THE INFLUENCE OF COMPETENCIES ON JOB PERFORMANCE AMONG VETERINARY EXTENSIONISTS IN THE DEPARTMENT OF VETERINARY SERVICES MALAYSIA

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ABSTRACT

This study was conducted to investigate the influence of competencies (technical, communication and program development) on job performance among veterinary extensionists in the Department of Veterinary Services (DVS) Malaysia. A total of 188 respondents were involved in this survey. The questionnaire has 47 items and used a five point Likert scale. Each hypothesis was tested using Statistics Package for Social Science (SPSS) version 16. The data were analyzed using descriptive analysis and inferential analysis namely; t-test, one way ANOVA, correlation and regression. The results of the study showed that there are significant differences in job performance based on gender, age groups, experience and job placement except for job grade and education level. The study also found that competencies accounted for 71.0% of the variation in the veterinary extensionists' job performance. Communication competency is the best determinant followed by program planning competency and technical competency. Meanwhile, the program implementation competency and program evaluation competency showed no significant effect on job performance of the veterinary extensionists in the DVS Malaysia. It is recommended that the management should emphasize these three competencies (communication, program planning and technical) to be included in the training program of the veterinary extensionists.

Key word: Job Performance, Competency, Extension Service, Veterinary Extension

ABSTRAK

Kajian ini dijalankan untuk mengetahui pengaruh kompetensi (teknikal, komunikasi dan pembangunan program) terhadap prestasi kerja di kalangan pegawai pengembangan veterinar di Jabatan Perkhidmatan Veterinar Malaysia. Seramai 188 orang responden telah terlibat dalam kajian ini. Soal selidik yang dijalankan mempunyai 47 item dengan menggunakan skala Likert lima mata. Setiap hipotesis diuji dengan *Statistics Package for Social Science* (SPSS) versi 16. Data dianalisis menggunakan analisis deskriptif dan analisis inferensi iaitu ujian-t, ANOVA sehala, korelasi dan regresi. Hasil kajian menunjukkan bahawa terdapat perbezaan yang signifikan dalam prestasi kerja berdasarkan jantina, kumpulan umur, pengalaman kerja dan penempatan pekerjaan manakala tidak terdapat perbezaan signifikan berdasarkan gred jawatan dan tahap pendidikan. Kajian ini juga mendapati bahawa 71.0% varians di dalam prestasi kerja dapat diterangkan oleh kompetensi di mana kompetensi komunikasi adalah penentu yang terbaik diikuti oleh kompetensi perancangan program dan kompetensi teknikal. Sementara itu, kompetensi pelaksanaan program dan penilaian program tidak menunjukkan kesan yang signifikan ke atas prestasi kerja pegawai pengembangan veterinar di Jabatan Perkhidmatan Veterinar Malaysia. Adalah disyorkan bahawa pihak pengurusan perlu memastikan ketiga-tiga kompetensi tersebut (komunikasi, perancangan program dan teknikal) dimasukkan di dalam program latihan pegawai pengembangan veterinar.

Kata kunci: Prestasi Kerja, Kompetensi, Perkhidmatan Pengembangan, Pengembangan Veterinar

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Abbreviations		Meaning
AVO	=	Assistant Veterinary Officer
CC	=	Communication Competency
COR	=	Conservation of Resource
DVS	=	Department of Veterinary Services
GTP	=	Government Transformation Program
PCB	=	Public Complaint Bureau
PE	=	Program Evaluation Competency
PI	=	Program Implementation Competency
PP	=	Program Planning Competency
SD	=	Standard Deviation
TC	=	Technical Competency
VA	=	Veterinary Assistant

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Performance is not only a core concept in both work and organizational psychology, and possibly in the industrial-organization psychology, it is the most essential dependant variable (Schmidt & Hunter, 1992).

Sonnentag and Frese (2002) stated that for organizations to be able to achieve competitive advantage, they are in need of high performing individuals who are able to assist them not only to accomplish their goals, but to help them deliver the products they are specialized in. They commented further on the importance of performance to an individual as it shows the individual's ability to complete and execute tasks at a high level. Such accomplishment gives the individual satisfaction, a sense of mastery and pride. On the other hand, an individual's poor performance and failure to achieve goals may be deemed as unsatisfactory or seen as a personal failure.

Furthermore, organizations often acknowledge performance with monetary rewards and other remunerations. In the labour market, performance may not be the sole criterion for future career advancement and success, but it is undeniably the key as many who performed highly are promoted easily within the organization and have better career prospects compared to those who performed less (Van Scotter, Motowidlo & Cross, 2000).

However, to achieve good performance, individual needs certain competencies. Competency is knowledge, skills, and attitudes that can be improved through training and development (Lucia & Lepsinger, 1999). The definition of competency by Quinn, Faerman, Thompson, and McGrath (1990) indicated that competency is associated with the knowledge and skills for performing a particular task or project successfully. On the other hand, Burgoyue (1993) defined competency as the way an organization's goal is achieved by improving the performance of the members.

Furthermore, a study by Vermeeren, Kuipers and Steijn (2009) verified that job performance can assist in improving public organizations' service delivery. Hence, recognising the importance of performance, Leeuw (1996) stated that government agencies have turned their attention to job performance when formulating policies and improving the agencies' service delivery.

As for Malaysia, the initiation of public services transformation is one of the government's efforts to improve the delivery of public services.

1.2 Transformation of Public Services

Malaysia visualizes of being a developed nation by 2020, and in order to be a nation that is strong in both growth and development, high performing workforce is required. Subsequently, with the globalization of the world's economy, all countries including Malaysia have to be prepared to face the economic challenges. Due to this competitive atmosphere, the economy's driving sectors are highlighted. The service sector particularly becomes important as this sector could help improve the country's economy.

Therefore, Malaysia is committed and serious to implementing the transformation toward becoming a high-income nation and developed country by the year 2020. The launching of the Government Transformation Program (GTP) on January 28, 2010 by the Malaysia's Prime Minister is one of the initiatives taken by the government in achieving these objectives. The GTP was formulated with the aim of transforming the Government to be more effective in delivering results in areas of major concern of the public particularly in transforming the public service delivery to be more effective, efficient and accountability (Prime Minister Department, 2010).

However, this transformation programs could not be realized if the current civil servants are incompetent in performing their duties, since the measurement of success of an institution depends heavily on competent, trained and accountable workforce (Ferreira & Antwerp, 2011).

In realising this transformation effort, the efficient delivery of government services to the public is an effort of concern at this time. In line with the government's transformation program concept, '1 Malaysia, People First and Performance Now', all government agencies determined to realize the ideas pioneered by Malaysia's Prime Minister, Dato' Mohd Najib Tun Razak. Concurrently, the Department of Veterinary Services (DVS) is also committed to participating in this public service transformation agenda. One of the efforts taken is the transformation of the veterinary extension services.

1.2.1 Transformation of Veterinary Extension Services

Since its inception in 1888, the DVS' role has diversified not only as an agency that controls diseases of exotic and domestic animals but also to cater the demand of

various veterinary services. One of the services provided by DVS is the veterinary extension.

The veterinary extension could be considered as one of the most important and relevant services provided by DVS. It started in 1988 following the launching of the campaign of 'External Service Excellence'. Then, it was followed by the establishment of the task force on Veterinary Extension Program in 1990. In 1991, the implementation's concept, strategy and modus operandi of Veterinary Extension Program have been adopted, and the first meeting of Veterinary District Officers was held in June 1991 in Penang. Later, the veterinary extension services were further strengthened with the launch of the Veterinary Extension Manual in 1993.

In response to the public sector transformation initiative, DVS has launched the second edition of the Veterinary Extension Manual in the 2011. The main objective is to ensure that the veterinary extension remain relevant to the current situation. The manual aims to assist the veterinary extension agents in carrying out their tasks more efficiently in achieving the veterinary extension goal. The objective of the veterinary extension is to transform the livestock industry so that it could be the country's major contributor in achieving the goal of becoming a high-income nation in 2020.

