 which is 0.00.

4.4.3 Spearman's Correlation Test

Based on the normality test conducted, the Spearman correlation test was used because the significance of Shapiro-Wilk shows 0.00 so the data was a non-normality distribution and also known as non-parametric statistic by which the non-parametric statistic is the data which do not need to fit a normal distribution and it does not rely on numbers but prefer ranking order so Spearman's Correlation test is the suitable test to test the variables of this study as this correlation test is based on the ranked value for each variable and it used to measure the strength between two variables (Jan & Tomasz, 2011)

4.5 Level of Variables

4.5.1 Awareness To Avoid The Misuse Of Antibiotic In Chicken Among Farmers

Table 4.5 Percentage Distribution of Respondents by Items for Awareness to Avoid the Misuse of Antibiotic in chicken Among Farmers Kelantan

	1	2	3	4	5
It is important to use antibiotic according to the correct description	0	0	32.2(38)	54.2(64)	13.6(16)
I have knowledge regarding the antibiotic used in my chicken	0	0	33.9(40)	53.4(63)	12.7(15)
I am aware to the risk of misuse of antibiotic	0	0	33.1(39)	51.7(61)	15.3(18)
I do not use the growth promoter	0	0	37.3(44)	50.8(60)	11.9(14)
I believe that excessive used of antibiotic are not important in chicken farming.	0	0	35.6(42)	50.0(59)	14.4(17)

Notes: Number in paranthesis () represent the frequency

Table 4.6. The Level of Awareness to Avoid the Misuse of Antibiotic In Chicken
Among Farmers In Kelantan

Level	Frequency	Percent %	Mean
			4.40
Low (1-2.33)	0	0	0
Moderate(2.34-3.66)	0	0	0
High (3.67-5)	118	100%	0

On a five point Likert scale, 54.2 % of respondents agreed it is important to use antibiotic according to the correct description. On the other hand, 53.4 % of respondents have knowledge regarding the antibiotic used in their chicken and they are majority in number. While, 51.7 % agree that they are aware to the risk of misuse of antibiotic that contribute to the highest percentage. 50.8% agree that they do not use the growth promoter. Finally, highest frequency for the question ‘I believe that excessive used of antibiotic are not important in chicken farming’ is 59 with percentage of 50%.

The mean was recorded at where the value was 4.40 and it is quite high. From the findings the mean score for the dependant variables was 4.40 which can be considered as quite high. This indicate that most of the farmers has high awareness to avoid the misuse of antibiotics. The reason for stating the farmers has high awareness due to the mean score of 4.40 by which according to Moidunny (2009) the range that fall between 4.21 to 5 are considered very high. Furthermore,

along the interview most of the farmers said that they must avoid the misuse of antibiotics.

4.5.2. Behavioural Attitude

Table 4.7 Percentage Distribution of Respondents by Items for Behavioural Attitude

	1	2	3	4	5
As a farmer, it is important for me to avoid the misuse of antibiotic.	0	0	33.9(40)	54.2(64)	11.9(14)
I believe the misuse of antibiotic is risky	0	0	34.7(41)	51.7(61)	13.6(16)
I believe by avoiding the misuse of antibiotic, I still can gain profit.	0	0	33.9(40)	53.4(63)	12.7(15)
I feel comfortable to avoid the misuse of antibiotic by performing good husbandry practice.	0	0	34.7(41)	51.7(61)	13.6(16)
I feel ease when I decided to avoid the misuse of antibiotic.	0	0	33.9(40)	53.4(63)	12.7(15)

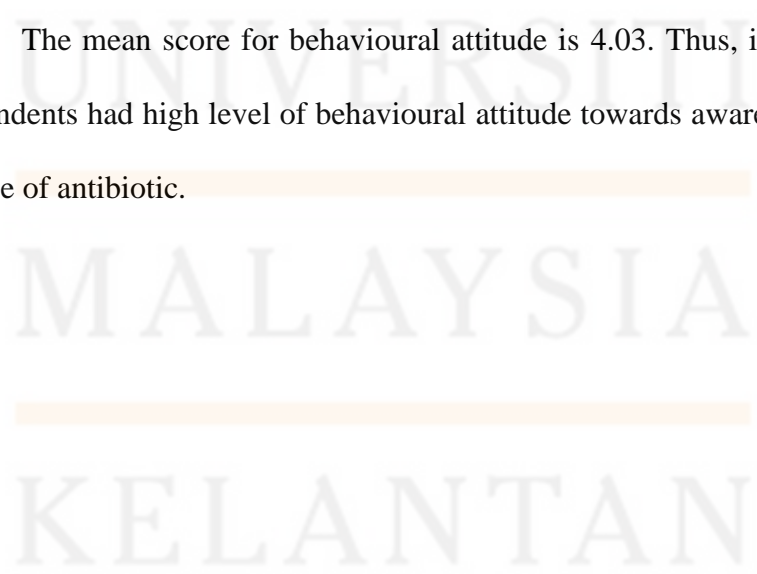
Notes: Number in paranthesis () represent the frequency

Table 4.8: The Level of Behavioural Attitude

Level	Frequency	Percent %	Mean
			4.03
Low (1-2.33)	0	0	
Moderate(2.34-3.66)	12	10.2	
High (3.67-5)	106	89.9	

On a five point Likert scale, 54.2 % of respondents agreed it is important to avoid the misuse of antibiotic. On the other hand, 51.7 % of respondents believe that misuse of antibiotic is risky. 53.4 % agree that they still can gain profit eventhough they do not misuse or overuse the antibiotic. Finally, the highest frequency for the question ‘I feel ease when I decide to avoid the misuse of antibiotic’ is 63 with percentage 53.4 %.

The mean score for behavioural attitude is 4.03. Thus, it showed that the respondents had high level of behavioural attitude towards awareness to avoid the misuse of antibiotic.



4.5.3 Subjective Norm

Table 4.9: Percentage Distribution of Respondents by items for Subjective Norm

		Factor	1	2	3	4	5
		loadin					
		g					
Other farmers		0.837	0	0	60.2(71)	35.6(42)	4.2(5)
encourage me to avoid the misuse of antibiotic							
I feel confident to use antibiotic based on correct prescription after attending the seminar.		0.829	0	22.0(26)	67.8(80)	5.9(7)	4.2(5)
Family and significant others encourage me and appreciate my decision to increase company profit by avoiding the misuse of antibiotic.		0.794	0	0	29.7(35)	61.0(72)	9.3(11)
I believe by avoiding the misuse of antibiotic can increase the consume level		0.854	0	0	58.5(69)	36.4(43)	5.1(6)

The veterinarian is the most influential source	0.811	0	0	67.8(80)	28.0(33)	4.2(5)
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Notes: Number in paranthesis () represent the frequency

Table 4.10: The Level of Subjective Norm

Level	Frequency	Percent (%)	Mean
			3.49
Low (1-2.33)	0	0	
Moderate(2.34-3.66)	72	61	
High (3.67-5)	46	38.9	

The finding shows that 35.6% of the respondents agreed that other farmers encourage them to avoid the misuse of antibiotic. However, 22.0% do not agree 'I feel confident to use antibiotic based on correct prescription after attending the seminar'. The lowest frequency for the question 'Family and significant others encourage me and appreciate my decision to increase the company profit by avoiding the misuse of antibiotic' is 11 with percentage of 9.3%. 67.8% of respondents moderately think that the veterinarian is the most influential source.

The mean score for subjective norm was 3.49, which was categorized as high.

4.5.4 Perceived Behavioural Control

Table 4.11: Percentage Distribution of Respondents by items for Perceived behavioural control

	1	2	3	4	5
I have skills and knowledge to use the antibiotic wisely.	0	0	38.1(45)	60.2(71)	1.7(2)
I feel it is easy to use antibiotic based on the prescription	0	0	36.4(43)	61.9(73)	1.7(2)
Misuse of antibiotic may involve the authority	0	0	39.8(47)	58.5(69)	1.7(2)
The irrelevant use of antibiotic will cause loss in money if the chicken sick.	0	0	36.4(43)	61.9(73)	1.7(2)

Notes: Number in paranthesis () represent the frequency

Table 4.12: The Level of Perceived Behavioural Control

Level	Frequency	Percent (%)	Mean
			3.79
Low (1-2.33)			
Moderate(2.34-3.66)	40	33.9	
High (3.67-5)	78	65.9	

On five points Likert scale, 60.2% agreed that ‘I have skills and knowledge to use the antibiotic wisely’. 61.9% agreed that ‘I feel it is easy to use antibiotic based on the prescription. 58.5 % agree that misuses of antibiotic may involve the authority. 36.4% averagely think that the irrelevant use of antibiotic will cause loss in money if the chicken sick.