In October 2013, at the 23rd Meeting of the Veterinary District Officers held in Pahang, it was agreed that new approaches should be adopted to increase the effectiveness of the Veterinary Extension Program. One of the approaches was to strengthen the capabilities of the people involved in implementing the program.

1.3 Research Problem

Unsatisfied customers often complained about the quality of the services provided by civil servants. This is proven as the Public Complaints Bureau (PCB) has received a high number of complaints every year as shown in Table 1.1.

Table 0.1

Complaints Received by the PBC from 2012 to 2013

No.	Category of Complaints	Total Complaints			
		2012	%	2013	%
1.	Delay / No Action Taken	5,879	46.9	4,274	43.3
2.	Unsatisfactory Quality of Services	1,837	14.6	1,750	17.7
3.	Unfair Action	1,406	11.2	1,115	11.3
4.	Failure in Enforcement	989	7.9	797	8.1
5.	Miscellaneous Complaints	879	7.0	705	7.1
6.	Lack of Public Amenities	787	6.3	569	5.8
7.	Failures to Adhere to Set Procedures	317	2.5	276	2.8
8.	Civil Servants Misconduct	222	1.8	201	2.0
9.	Abuse of Power / Misappropriation	160	1.3	148	1.5
10.	Inadequacies of Policy Implementation and Law	70	0.3	44	0.4
	Total	12,546	100	9,879	100

Source: Public Complaints Bureau, 2012 and 2013

In 2012 and 2013, a total of 12,546 and 9,879 complaints received respectively involving the Ministries and the States Government. The categories of complaints recorded were mainly dominated by complaints against delay or no action taken and unsatisfactory quality of services (PCB, 2012 & 2013). Although there was about 21% dropped in complaints received between 2012 and 2013, the number was still considered very high and it reflects the poor image of the government. Furthermore, there was an increase in percentage for the complaints against unsatisfactory quality of services from 2012 to 2013. Based on the complaints' characteristics, one of the contributing factors to these complaints was related to the civil servants' lack of skills.

Recently, the quality of veterinary services has been questioned by many senior veterinarians in the DVS and is being compared to the services' quality provided in the 1990s (DVS, 2013). The rising of complaints received by the department over the years could explain this situation. In 2013, there are about 215 complaints received by the department which mainly involve quality of services (DVS, 2013). These complaints also reflect the department's poor image. This is a serious issue as the department has been trying to reduce the number of complaints each year based on the KPI targeted by the DVS.

Furthermore, based on the veterinary extension program annual reports prepared by the Veterinary State Department, the top management of DVS found that the quality of the veterinary extension services is also declining. Of late, due to the advancement of information and communication technology (ICT), the farmers are more exposed to the information and are considered more knowledgeable. Therefore, the veterinary extension agents' failure to give appropriate feedback to the farmers in resolving their problems is unacceptable anymore. The lack of competencies of the extension agents in providing relevant services was considered as one of the factors.

Rahim (2005) stated that the extension services' effectiveness relied on qualified extension agents who know their roles and competency. Various competencies have been identified in past studies, and they are needed by extension agents to carry out their functions effectively either in technical or important human developmental areas (Khalil et al., 2008; Thach, 2008; and Tiraieyari et al., 2010).

In agricultural extension's context, most international studies focus on extension system's evaluation and methodology instead of the competencies of the extension

personnel. For example, economic evaluation of extension system's performance (Bindlish & Evenson, 1993), the impact of economy on extension system of agriculture extension (Birkhaeuser, Evenson & Feder, 1991) and performance indicators of paid-extension system's measurement (Dinar & Keynan, 1998). However, a research that focuses on extension workers' competencies and how those competencies are use in extension service delivery to improve performance is rarely found.

Even though there were various studies carried out on agricultural extension (e.g. Shah, Asmuni, & Ismail, 2013; Tiraieyari et al., 2009; Khalil et al., 2008; Thach, 2008; Karbasioun, Mulder, & Biemans, 2007), the study particularly on veterinary extension, especially in Malaysian context, is still inadequate.

Therefore, this study aims to fill the gap by providing relevant information especially on veterinary extensionists' competencies and job performance by investigating the competencies needed by the veterinary extensionists to do well in their tasks or duties. The competencies needed by the veterinary extensionists are the technical, communicative and program development competencies which are very important for them to implement the Veterinary Extension Program (DVS, 2011).

1.4 Research Questions

This study will address the following research questions:

1. Are there differences in job performance based on demographic factors?
2. Do competencies (technical, communication and program development) have a direct relationship with veterinary extensionists' job performance?

1.5 Research Objective

The objectives of this study are:

1. To determine the differences in job performance and demographic factors.
2. To examine the direct relationships between competencies (technical, communication and program development) and job performance.

1.6 Scope of the Study

This study was conducted among veterinary extensionists in the Department of Veterinary Services, Malaysia. Data were collected from the assistant veterinary officers (G27-G40) and veterinary assistants (G17-G26) who are directly involved with the implementation of the Veterinary Extension Program from four states; namely Johor, Selangor, Perak and Terengganu.

1.7 Significance of the Study

This study aims to examine whether competency is able to influence the veterinary extensionists' job performance. Besides that, it also highlights the differences in job performance based on demographic factors. Thus, the findings of the present study are able to explain the influence of competencies on job performances particularly in the aspect of the veterinary extension. Apart from that, the differences in job performances and demographic factors are also known. Therefore, the study would generate significant new knowledge in the field of the veterinary extension in Malaysia particularly and could be used as reference by future researchers.

In terms of practical contributions, the findings of this study could provide DVS the benefits in knowing the relevant competencies needed by the veterinary extensionists involved in implementing the Veterinary Extension Program. Therefore, DVS could improve these competencies by conducting proper in-service training programs to improve the job performances of the veterinary extensionists. Furthermore, clarifying important competencies could be used as a guide for new veterinary extensionist to understand the requirements of this position.

1.8 Definitions of Key terms

The following definitions are used for the purpose of this study.

1.8.1 Job Performance

Muchinsky (2003) defined job performance as a set of worker's conduct that can be observed, measured and evaluated to the achievement of an individual level. Apart from that, these behaviors are also in agreement with the organization's objectives.

1.8.2 Competency

Competencies, defined by Cooper and Graham (2001) are knowledge, skills, or abilities required of the job. The competencies needed by the veterinary extensionists are based on their job descriptions which involved four discipliness of veterinary extension; namely farm economics, knowledge on extension, preventive medicine and also information and communication technology (DVS, 2011).

1.8.2.1 Technical Competency

The technical competency for the veterinary extensionists is the knowledge, skills and abilities of all four veterinary extension disciplines as stated in the Veterinary Manual Program (DVS, 2011).

1.8.2.1 Communication Competency

Veterinary extensionists' communication competency covers knowledge, skills and communicative abilities. This is required as they need to convey the extension learning activities and practices to the farmers using individuals, groups and mass communication methods (Khalil, 2008).

1.8.2.3 Program Development Competency

Tiraieyari (2009) defined program development competency as the knowledge and skills needed by the extension agents in order to help them plan, implement and evaluate the extension programs. Furthermore, Tiraieyari (2009) divided the program development competency into three sub competencies; program planning, program implementation and program evaluation competencies.

1.9 Organization of the Thesis

This thesis is comprised of five chapters. Chapter 1 covers the introduction of the study by presenting the background of the study followed by the problem statement, the research questions, scope of the study, the significance of the study and also the definitions of the key terms used. Chapter 2 provides the literature reviews related to job performance, competency, the relationship between job performance and

competency as well as the model used in this study. Chapter 3 presents the methodology used in the study. Chapter 4 focusses on the results of the data analysis. Finally, chapter 5 presents the discussion and conclusion of the study. It also includes the implications of the study.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter aims to provide some relevant literature in regard to the theoretical and empirical studies related to this study. This chapter is organized as follows; firstly, it reviewed the past studies that are relevant and related to this study. Secondly, it evaluated the findings of the past with regards to this study and explained what has been achieved and the competencies needed by the veterinary extensionists. Thirdly, the research framework is constructed based on the literature review and fourthly, the research hypothesis is concluded based on the research framework. Lastly, a summary concludes the chapter.