The mean score for subjective norm was 3.79, which was categorized as high.

4.6 The Factors That Affect The Farmer’s Awareness To Avoid The Misuse Of Antibiotic

There are 3 factors that affect the farmer’s awareness which are the behaviour attitude, the subjective norms and the perceived behavioural control. To analyse the correlation and significance of each factor towards the awareness among farmers, the Spearman test was used.

4.6.1 Factor Analysis Using Spearman’s Correlation

Table 4.13 Spearman correlation of attitude towards the awareness to avoid the misuse of antibiotics in chicken among farmers in Kelantan.

Correlation coefficient (r)	Significant value (p)	Frequency (n)
0.520**	0.000	118

Hypothesis 1

- There is significant and positive relationship between attitude towards the awareness to avoid the misuse of antibiotics in chicken among farmers in Kelantan

Table 4.13 shows that the Spearman's correlation coefficient (r -value) between attitude toward awareness is 0.520 with p -value of 0.000 < 0.001. Hence it indicates that the hypothesis is accepted. According to the Moidunny (2009), the r value in this study is moderate so there is a significant and positive relationship between attitudes towards the awareness of farmers in Kelantan to avoid the misuse of antibiotics.

Based on the study in Wales and England toward the dairy farmer's attitude in prescribing antimicrobial state that they are agree and believe in themselves to reduce the use of antibiotics (Jones et al., 2015). The farmers themselves are motivated and aware to avoid the misuse of antibiotics. So in this study the farmers themselves believe in themselves that it is important to avoid the misuse of antibiotic. Apart from that the main reason to restrict antimicrobial among the Dutch farmers are to improve the public health, because of their own awareness (Kramer et al., 2017). In this study, the farmers are aware of the risk of misuse of antibiotic. During answering the questionnaire, most of them said that they will not misuse the antibiotic based on the questionnaire 'I am aware to the risk of misuse of antibiotic' in Part B.

Table 4.14 Spearman correlation of subjective norms towards the awareness to avoid the misuse of antibiotic in chicken among farmers in Kelantan

Correlation coefficient (<i>r</i>)	Significant value (<i>p</i>)	Frequency (<i>n</i>)
0.036	0.701	118

Hypothesis 2

- There is significant and positive relationship between subjective norms towards the awareness to avoid the misuse of antibiotics in chicken among farmers in Kelantan

Table 4.14 shows that the Spearman’s correlation coefficient (*r*-value) between subjective norms toward awareness is 0.036 with *p*-value of 0.701. According to the Moidunny (2009), the *r* value in this study is weak, means that the subjective norms in this study do not affect the awareness.

According to Bellet (2018), farmers are likely to follow the family decision and practise in farming. Moreover, a great influence in farmers towards the used of deworming are due to the behaviour of their family members and significant people (Bellet, 2018). They were greatly influenced by family and significant people. However, the previous study are contradict to this study because in this study most of the farmers stated that they have been practise the same way of handling the chicken for so many years thus they are not influenced by people around them.

Table 4.15: Spearman correlation of perceived behavioural control towards the awareness to avoid the misuse of antibiotic in chicken among farmers in Kelantan

Correlation coefficient (<i>r</i>)	Significant value (<i>p</i>)	Frequency (<i>n</i>)
0.526	0.000	118

Hypothesis 3

- There is significant and positive relationship between perceived behavioural control towards the awareness to avoid the misuse of antibiotics in chicken among farmers in Kelantan

Table 4.15 shows that the spearman’s correlation coefficient (*r*-value) between perceived behavioural control toward awareness is 0.526 with *p*-value of 0.000 <0.001. Hence it indicates that the hypothesis is accepted. According to Moidunny (2009), the *r* value in this study is moderate so there is a significant and positive relationship between perceived behaviour control towards the awareness of farmers in Kelantan to avoid the misuse of antibiotics.