2.2 Job Performance

There are many definitions of job performance. Campbell (1990) defined performance as behaviours or actions relating to the goals of the organization which including three explanations: 1) work performance shall be defined in terms of behaviour rather than results, 2) work performance includes only those behaviours are relevant to the organizational goals, and 3) work performance is multidimensional. As for Rotundo and Sackett (2002), they theorised job performance as 'actions and behaviours that are under the control of individuals who contribute to the goals of the organization'.

Viswesvaran and Ones (2000) defined performance as actions that are scalable, behaviour and results that workers' bring that are related and contributes to the organization's objectives. Sonnentag and Freese (2002) described the individual performance as an individual's measurable behaviour related to organizational goals and its characteristics are multidimensional and dynamic in nature.

Performance is usually discussed in the context of the behaviour of the leader, inspiration, job scheme, objectives, and in most of the other major area of research organizations. For example, the term of performance is widely used in all areas of management which uses terms such as performance management measurement (Armstrong 2006) and evaluation or assessment (Murphy & Cleveland, 1995).

There were many studies on job performance being explored by various scholars either from the west or east. Most studies conducted on job performance are about its relationship with job satisfaction. It is because of job satisfaction will eventually give the utmost impact on the individual's job performance (Anuar Hussin, 2011). The study by Nimalathasan (2010) on bank employees showed that there was a positive link between job satisfaction which was represented by variables of promotion, salary and job situations with job performance. Siggins (1993) asserted that ways should be sought not only to reduce stress and prevent burnout as maintaining a sufficient level of interest and job satisfaction among employees to ensure high levels of performance is as essential.

This view is also supported by Anuar Hussin (2011), who identified that job satisfaction in aspects of promotion, job characteristics, supervision and colleagues, showed a positive connection with job performance. However, the study on 115

respondents in the Klang Valley has demonstrated a negative relationship between job satisfaction in the aspect of salary and job performance.

Ojo (2009) conducted an empirical study to assess how the corporate culture impacts the employees' performance in the Nigerian banking industry. This study focuses on knowing whether corporate culture can affect job performance and in what situations it occurs. Results of studies using random sampling techniques showed that 57.7 % of the respondents strongly agree that the corporate culture affects their job performance, while 48.7 % of respondents also agree that the corporate culture could determine the level of an organization's productivity.

Moreover, Muhammad, Ziauddin, Farooq and Ramay (2010) examined the impact of the organizational's commitment to the achievement of workers involving a sample of 153 employees of oil and gas from the private and public sectors. Results showed that there was a positive connection between organizational commitment and job performance.

Another study by Abdul Shukur, Noran Fauziah and Merusak (2002) was conducted among 245 secondary school teachers in relation to motivation and job performance. Their results showed no significant difference between groups of respondents when comparing the overall job motivation with job performance. However, when comparing the achievement motivation and job performance, the results showed that the group of teachers have high achievement motivation.

2.2.1 Measurement of Job Performance

Job performance was measured in numerous ways in various previous studies. K-State Cooperative Extension Services (2006) conceptualized the extension agents' performance by eight dimensions: quality of work, quantity of work, reliability, work schedules, work distribution, self-confidence and self-control, organization, and customer's satisfaction. In his study, Thach (2008) measured job performance using the K-State concept. However, Khalil (2008) adapted the K-State concept but only used six dimensions in his study: quality of work, quantity of work, extension agents' reliability, extension activities' feedback, extension activities' attendance and farmer's satisfaction.

As for Tiraieyari (2009), she measured the extension agents' performance in the Malaysian Agriculture Department using the Role Base Performance Scale (RBPS Model) which has 11 dimensions; quantity of work, quality of work, punctuality, work effectiveness, knowledge and skills, policy implementation or procedures and direction, effective communicative skills, managing ability, disciplines, pro-activeness and innovative and relationship and co-operation.

In another study, Hisham (2013) measured job performance based on three dimensions developed by Salmiah (2004) which were work effectiveness, work efficiency and service quality.

According to Terziovski and Dean (1998), the quality of work is viewed as the most effective dimension effecting the employee's performance as quality of work's improvement in quality of work is likely to show an increase in productivity, performance and profits. The performance measures for the quality of extension

workers and assess their abilities to perform the objectives of the extension programs and outcomes sets in the programs. Quantity of work refers to the completion of an assigned task within the stipulated time limits while the attendance of the extension activities refers to the extension agents' readiness to work on a well-timed basis and participating in all extension activities and training sessions too (Khalil et al., 2008).

Based on these past studies, there are various dimensions used to measure job performance. Nevertheless, to establish the content dimensions of job performance, Viswesvaran (2001) suggested that content dimensions of the job performance constructs with comprehensive specification should be attained by organizing all the job performance measures that have been used in the extant literature. Following this, the researcher has examined all dimensions used in the past research and then selects the dimensions that fit the veterinary extensionists' job performance.

Therefore, for the purpose of this study, only some of the above performance criteria were used, namely quality of work, quantity of work and extension activities' attendance. These dimensions were chosen because they are probably the best dimensions that could explain the veterinary extensionists' job performance.

2.3 Demographic Factors

One of the factors that affect work performance is demographic changes (Palakurthi and Parks, 2000). However, there were only a few studies that focus on the demographic factors and how it impacts job performance in Malaysia. Gender, age, organizational tenure, job position and ethnicity are among the demographic variables studied.

2.4 Competency

Boyatzis (1982) defined competency as a group of related knowledge, skills and attitudes (KSAs) that affects one's job and job performance. As the extension agents' performances are being studied, their competencies can be used as an observable or quality outcome of a performance. Boyatzis (2008) further defined competency as a capability or ability. This means that competency is a different set of behaviours that is related and organized around an underlying constructs, called 'intent'. The behaviours are alternate manifestations of the intent, as appropriate in many situations or times.

Extension agents' competencies and its importance have been widely recognized as extension service performance's explanations. To manage the use of human, capital and material resources in an agriculture extension organization's management, skilled extension agents are needed to achieve extension services' objectives (Linder, 2001; Karbasioun & Mulder, 2004).

2.3.1 Competency of Veterinary Extensionist

Rigyal and Wongsamun (2010) observed that the extension services' delivery in Bhutan came under heavy criticism due to the extension agents' inefficiency and lack of technical competency. Boyd (2003) stated having strong technical knowledge makes extensionists successful.

Belay and Abebaw (2004) stated that customers are able to adopt higher technology better when the extensionists have sufficient technical knowledge. Easter (1985) opposed that one of the past approaches' weaknesses was in preparing extension staff

in developing countries to focus on professional competence's development. Similarly, Raad, Yoder and Diamond (1994) argued that the extension agent should possess professional competence in the areas of administration, program planning and execution, evaluation, communication, teaching and extension method and understanding human behaviour.

Tiraieyari et al. (2010) concluded that out of the nine competencies studied in the Department of Agriculture which include cultural competency, program evaluation competency, SALM certificate competency and social competency, four competencies influenced the extension workers' job performance. According to Issahaku (2014), the competencies in the area of interpersonal relations, communication, personal qualities and technical knowledge dominated most competencies' frameworks and competencies' literature.

According to the Veterinary Extension Manual (DVS, 2011), the veterinary extensionists' job descriptions of are based on the four disciplines including preventive medicine, extension knowledge, farm economics and information system. Therefore, the technical competency needed by the veterinary extensionists should cover all four disciplines while communication competency is needed for the veterinary extensionists to interact and disseminate relevant information, technology and skills to clients. Program planning, implementation, and evaluation are among several job descriptions of the veterinary extensionist. The veterinary extensionist is expected to plan, implement and evaluate the extension program that he or she is conducting.

Based on these literature reviews, there are many competencies that the veterinary extensionists should have. However, for the purpose of this study, only these competencies were studied, namely technical, communication and program development (planning, implementation and evaluation).

2.3.1.1 Technical Competency

To do an extension's job, extensionists have to be competent in different aspects of the job. One of the aspects is the technical knowledge required for the job. This is usually done during the extensionists' professional training. Extensionists provide information to assist clients in making decisions. The technical advice probably applies more directly to the clients' production activities and what course of action should be taken to improve or sustain this production.

According to Khalil and Ismail (2009), technical competencies include understanding adult learning process, career development theories and understanding techniques, competency identification, computer competence, electronic systems, evaluation, media selection skills, objectives preparation, training and development theories, understanding techniques and research skills.

Boyd (2003) stated that strong technical knowledge should be possessed by effective extensionists. Similarly, Belay and Abebaw (2004) pointed out extensionists with adequate technical knowledge is able to help more customers adopt technology.

Furthermore, Rahim et al. (1990) identified several factors on why Malaysian smallholders' have low level of technology adoption. One of the reasons is extensionists' lack knowledge and skills on current rubber technology. These

extensionists must be competent in areas of technology and have to access the knowledge bases necessary to maintain their competencies.

Today, extensionists are faced with many new technology knowledge bases that are being developed both at home and abroad. These new knowledge must be conveyed to the clients systematically through educational programs. Therefore, veterinary extensionists' technical competency should be upgraded and made relevant to the current situation.

Based on the literatures, technical competency comprises of many skills and knowledge, based on a particular job or task. Therefore, in this study, the technical knowledge for the veterinary extensionists is based on the job descriptions that covered all four veterinary extension disciplines, namely preventive medicine, extension knowledge, farm economics and information system technology (DVS, 2011).

2.3.1.2 Communication Competency

Communication is a huge component of an extension agent's job. They play their roles and what they do is beyond only sharing ideas, giving advice and information. The extensionists with good communication skills could influence the farmers and the decisions made. These eloquent extension agents are able encourage farmers to interact with their counterparts, share ideas, problems and work together as a community.

Communication, according to Oakely and Garforth (1985) and any acts of it, such as making a speech in a meeting, a written report, a radio broadcast or queries from a

farmer should contain four important elements. The first element is the idea or information's source and where it is from; second is message or the relayed information; channel or how the information is being relayed is the third element and the fourth element is the information's receiver. For an extension agent, being knowledgeable of these four elements of communication is crucial as the knowledge enables them to act effectively to the farmers.

Moreover, Texas A&M University System (2005) affirmed that the extension agents' social skills such as their ability to establish with effective working relationships with various groups of people like their colleagues, supervisors, volunteers, clients and leaders of the community determined the level of their performances. Van den Ban and Hawkins (1988) mentioned further that the extension agents' ability to establish external contact has a significant impact of the results and increases the extension work's effectiveness. Finally, Tai (2011) stressed out that communicative skills plays a critical role to ensure the effectiveness of job performance, advancement of careers, and an organization's success.

Consequently, communication competency is an important skill for veterinary extensionist as it enables them to interact better with their clients and colleagues, convey extension message accurately and write good extension reports.

2.3.1.3 Program Development Competencies

Tiraieyari et al. (2009) defined program development competency as the knowledge and skills extension agents need to plan, implement and evaluate extension programs. In addition, McCaslin and Tibezinda (1997) stated that program development is a continuous process of evaluating farmers' need. This includes choosing suitable

content and methods in programming delivery, handling program delivery and assessing program process and outcomes.

Moreover, program development, as described by Boone (1985), is a proactive process that is both comprehensive and systematic. The rationale of the program being in a continuous sequence of specific educational activities is to facilitate changes in the learners' behaviours and the environment they live in. In other words, the entire development of the extension program ensures that the program is made up of a continuous series of steps, interconnected processes that extension agents need to be aware of. It is fully theoretical and practical understanding is crucial as it enables the agents to achieve the agriculture extension service's missions and objectives.

Reviewing models of adult and extension education, Boone (1985) and Seevers et al. (1997) further reaffirms that planning and design, implementation, and evaluation are the three main components of the program development process.

2.5 Demographic Factors and Job Performance

Job performance is based on an individual's age (Yearta & Warr, 1995; Skirbekk, 2003; Smedly & Whitten, 2006; Shultz & Adam, 2007), gender (Megat Aman et al., 2007; Green, Jegadesh & Tang, 2009; Fauzilah, Noryati & Zaharah, 2011), educational level (Ng & Feldman, 2009; Hayrol Azril & Jejak Uli, 2010), length of service (Ismail, Loh, Mohd Na'heim, Faizzah & Ali, 2009), job position (Lee & Benedict, 2009; Roebuck et al., 1995).

A study by Yearta (1995) showed that a sales person's job performance is not affected by age, however Smedley and Whitten (2006) revealed that age is a possible factor in

determining the job performance of small and medium enterprises' entrepreneurs and workers. Additionally, Shultz and Adam (2007) highlighted the significant differences in work performance between age groups. In two different views, Birren and Schaie (2001) disagreed with Kujala et al., (2006), who mentioned that younger people have poor job performance.

Green et al. (2009) revealed that female analyst has better job performance compared to male analyst in share firms. On the contrary, studies by Crawford and Nonis (1996) and Shaiful Anuar, et al. (2009) reported that there gender does not have any notable effect on job performance.

While Linz (2002) stated that job performance is not affected by an individual's level of education, McBey and Karakowsky (2001) found that there is a possible connection between education level and job performance. Ariss and Timmins (1989) further agreed by stating that education does have an effect on job performance. They found that the people with lower education lever are more likely to perform less in their jobs.

Another variable studied, apart from age, gender and level of education, is job position. Lee and Benedict (2009) found that there are significant differences between top managers' and middle managers' job performance, indicating that job position do have a major impact on job performance. On the contrary, a study by Roebuck et al., (1995) showed that there are no notable differences in job performance between different positions within the organization.

A study conducted by Hisham (2013) found that in Malaysia's Ministry of Defence, the supporting staff's job performance is affected by their length of service, level of

education and gender. Tai (2011), on the other hand, who based the study on demographic factors namely gender, age groups, job, found no significant differences in job performance position and job experiences among custom officers in the Royal Malaysian Customs Department.

2.6 Competencies and Job Performance

The link between job performance and competencies is both known and established. Competency, related to performance, means that competent extension workers, are able to perform better. Dhanakumars (2001) and Linders (2001) both mentioned the positive relation between job performance and extension competencies. Similarly, Armstrong (2003) too stated that competencies are contributing factors to a high leveled individual and organizational performance. Hence, for an extension organization to improve and serve their clients better, Liles and Mustian (2004) suggested that a set of competencies that incorporates the competencies into training for extension workers should be developed.

Furthermore, Khalil et al. (2009) stated that in Yemen, competencies namely program planning, program implementation and program evaluation contributed significantly to extension agents' performance. Tiraieyari et al. (2009) concluded that there are four competencies, i.e. cultural competency, program evaluation competency, technical competency and social competency and these competencies influenced the Malaysian Department of Agriculture's extension workers' job performance. A study by Thach, Maimunah, Jejak and Khairuddin (2007) found that there are four significant individual factors that contributed to extension agents' job performance in Vietnam. The factors are social skills, program implementation skills, motivation, and program

planning skills. In these studies, one of the social skills aspects is the communication skill.

2.7 The Underpinning Theory

There are many theories of performance that has been studied by various scholars. However, in this study, the conservation of resources (COR) theory is used to explain the study's framework.

2.7.1 Conservation of Resources (COR) Theory

The COR theory is a general motivation theory which is based on the collection, protection, investment and replenishment of personal resources (Hobfoll, 1989). COR theory suggests that people are motivated to obtain and safeguard resources. Resources are anything that they hold personal; they may be objects, situations, personal characteristics, and energy.