Based on the study the farmers told that mostly they have high skills and knowledge that will affect the awareness to avoid the misuse of antibiotic. This statement was supported by Bellet (2018), that the farmers aware that it is important to have experience to improve their skills and knowledge. Other than that, the cost of antibiotics drugs may affect the purchase of antibiotics. The low cost of antibiotics may increase the possibility of buying the antibiotics may increase.

However, in this study the farmers did not overuse the antibiotics to avoid from spending more money on the animals if they get sick due to excessive antibiotics. This statement was proved based on the questionnaire that the ‘Irrelevant use of antibiotic will cause loss in money if the chicken sick’ with the high number of percentage which was 61.9 %.

4.7 The Most Influencing Factor Towards Awareness To Avoid The Misuse Of Antibiotic.

Table 4.16: Spearman’s correlation relationship between the factors and awareness to avoid the misuse of antibiotic in chicken among farmers in Kelantan.

Construct	R	p
Behavioural Attitude	0.520	0.000
Subjective Norms	0.036	0.701
Perceived Behavioural Control	0.526 ^{***}	0.000

Notes: ***significant at 0.1 level (2 tailed)

Based on the study, to test the strength of the correlation between the factors and farmer’s awareness, the Spearman’s correlation was used. To know the farmer’s awareness, observe the data of the Spearman correlation in which the strong the strength of the factor, the stronger the farmers awareness to avoid the misuse of antibiotic.

From the table 4.16 of the Spearman's correlation data, it had been shown that there was a high and strong positive relationship between factors of attitude towards awareness to avoid the misuse of antibiotic with r -value of 0.520 that can be categorised as moderate awareness.

The low r -value of 0.36 show that the awareness is not affected by the subjective norm. There is moderate relationship between perceived behaviour control and student's intention towards entrepreneurship with r -value of 0.526.

From the results obtained, perceived behavioural control has the strongest and the highest correlation impact to influence the farmers to have the high awareness. It can be supported by the debate since 1960 about the relationship between the use of antimicrobials in animal agriculture and the emergence of antimicrobial resistance in humans. (Podolsky, 2015; Begemann et al., 2018).

To relate with all the mentioned hypotheses before, hypothesis 3 which was related with the perceived behavioural control was accepted and also give the highest correlation. However to determine the most influencing factor that affect the awareness precisely, the regression linear model was applied.

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Table 4.17 The regression model

Model	Unstandardized Coefficients	Standardized Coefficient	Sig.	R	R Square	Adjusted R Square
	B	Beta				
1				.587 ^a	.345	.328
Constant	2.017		0.000			
Behavioural Attitude	0.473	0.448	0.002			
Subjective Norms	0.041	0.052	0.507			
Perceived Behavioural Control	0.089	0.154	0.287			

Dependent variable: Awareness

Note: *** significance level to >0.05

The table above show the value of coefficients of regression. The unstandardized coefficients (B) give information the number of units of awareness increases for a single unit increase in predictor. For example, one point increase on the behavioural attitude corresponds to 0.48 points increase on the awareness. Given only the scores on above predictors, the awareness can be predicted by computing.

While the R values denote the correlations between predicted and observed awareness. R square value denote the proportion of variance in awareness that can be explained by the three predictors which are the behavioural attitudes, subjective norms and perceived behavioural control.

$$AW = 2.02 + 0.47AT + 0.04SN + 0.09PBC$$

The table 4.17 show the reading of significant value of subjective norms was 0.507 indicates that it was not significant. Due to that, subjective norms predictor is

excluded from the computing formula. As for behavioural attitudes and perceived behavioural control is statistically significant since its p-value is smaller than 0.05 according to Rule of Thumb which is 0.002 and 0.0287 respectively. Thus the behavioural attitudes have the highest reading for b coefficients compare to perceived behavioural control and subjective norms, it indicates that behavioural attitudes is the most influencing factor towards the awareness to avoid the misuse of antibiotic. It can be concluded that the higher behavioural attitudes and perceived behavioural control is associated with higher awareness.

While from the table the R values has shown that $R = 0.59$ by which it can be considered as a high correlation. R square value which is 0.35 indicates the proportion of variance. Based from the value, it indicates that this model can precisely predict the awareness to avoid the misuse of antibiotic based on the independent variables.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

As a summary all the independent variables were explain specifically to relate with the awareness all the independent variables were explain specifically to relate with the awareness. The variables included attitude towards behaviour, subjective norms, perceived behaviour control were described individually with all the supporting studies. Thus the result of this study show that the awareness to avoid the misuse of antibiotic among farmers in Kelantan was high. Furthermore, the results obtained from the regression model had shown that the attitude towards behaviour is the most influencing variable towards the farmers' awareness.

There is few limitations from this study that being discovered during the process of conducting this research. Time constraints is one the limitations of this studies as it require a longer time reach at the farms. Most of the farm are quite hard to find due to some incomplete address. Researcher only able to go to five district due to shortage fund and transportation problem.

As a recommendation, the awareness among the farmers were already high but the social norms do not affect the awareness. The government can emphasize the awareness on antibiotic used in animal by organizing activity related with the use of antibiotic and advice the farmers to spread the awareness among them.

Keep adding the activities of transferring knowledge by extension agent so that the awareness can be develop more by the farmers and practice a good handling in fish business. In addition the government role is important in ensuring the awareness among farmers. The veterinarian as the most influential sources regarding the use of antibiotics as agreed by the respondent in this study should make a very good relationship with the farmers.

Next the future researcher should expand the sampling location to give more chances to other farmers to answer the survey. When the sample size is enlarge, the study will get a clearer and better picture of the opinion of whole farmers.

Apart from that, this study actually required a longer time to be conduct due to limited information regarding the address of the farm and the distance from one farm to another farm, so the future researcher are advisable to take a longer time to carry out this study.

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APPENDICES



THE AWARENESS TO AVOID THE MISUSE OF ANTIBIOTIC IN CHICKEN AMONG FARMERS IN KELANTAN.

KESEDARAN UNTUK MENGELAKKAN PENYALAHGUNAAN ANTIBIOTIK TERHADAP AYAM DALAM KALANGAN PENTERNAK AYAM DI KELANTAN.

Dear respondents:

- 1) This research is to:**
 - i. To identify the level of awareness to avoid the misuse of antibiotic in chicken among chicken farmers in Kelantan.**
 - ii. To examine the attitude, subjective norms and perceived behavioural control among chicken farmers towards awareness to avoid the misuse of antibiotic in chicken.**
 - iii. To analyses the relationship between attitude, subjective norms and perceived behavioural control among chicken farmers towards awareness to avoid the misuse of antibiotic in chicken.**
- 2) The information given is considered confidential.**
- 3) Please answer all questions.**
- 4) Thank you for your cooperation and information given.**

Kepada responden:

- 1) Kajian ini adalah untuk:*
 - i. menentukan tahap kesedaran untuk mengelakkan penyalahgunaan antibiotik terhadap ayam dalam kalangan penternak di Kelantan.*
 - ii. memeriksa sikap, norma subjektif dan kawalan tingkah laku yang dilihat di kalangan peternak ayam terhadap kesedaran untuk mengelakkan*

penyalahgunaan antibiotik terhadap ayam dalam kalangan penternak di Kelantan.

iii. *Menganalisis hubungan di antara sikap, norma subjektif dan kawalan tingkah laku yang dilihat dalam kalangan penternak ayam tentang kesedaran untuk mengelakkan penyalahgunaan antibiotik terhadap ayam dalam kalangan penternak di Kelantan.*

- 2) *Maklumat diberi adalah dianggap sulit.*
- 3) *Sila jawab semua soalan.*
- 4) *Terima kasih di atas kerjasama dan maklumat yang berikan.*

Researcher / Penyelidik:

- 1) Nur Zafirah Hani Binti Mohamad – 011-10773498
- 2) Cik Nurul Azwa Mohamed Khadri - 017-5748205

Fakulti Industri Asas Tani,
Universiti Malaysia Kelantan Kampus Jeli

SECTION A /SEKSYEN A: DEMOGRAPHIC / DEMOGRAFI

Please answer all questions and (√) the appropriate answer.

Sila jawab semua soalan dan (√) pada jawapan yang sesuai.

For the questions on PART B, C, D, and E please read each item and give your answer by circling the answer option that is appropriate to the scale of 1 (strongly disagree) to 5 scale (strongly agree).

Untuk soalan-soalan BAHAGIAN B, C, D, dan E, sila baca setiap item dan beri jawapan anda dengan membulatkan pada pilihan jawapan yang bersesuaian dengan mengikut skala 1 (sangat tidak bersetuju) hingga skala 5 (sangat setuju).