COR theory has received a lot of empirical validation, especially through investigations on stress and job burnout (Halbesleben, 2006; Halbesleben & Buckley, 2004). The extensive use of COR to understand the workers' stress and burnout has stunted the development of other relevant COR investigation outside those narrow contexts (Hobfoll, 2001).

Apart from that, COR theory also has been used to explain how resources are invested (Halbesleben & Bowler, 2007). Hobfoll (2001) suggested that as resources are obtained, they are invested to attain additional resources. For example, as people develop workplace skills, those skills are often capitalised or manipulated in job

performance to gain other resources, such as income and better status in the organization. COR theory suggests that workers use their resources in ways that will enable them to make the most of their return in a way that is specific to the resources invested. Therefore job skills are often capitalised in the workplace (Hobfoll, 2001).

Importantly, the COR researchers also found that resources do influence employees' job performance (Wright & Cropanzano, 1998). The strong connection between resources and job performance has been explored mainly in the context of resources losses or replenishments. Loss of resources may affect employees' motivation and lead to a decrease in employees' overall performance (Halbesleben & Buckley, 2004; Hobfoll, 2001; Wright & Cropanzano, 1998).

Therefore, this study will investigate the investment of resources in the context of personal resources; i.e. the competencies of the veterinary extensionists. According to the COR theory, the veterinary extensionists, with relevant competencies or skills, are motivated to perform well in their jobs or tasks compared to those who lack required competencies. Thus, job performance of the competent veterinary extensionists should be superior to those who are less or not competent.

2.8 Theoretical Framework

Based on the literature reviews, the theoretical framework of this study is as in Figure 2.1.

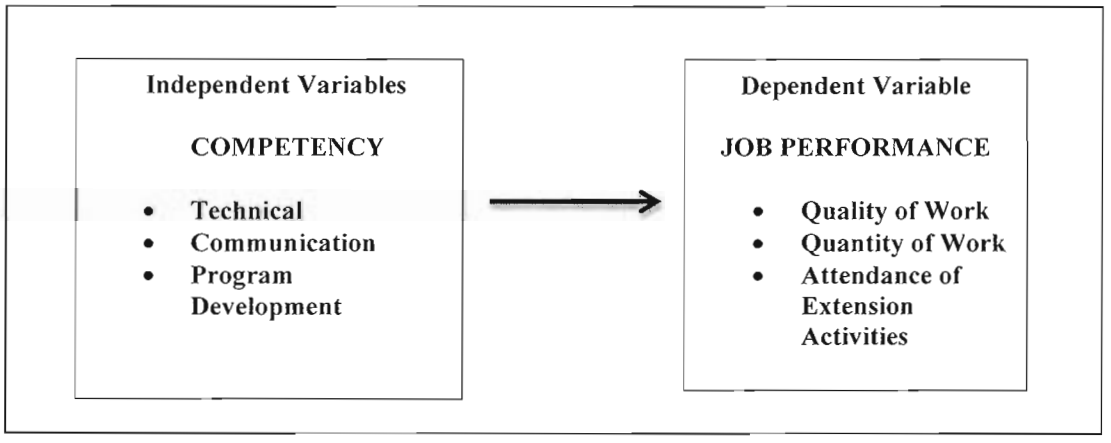

Figure 0.1

The Theoretical Framework

2.8.1 The Dependent Variable

Job performance is the dependent variable and it is measured in three dimensions; namely quality of work, quantity of work and the attendance of extension activities. The performance measures the quality of extension workers' ability to assess, to perform the objectives of extension programs and fulfil outcomes set in the programs. Quantity of work refers to the completion of assigned work within the prescribed time limits. As for the attendance of extension activities, it refers to the extension agents' willingness to work on a timely basis and their readiness to participate in extension activities, training sessions and regular stay on the daily job. All these dimensions are used to sum up overall job performance.

2.8.2 The Independent Variables

Based on the competency needed by the veterinary extensionists (DVS, 2011), the independent variables used in the study are technical competency, communication competency and program development competency.

2.9 Research Hypotheses

Hair, Black, Robin and Anderson (2010) stated that hypothesis testing is a process of testing hypothesis by establishing null or alternative hypotheses, collecting sample data, calculating statistics from the sample, and applying numerical methods to derive conclusive findings on the hypotheses. As hypotheses are unverified statements, testing hypotheses is needed (Malhotra, 2004).

Based on the literature reviews and the research framework, the proposed hypotheses for this study are as the follows:

2.9.1 Hypothesis 1

H_1 There is significant differences in job performance and demographic factors (gender, age groups, job grade, job experience, education level and job placement).

$H_{1.1}$ There is significant differences in job performance and gender

$H_{1.2}$ There is significant differences in job performance and age groups

$H_{1.3}$ There is significant differences in job performance and job grade

$H_{1.4}$ There is significant differences in job performance and job experience

$H_{1.5}$ There is significant differences in job performance and education level

$H_{1.6}$ There is significant differences in job performance and job placement

2.9.2 Hypothesis 2

H_2 Competencies (technical, communication, program development) are positively and significantly related to job performance.

$H_{2.1}$ Technical competency is positively and significantly related to job performance.

$H_{2.2}$ Communication competency is positively and significantly related to job performance.

$H_{2.3}$ Program development competency is positively and significantly related to job performance.

$H_{2.3.1}$ Program planning competency is positively and significantly related to job performance.

$H_{2.3.2}$ Program implementation competency is positively and significantly related to job performance.

$H_{2.3.3}$ Program evaluation competency is positively and significantly related to job performance.

2.10 Summary

This chapter reviewed literatures of the past studies on job performance and competency. The COR theory was also discussed in this chapter. The theoretical framework was further explained and finally, the hypotheses of this study were developed and would to be tested in the study.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter focuses on various methods and procedures used to arrive at the findings of this research. It consists of research design, research subjects, research instrument, data collection procedures and finally statistical analysis techniques.

3.2 Research Design

According to Babbie (2004), field survey is possibly the best method for social scientists who are interested in collecting original data that describes a population too large for direct observation. Thus, this research was designed as a cross-sectional field survey, where questionnaires were used for data collection at one point in time. The method is convenient, characterizes by its wide coverage in terms of outreaching the intended respondents in a relatively shorter time, and saves cost.

The study conducted was a descriptive correlation study. Descriptive correlation research combines both descriptive and correlational studies. Descriptive statistics were used including means, standard deviations, and percentage distribution. Pearson correlation and multiple regression analysis were used to determine the correlation and contribution of independent variables in predicting the job performance of veterinary extensionists.

3.3 Population and Sampling

The population of this study comprised of all staff who are directly involved with the implementation of the Veterinary Extension Program in Department of Veterinary Services, Malaysia. The research subjects were constituted of assistant veterinary officers and veterinary assistants.

This study employed a stratified sampling method. Peninsular Malaysia is divided into four regions: Northern region, Central region, Eastern region and Southern region. Northern region consist of four states namely Perlis, Kedah, Pulau Pinang and Perak. The central region is made up of Selangor and Negeri Sembilan. Pahang, Terengganu and Kelantan made up the Eastern region while the Southern region is made up of Melaka and Johor. For this study, one state was randomly selected from each region. Perak is selected for the northern region, Selangor represents the central region, Terengganu and Johor represent in the eastern and southern regions respectively. These states were chosen because they have achieved good veterinary extension service performance compared to other states in their region (DVS, 2013). The performance was assessed by the Veterinary Extension Committee based on the annual report prepared by the states involved.

The numbers of veterinary extensionists in these four states are 523 and based on Krejie and Morgan (1970), the sample size of 523 is about 220. Then, the respondents were randomly selected from the name list of veterinary extensionists which was obtained from the State DVS involved in this study. In order to obtain the correct representative of sample size from each state, the proportionate stratified random sampling was used. The total number of respondents is shown in Table 3.1.