Strongly disagree /	Disagree / Tidak setuju	Average / Sederhana	Agree / Setuju	Strongly agree / Sangat setuju
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Sangat tidak setuju				
1	2	3	4	5

SECTION B / BAHAGIAN B: THE AWARENESS TO AVOID THE MISUSE OF ANTIBIOTIC IN CHICKEN / KESEDARAN UNTUK MENGELAKKAN PENYALAHGUNAAN ANTIBIOTIK TERHADAP AYAM .

Each statement below represents the awareness to avoid the misuse of antibiotic in chicken.

Setiap pernyataan di bawah mewakili kesedaran tentang risiko penyalahgunaan antibiotik terhadap ayam

In my opinion /Saya berpendapat :						
1.	The use of antibiotics according to prescribed prescriptions is important in chicken farming. <i>Penggunaan antibiotik mengikut preskripsi yang ditetapkan adalah penting dalam penternakan ayam.</i>	1	2	3	4	5
2.	I have knowledge about the antibiotics use in my chicken. <i>Saya mempunyai ilmu mengenai antibiotik yang digunakan didalam ternakan ayam saya.</i>	1	2	3	4	5
3.	I am exposed about the risk on misuse of antibiotics. <i>Saya didedahkan tentang risiko penyalahgunaan antibiotik</i>	1	2	3	4	5
4.	I do not use antibiotics for growth promotion in chicken. <i>Saya tidak menggunakan antibiotik untuk meningkatkan pertumbuhan ayam.</i>	1	2	3	4	5
5.	I assume that the overuse of antibiotic is not necessary in chicken farming.	1	2	3	4	5

<p><i>Saya mengandaikan bahawa penggunaan antibiotik secara berlebihan tidak diperlukan dalam pertanian ayam</i></p>						
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SECTION C/ SEKSYEN C: ATTITUDE / SIKAP

Each statement below represents your attitude and how they can affect and influence you to avoid using antibiotic.

Setiap pernyataan di bawah mewakili tingkah laku diri sendiri serta bagaimana ia akan mempengaruhi niat seseorang untuk mengelakkan penyalahgunaan antibiotik.

In my opinion/ Saya berpendapat :						
1.	<p>As a chicken farmers, it is important for me to avoid the misuse of antibiotic in chicken.</p> <p><i>Sebagai petani ayam, adalah penting bagi saya untuk mengelakkan penyalahgunaan antibiotik didalam ayam.</i></p>	1	2	3	4	5
2	<p>I believe the misuse of antibiotics may risk the health of the chicken</p> <p><i>Saya percaya penggunaan antibiotik mampu memberi risiko</i></p>	1	2	3	4	5
3.	<p>I believe by avoiding the misuse of antibiotic, I still can gain profit and guarantee a high performance of chicken production.</p> <p><i>Saya percaya dengan mengelakkan penyalahgunaan antibiotik, saya masih boleh mendapat keuntungan dan menjamin prestasi tinggi pengeluaran ayam.</i></p>	1	2	3	4	5

4.	I am comfortable to avoid the misuse of antibiotic by having good practice of chicken farming. <i>Saya berasa selesa untuk mengelakkan penyalahgunaan antibiotik dengan melakukan amalan pertanian ayam yang baik</i>	1	2	3	4	5
5.	I feel good when I decide to avoid the misuse of antibiotic in my chicken farming <i>Saya merasa senang apabila saya memutuskan untuk mengelakkan penyalahgunaan antibiotik di ladang ayam saya.</i>	1	2	3	4	5
6.	I am intending to be a good farmer by avoiding the misuse of antibiotic. <i>Saya berniat untuk menjadi peternak yang baik dengan mengelakkan penyalahgunaan antibiotik.</i>	1	2	3	4	5

SECTION D/ SEKSYEN D: SUBJECTIVE NORM/ NORMA SUBJEKTIF

Each statement below represents the subjective norm on what important people would think by avoiding the misuse of antibiotic.

Setiap pernyataan di bawah mewakili norma subjektif mengenai apa yang orang fikir sekiranya mengelakkan penyalahgunaan antibiotik..

In my opinion/ Saya berpendapat :						
1.	Other farmers encourage me to avoid from misuse the antibiotic in chicken. <i>Petani lain menggalakkan saya untuk mengelakkan penyalahgunaan antibiotik dalam ayam.</i>	1	2	3	4	5
2.	I am convince to use the antibiotic according to the correct prescription after attending	1	2	3	4	5

	<p>seminar or course conducted by responsible party.</p> <p><i>Saya berasa yakin untuk menggunakan antibiotik mengikut preskripsi yang betul setelah menghadiri seminar atau kursus yang dijalankan oleh pihak yang bertanggungjawab</i></p>					
3.	<p>Most people who are important to me approve my decision to increase my company performance by avoiding the misuse of antibiotics</p> <p><i>Kebanyakan orang yang penting kepada saya menghargai keputusan saya untuk meningkatkan prestasi perusahaan saya.dengan mengelakkan penyalahgunaan antibiotik.</i></p>	1	2	3	4	5
4.	<p>I believe by avoiding the misuse of antibiotics would increase the consumer confidence.</p> <p><i>Saya percaya dengan mengelakkan penyalahgunaan antibiotik dapat meningkatkan keyakinan pengguna.</i></p>	1	2	3	4	5
5.	<p>The most influential source of information on antimicrobial use was the veterinarian</p> <p><i>Sumber maklumat yang paling berpengaruh terhadap penggunaan antimikrobial adalah doktor haiwan</i></p>	1	2	3	4	5

**SECTION E/ SEKSYEN E: PERCEIVED BEHAVIORAL CONTROL/
TANGGAPAN KAWALAN TINGKAH LAKU**

Each statement below represents perceived behavioral control that show the statements regarding to the farmers abilities that can influence you to avoid the use of antibiotic.

Setiap pernyataan di bawah mewakili tanggapan kawalan tingkah laku yang menunjukkan pernyataan mengenai keupayaan penternak untuk mengelakkan penggunaan antibiotik.

In my opinion/ Saya berpendapat :						
1.	I had the skills and knowledge needed to use the antibiotic in chicken wisely. <i>Saya mempunyai kemahiran dan pengetahuan yang diperlukan untuk menggunakan antibiotik dalam ayam secara bijak.</i>	1	2	3	4	5
2.	I find it is easy to use antibiotics according to the guidelines. <i>Saya merasa mudah menggunakan antibiotik mengikut garis panduan</i>	1	2	3	4	5
3	Misuse or overuse of antibiotic will result in me getting into trouble with authority. <i>Penyalahgunaan atau penggunaan antibiotik yang berlebihan akan mengakibatkan saya mendapat masalah dengan pihak berkuasa.</i>	1	2	3	4	5
4	The improper use of antibiotics causes loss of money if the chicken is sick. <i>Penggunaan antibiotik yang tidak wajar menyebabkan kerugian wang jika ayam itu sakit.</i>	1	2	3	4	5

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1.0 Demographic frequency

Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	113	95.8	95.8	95.8
Female	5	4.2	4.2	100.0
Total	118	100.0	100.0	

Race

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Malay	112	94.9	94.9	94.9
Chinese	6	5.1	5.1	100.0
Total	118	100.0	100.0	

Agecat1

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	6	5.1	5.1	5.1
2	28	23.7	23.7	28.8
3	29	24.6	24.6	53.4
4	33	28.0	28.0	81.4
5	22	18.6	18.6	100.0
Total	118	100.0	100.0	

Education

	Frequency	Percent	Valid Percent	Cumulative Percent
PMR	8	6.8	6.8	6.8
SPM	58	49.2	49.2	55.9
Valid STPM/DIPLOMA	36	30.5	30.5	86.4
DEGREE	16	13.6	13.6	100.0
Total	118	100.0	100.0	

Experience1

	Frequency	Percent	Valid Percent	Cumulative Percent
1.00	9	7.6	7.6	7.6
2.00	28	23.7	23.7	31.4
3.00	28	23.7	23.7	55.1
Valid 4.00	23	19.5	19.5	74.6
5.00	15	12.7	12.7	87.3
6.00	15	12.7	12.7	100.0
Total	118	100.0	100.0	

Current_stock

	Frequency	Percent	Valid Percent	Cumulative Percent
1	109	92.4	92.4	92.4
2	1	.8	.8	93.2
Valid 3	4	3.4	3.4	96.6
4	2	1.7	1.7	98.3
5	2	1.7	1.7	100.0
Total	118	100.0	100.0	