Table 3.1

The Proportionate Stratified Random Sampling

States	**No. of staffs**	**Krejie & Morgan (1970)**
Perak	142	60
Selangor	115	48
Terengganu	145	61
Johor	121	51
Total	523	220

3.4 Data Collection Procedure

A drop and pick method was employed to determine a rate with higher responses compared to the mailed questionnaire. To collect data, first, the list of names of veterinary extensionists in four states was acquired from the respective DVS. From the list, the numbers of veterinary extensionists needed from each state was randomly selected. The respondents were selected systematically by selecting the names that were odd numbered in the name list. This process continued until the researcher had obtained the exact sample size needed from each state.

Those names identified are attached with an approval letter from DVS together with the research schedule was faxed to the four states' DVS. Then, the researcher travelled to those states to administer the questionnaire. The researcher met with the State's Veterinary Extension Coordinator and the respondent to explain the research's proposes and procedures in answering the questionnaire. The final version of the questionnaire was distributed to the respondents and they were given approximately 30 minutes to answer the questionnaire before returning the questionnaire.

3.5 Research Instrument / Questionnaire

Questionnaire is used by this study as an instrument to collect data from the respondents. A questionnaire with five sections was adopted and summarized as in Table 3.2. Self-rating is used as an established source of performance information. Performance self-rating, compared to supervisors' appraisal, is more lenient. Farh and Werbel (1988) however found that self-rating in performance evaluation was highly equated with supervisory rating. Self-ratings were found to be as strict as supervisory rating for all performance dimensions and in the areas of job performance evaluation. The sample of the questionnaire used in this study is attached in **Appendix 1**.

Table 3.2

Content of Questionnaire

Section	Construct	Dimensions	Items
A	Demography	Age, Gender, Education, Job Grade, Job Placement & Working Experience	6
B	Job Performance	Adopted from study of Khalil (2008) and Thach (2008)	17
C	Technical Competency	Adopted from study of Tiraieyari (2009) (Knowledge based on the Veterinary Extension Manual)	15
D	Communication Competency	Adopted from study of Khalil (2008)	12
E	Program Development Competency	Adopted from study of Tiraieyari (2009) and Thach (2008)	15

3.5.1 Job Performance

The measurement of job performance was adopted from Khalil (2008) and Thach (2008). There were three dimensions used to measure job performance in this study. The dimensions contains seventeen (17) items and the dimensions used were; quality of work (7 items), quantity of work (5 items) and attendance of extension activities (5 items). As for hypotheses testing, this study used the overall job performance by summing up all the dimensions rated.

3.5.2 Technical Competency

The measurement of this competency was adopted from a study conducted by Tiraieyari (2009). The technical competency was based on four disciplines in the veterinary extension program. The four disciplines were preventive medicine, farm economics, extension knowledge, and information system. There were 15 items used to measure an individual's technical competency.

3.5.3 Communication Competency

This competency was measured based on the instrument adapted from Khalil (2008) study. There were 12 items used to measure this competency.

3.5.4 Program Development Competency

These competencies measurement was adapted from a study by Thach (2008) and Tiraieyari (2009). 15 items were used for this measurement.

3.5.5 Demographic Profile

There were six demographic factors used in this study which included gender, age groups, job grade, job experience, education level and job placement.

3.6 Translation of Questionnaire

The questionnaire was prepared in both English and Malay languages. Firstly, the original questionnaire was prepared in English. Then, the back translation technique was used to translate the entire questionnaire into Malay language to help respondents understand the questionnaire better. The back translation method was used to ensure equivalence of measure is achieved in both Malay and English (Brislin, 1970). This was done with the help of experts who are well versed in both Malay and English languages from the Faculty of Modern Language and Communication, Universiti Putra Malaysia. The researcher had a few discussions with the translators to ensure that the intended meanings were maintained each time after the translation was conducted. A comparison was made between the original version of the English language questionnaire and the back translated questionnaire. There were no further major rewording needed for any particular items suggested in the back translated questionnaire. Similar back translation technique was used in a study conducted by Chandrakantan (2009) who investigated the influence of team member resources and structures in initial emergency response performance of fire fighters in Malaysia.

3.7 Measurement of Variables

This study used a Likert scale in order to obtain a statistical measure in Section B, C, D and E. According to Keegan (2009), the Likert scale was developed by Likert

Rensis that measured attitude. Likert scale provides better advantage for a researcher because this scale is easy for a researcher to construct and administer, and it also assists respondent to understand the scale (Malhotra, 2006). This questionnaire has been designed using a five point Likert Scale as indicated in Table 3.3.

Table 3.3

The Likert Scale

No of Scale	Scale
1	Strongly Disagree
2	Disagree
3	Uncertain
4	Agree
5	Strongly Agree

3.8 Pilot Test

The pilot test was conducted in order to investigate the questionnaire's is reliability. As for this study, the pilot test was conducted in Johor Bahru, Johor on the 16th-19th September during a Veterinary Extension Convention. There were 30 respondents involved and they are either the assistant veterinary officers (AVO) or veterinary assistants (VA) who were responsible in the implementation of the Veterinary Extension Program. The reliability test result is tabulated in Table 3.4. All Cronbach Alpha values for the pilot study were above .7, meaning that the instrument used were reliable.

Table 3.4

Reliability Statistics for Pilot Study

Variables	Pilot test Alpha	Previous study Alpha
Competency		
Technical Competency	.877	.873
Communication Competency	.745	.920
Program Planning Competency	.758	.896
Program Implementation Competency	.746	.919
Program Evaluation Competency	.711	.938
Job Performance	**.902**	

3.9 Data Analysis Techniques

The data of this study was analysed using quantitative methods. In this research, *Statistical Package for the Social Science* (SPSS) version 16.0 was used to analyse the data. Descriptive statistics is a method used by researchers to compile and interpret the raw data (Malin and Birch, 1997) because it is one of the easiest methods to apply. This statistic is a technique that uses a raw data. The raw data is later summarized or processed in a more concise form. In this research, the data collected from the survey was tested using statistical techniques such as descriptive analysis. It represents analysis of demographics and test of mean, reliability test, normality test, correlation analysis and multiple regression analysis. The statistical analysis results are shown at **Appendix B**.

3.9.1 Descriptive Analysis

Descriptive analysis is applied by the researcher to perform frequency analysis and identify the mean test. In order to start the analysis in this study, the researcher will analyse the frequency distribution of respondents demographic. A frequency analysis is tabular information obtained from the set of data and information from the survey.

It shows the value and percentage of the data efficiently. Pursuant to Oosterbaan (1994), this analysis is important as it is used to predict the frequency of certain figures or values of variables. It can also be used to evaluate a forecast's reliability. Using this analysis, it enables researcher to organize and summarize the data effectively and systematically. Usually, the analysis is used to measure the data of respondent's demography.

3.9.2 Reliability Test

In general, reliability refers to a research instrument measurement's ability in measuring the research variables based on the samples. According to Salkind (2006), reliability of data occurs when a test measures the data repeatedly and still produces the same results. There are many measurement methods that can be used to determine the reliability coefficient of an instrument. Reliability of a questionnaire was tested using Cronbach's Alpha procedures, based on the model of internal consistency.

According to Hair et al. (2010), they noted that the closer the Alpha value is to 1, it indicates a high level of reliability (Cronbach's Alpha ≥ 0.90). If the Alpha value is less than 0.6, it can be assumed that the instrument used in the study have low reliability (Cronbach's Alpha ≤ 0.60). If the value of Alpha is more than 0.70 (Cronbach's Alpha = 0.70 to < 0.90) it is a good and acceptable reliability. The reliability value (Cronbach Alpha) can be summarised as Table 3.5.