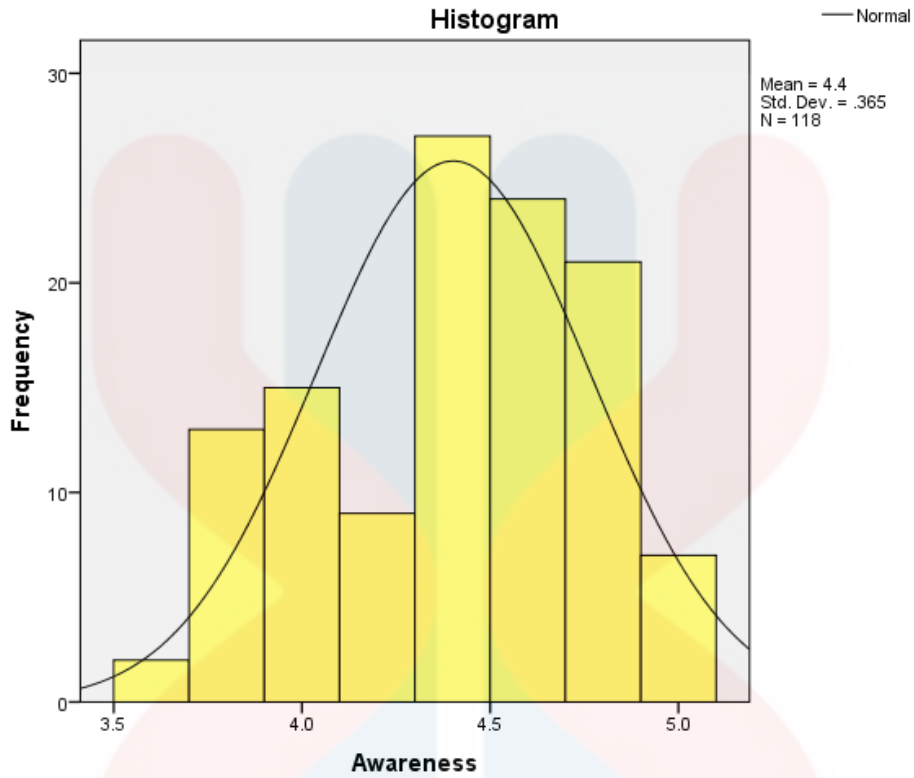
2.0 Normality test

Descriptives			Statistic	Std. Error
Awareness	Mean		4.40	.034
	95% Confidence Interval for Mean	Lower Bound	4.34	
		Upper Bound	4.47	
	5% Trimmed Mean		4.41	
	Median		4.40	
	Variance		.133	
	Std. Deviation		.365	
	Minimum		4	
	Maximum		5	
	Range		1	
	Interquartile Range		1	
	Skewness		-.340	.223
	Kurtosis		-.841	.442

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Awareness	.168	118	.000	.935	118	.000

a. Lilliefors Significance Correction

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Awareness

	Frequency	Percent	Valid Percent	Cumulative Percent
4	2	1.7	1.7	1.7
4	13	11.0	11.0	12.7
4	15	12.7	12.7	25.4
4	9	7.6	7.6	33.1
Valid 4	27	22.9	22.9	55.9
5	24	20.3	20.3	76.3
5	21	17.8	17.8	94.1
5	7	5.9	5.9	100.0
Total	118	100.0	100.0	

Statistics

Awareness

N	Valid	118
	Missing	0
Mean		4.40
Std. Deviation		.365

3.0 The Linear Regression

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.587 ^a	.345	.328	.299

a. Predictors: (Constant), PerceivedControl, SocialNorms, Attitude

Coefficients^a

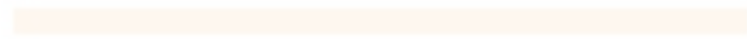
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.017	.459		4.389	.000
	Attitude	.473	.151	.448	3.125	.002
	SocialNorms	.041	.061	.052	.665	.507
	PerceivedControl	.089	.083	.154	1.070	.287

a. Dependent Variable: Awareness

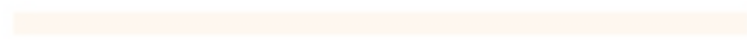




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