Table 3.5

The Cronbach Alpha Value

Alpha	Significant Value
< 6.0	Weak
0.6 - < 0.7	Moderate
0.7 - < 0.8	Good
0.8 - < 0.9	Very Good
≥ 0.9	Excellent

Source: Hair, et.al. (2010)

3.9.3 Normality Test

With reference to Hair et al. (2010), normality test is one of the requirements for inferential analysis. It is conducted to ensure that the data obtained from the survey is approximately or normally distributed. The normality assumption is crucial when constructing intervals for variables (Royston, 1991). Many steps can be done in order to test the normality such as kurtosis, skewness, histogram, *stem-and-leaf* plot and *boxplot* to prove that the data distributed in the survey is normal. However, the normality test for this study is based on kurtosis and skewness' values.

3.9.4 T-test and One Way ANOVA

The t-test and one way ANOVA is carried out to compare the means between two or more categories. The t-test is meant for comparing two means while the one way ANOVA compares more than two means. In this study, the t-test and one way ANOVA is carried out to compare the mean of job performance based on demographic factors; namely gender, age groups, job grade, job experience, education level and job placement of the respondents.

3.9.5 Correlation Analysis

The analysis of Pearson's correlation is used to measure between two or more variables. It is carried out to see whether it has significant relationship and either positive or negative correlations of relationship (Sekaran, 2003). In theory, this analysis demonstrated the correlation coefficient, symbolized by *r,* in which the value is between -1 and +1. The researcher indicated that the scale outlined by Hair et al. (2010) that can be applied to interpret the relationship between two variables as shown in Table 3.6.

Table 3.6

The Coefficient Scale and Relationship of Correlation

Coefficient Scale	Relationship Strength
± 0.91 - ± 1.00	Very Strong
± 0.71 - ± 0.90	Strong
± 0.41 - ± 0.70	Moderate
± 0.21 - ± 0.40	Weak
± 0.01 - ± 0.20	Very Weak

Source: Hair et.al. (2010)

3.9.6 Multiple Regression Analysis

Multiple regression analysis refers to bivariate correlation expansion. Due to the two or more independent variables used by the researcher to make a prediction towards dependent variables, the multiple regression analysis was appropriate and used in the study. The result of regression is the figures that determined whether dependent variables have prediction to independent variables or not. Thus, it can be measure whether independent variables are able to influence the dependent variables or not. The summary of all the data analysis techniques is tabulated in Table 3.7.

Table 3.7

Summary of Data Analysis Technique

	Hypotheses	Statistical Analysis
H 1	There are significant differences in job performance based on demographic factors	t-test one way ANOVA
H 2	Competencies (technical, communication, program development) are positively and significantly related to job performance	Pearson Correlation Multiple Regression

3.10 Summary

This chapter has discussed in detail regarding the methodology and data collection used in this research. It covered research design in depth, how and where this study was conducted in a quantitative research method using field survey. The population and sampling technique was elaborated; the measurement of instruments used and also data collection procedure was also discussed. Then, pilot test was presented followed by the data analysis techniques.

CHAPTER 4

RESULTS AND FINDINGS

4.1 Introduction

This chapter presents the study's findings based on the research objectives as described in Chapter 1. In addition, the researcher also explained the findings from the statistical analysis including the interpretation of data that have been analysed and the results for research hypotheses. The data obtained were analysed by using the software of *Statistical Package for the Social Science (SPSS)* version 16.

4.2 Survey Response Rate

Out of a total 220 questionnaire distributed, only 200 questionnaires were returned by the respondents. Table 4.1 below summarized the response rate of the respondents.

Table 4.1

Sample Study Response Rate (n = 188)

Questionnaire response	Frequency	Rate
Number of questionnaires distributed	220	100.00
Returned questionnaires	200	90.91
Usable questionnaires	188	85.45

The response rate was 90.91% but the usable questionnaire's rate was 85.45% respectively. Chua (2012) stated that the acceptable response rate is from 51.0% to 77.0%. The unusable questionnaire was due to incompletion and many answers were missing. According to Sekaran (2003), if more than 25% of the respondents did not answer fully, the questionnaire has to be removed from the analysis. From the usable

questionnaire, the data is transferred to the SPSS version 16 for further analysis. The analyses done were both descriptive and inferential analysis.

4.3 Demographic Descriptive

Demographic information was collected from participants, which included data on gender, age, job grade, education level, working experience and job placement. Table 4.2 shows the demographic profile of the participants. As shown in the table, majority of the participants were male (70.2%). About half of the respondents had a minimum of less than ten years' of working experience (54.2%), and half of them were below 35 years old (52.2%). Close to half of them had a diploma (43.1%) and majority of them (70.7%) worked as assistant veterinary officers, i.e. job grade of G26-G40. In general, the description of the sample of study mirrored somewhat the characteristics of the general population of veterinary extensionists in the Department of Veterinary Services, Malaysia. These results indicated that the sample of this study appeared to be the representatives of the veterinary extensionists' population in the Department of Veterinary Services, Malaysia. The demographic descriptive results are attached in **Appendix 4**.

Table 4.2

Respondents' Demographic Profile (n = 188)

Item	Classification	Frequency	Percentage
Gender	Male	132	70.2
	Female	56	29.8
Age	18-25 years	24	12.8
	26-35 years	74	39.4
	36-45 years	21	11.2
	46-55 years	51	27.1
	More than 55 years	18	9.6
Job Grade	18-26	55	29.3
	27-40	133	70.7
Job Experience	1-5 years	60	31.9
	6-10 years	42	22.3
	11-15 years	10	5.3
	16-20 years	21	11.2
	21-25 years	9	4.8
	>25 years	46	24.5
Educational qualification	SPM	25	13.3
	Certificate	61	32.4
	Diploma	81	43.1
	Degree	21	11.2
Job placement	Johor	44	23.4
	Selangor	40	21.3
	Perak	53	28.2
	Terengganu	51	27.1

4.4 Reliability Test

Sekaran (2003) stated that the reliability of a measurement shows consistency and stability of instruments used in a research. Therefore, the reliability test was carried out earlier to ensure the reliability and consistency of every item in the research instrument of the study. The result is summarized in Table 4.3.

Table 4.3

The Cronbach's Alphas of the Study Variables (n = 188)

No. of items	Variables	Alpha	Items dropped
15	Technical Competency	.898	-
12	Communication Competency	.773	-
5	Program Planning Competency	.720	-
5	Program Implementation Competency	.718	-
5	Program Evaluation Competency	.836	-
17	Job Performance	.914	-

The results of the reliability test in this study appeared acceptable. Internal consistency of the scales ranged from .718 (program implementation competency) to .914 (job performance), signifying that the specified indicators were sufficient for use (Hair et al., 2010). The result suggests that the variables were appropriate for further analysis. The full reliability analysis result is attached in **Appendix 5**.

4.5 Descriptive Analysis

Table 4.4 presents the summary of means of the independent variables and dependent variables. The mean for independent variables were between 3.82 (communication competency) and 4.10 (technical competency). On the other hand, the mean of dependent variable was 3.88.

Table 4.4

Descriptive for Major Variables (n = 188)

Variables	Mean	SD
Technical Competency	4.10	.37
Communication Competency	3.82	.37
Program Planning Competency	4.00	.44
Program Implementation Competency	3.99	.45
Program Evaluation Competency	4.05	.46
Job Performance	3.88	.45

Note: All items used a 5-point Likert scale with (1=Strongly Disagree and 5=Strongly Agree)

The standard deviation (SD) describes the spread or variability of the sample distribution values from the mean, and is perhaps the most valuable index of dispersion (Hair et al., 2010). If the estimated standard deviation is large, the responses in a sample distribution of numbers do not fall very close to the mean of the distribution. If the estimated standard deviation is small, the distribution values are close to mean (Hair et al., 2010). In other words, if the estimated standard deviation is smaller than 1, it means that the respondents were very consistent in their opinions, while if the estimated standard deviation is larger than 3, it means the respondents had a lot of variability in their opinions (Hair et al., 2010).

All competencies were perceived to be high, ranging from 3.82 to 4.10. The mean values for the competencies were as follows: communication competency (Mean=3.82, SD=.37), program implementation competency (Mean=3.99, SD=.45), program planning competency (Mean=4.00, SD=.44), program evaluation competency (Mean=4.05, SD=.46), and technical competency (Mean=4.10, SD=.37). This suggests that the veterinary extensionists perceived that their job involved high technical skills which include farm visit activities such as providing required treatments to farm animals and giving appropriate advice to farmers.

4.6 The Normality Test

The normality test of the data is conducted by measuring the skewness and kurtosis before further analysing the data. According to Hair et al., (2010), the data is normal if the skewness is between -2.0 to 2.0 and kurtosis is between -7.0 to 7.0. Table 4.5 represents the results of the normality test of all the items. The normality test results include the histogram attached in **Appendix 3**.

Table 4.5

The Normality Test

Variables	Skewness	Kurtosis
TC	.669	.022
CC	-.140	.078
PP	.253	-.104
PI	.199	.569
PE	-.043	.605
JP	.306	.023

Based on the results, the skewness and kurtosis of the variables in this study are within the acceptance value and the data is considered approximately normal distributed.

4.7 T- test results

The t-test analysis was conducted to compare mean score between two groups or categories. In this study, t-test analysis was done to examine the differences in job performance based on gender and job grade. The followings Table 4.6 and Table 4.7 showed the results of the t-test analysis. The complete results of the t-test analysis are attached as **Appendix 6**.

Table 4.6

Differences in job performance by gender (n=188)

Variable	Male (Mean)	Female (Mean)	t-value
Job Performance	3.97	3.78	2.386*

*p<0.05

Table 4.7

Differences in job performance by job grade (n=188)

Variable	VA (Mean)	AVO (Mean)	t-value
Job Performance	3.96	3.90	.869

*p<0.05
Note: VA = veterinary assistant (G17-G26); AVO = assistant veterinary officer (G27-G40)

Based on Table 4.6, there was a significant difference in job performance based on gender (t = 2.386, p <0.05). The male veterinary extensionists were perceived to have better job performance compared to the female veterinary extensionists. However, based on Table 4.7, there was no significant difference in job performance based on job grade. Both the VA and AVO were perceived to have an equal job performance.

4.8 One Way ANOVA

This analysis was done to investigate the differences of job performance based on age, job experience, highest education and job placement. Since these four demographic factors have more than two groups or categories, the one way ANOVA was conducted. If the result is significant, the *Post hoc* analysis is conducted to determine the differences in the groups. The complete analysis is presented in **Appendix 7**.

The followings Table 4.8 to Table 4.11 summarized the one way ANOVA results of the respective respondents in job performance based on age groups, job experience, education level and job placement.

Table 4.8

Differences in Job Performance by Age Groups (n=188)

Variable	18-25 years old (Mean)	26-35 years old (Mean)	36-45 years old (Mean)	46-55 years old (Mean)	>55 years old (Mean)
Job Performance	3.81^{ab}	3.82^{ab}	3.61^{a}	4.04^{b}	4.48^{c}

Means with the same superscripts are not significantly different; means with different superscripts are significantly different at $p< 0.05$.

Based on Table 4.8, there was a significant difference in job performance based on age groups. The veterinary extensionists aged more than 55 years old have a higher job performance compared to the other age groups.

Table 4.9

Differences in Job Performance by Working Experience (n=188)

Variable	1-5 years (Mean)	6-10 years (Mean)	11-15 years (Mean)	16-20 years (Mean)	21-25 years (Mean)	≥ 25 years (Mean)
Job Performance	3.77^{a}	3.76^{a}	3.82^{b}	4.18^{b}	4.13^{b}	4.09^{b}

Means with the same superscripts are not significantly different; means with different superscripts are significantly different at $p< 0.05$.

Table 4.9 shows that there was a significant difference in job performance based on job experience. The veterinary extensionists with more than 10 years working

experience have better job performance compared to those with less working experience.

Table 4.10

Differences in Job Performance by Education Level (n=188)

Variable	SPM (Mean)	Certificate (Mean)	Diploma (Mean)	Bachelor (Mean)
Job Performance	3.80[a]	3.99[a]	3.95[a]	3.72[a]

Means with the same superscripts are not significantly different; means with different superscripts are significantly different at $p < 0.05$.

Based on Table 4.10, there was no significant difference in job performance based on education level. All veterinary extensionists had an equal job performance regardless of their education background.

Table 4.11

Differences in the Job Performance by Location (n=188)

Variable	Johor (Mean)	Selangor (Mean)	Perak (Mean)	Terengganu (Mean)
Job Performance	4.18[b]	3.92[a]	3.85[a]	3.76[a]

Means with the same superscripts are not significantly different; means with different superscripts are significantly different at $p < 0.05$.

Table 4.11 shows that the job performance was significantly different based on the job location of the respondents. The veterinary extensionists in Johor had a higher level of job performance compared to those in other states.

4.9 Pearson's Correlation Analysis

As for the correlation analysis, the results were attached in **Appendix 8**. Table 4.12 presents the summary of relationships between the independent variables and dependent variables. In general, the relationship between all variables was significant. Strong correlation level represented 80.0% of the total number of correlations while the moderate level of correlation was 20.0%. The result indicated no serious multicollinearity between independent variables or all study variables because the Pearson correlation indicators for all independents variables were less than .8. The highest correlation between all independent variables was r=.721 ($p<.01$) between communication competency and program implementation competency.

Table 4.12

Intercorrelations between Variables of Competencies and Veterinary Extensionists' Job Performance (n=188)

	TC	CC	PP	PI	PE	JP
TC	1.000					
CC	.700**	1.000				
PP	.556**	.579**	1.000			
PI	.691**	.721**	.601**	1.000		
PE	.644**	.616**	.592**	.493**	1.000	
JP	.732**	.750**	.686**	.690**	.630**	1.000

Note.
TC = technical competency; CC = communication competency; PP = program planning competency; PI = program implementation competency; PE = program evaluation competency; JP = job performance
** Correlation is significant at the .01 level (2 tailed).

The highest correlation in the correlation matrix between the independent variables and dependent variables was r=.750 ($p<.01$) between communication competency and

job performance. Despite the significance of this correlation, the coefficient was not large and would not cause a problem with collinearity (Cooper & Schindler, 2006).

4.10 Regression Analysis

To understand the relationship between competencies and veterinary extensionists' performance, a multiple regression analysis was conducted. The complete analysis was attached in **Appendix 9**.

The results, as demonstrated in Table 4.13, showed that the regression equation with all the predictors was significant (R = .842, R^2 = .710, adjR^2 = .702, F (5,182) = 88.93, p < .001). In other words, the multiple correlation coefficients between the predictors and the dependent variables were .842; all these predictors (competencies) accounted for 71.0% of the variation in the veterinary extensionists' job performance. The generalizability of this model in another population was .702. The value of R^2 dropped to only .008 (about 8%) in the adjR^2 which indicates that the cross validity of this model was fine.

The significant F-test revealed that the relationship between dependent variables (job performance) and independent variables (competencies) was linear and the model significantly predicted the dependent variable. Based on these findings, H2 is partially supported. It means that only technical competency, communication competency and program planning competency are able to influence overall job performance of the veterinary extensionists. Meanwhile, the other two competencies; program implementation competency and program evaluation competency did not influence the overall job performance.

Table 4.13
Multiple Regression Analysis: Competencies and Job Performance (n= 188)

Independent variables	**Standardized beta**
Technical Competency	.240**
Communication Competency	.312**
Program Planning Competency	.264**
Program Implementation Competency	.118
Program Evaluation Competency	.068
F value	88.93
R	.842
R^2	.710
Adjusted R^2	.702
Durbin Watson	2.23

Note: Dependent variable = Job Performance (JP)
**p< 0.01

Among the five predictors, communication competency (Beta= .312, t= 4.781, Sig. = .000) had the highest and significant standardized beta coefficient, which indicates that communication competency was the most important variable in predicting the veterinary extensionists' job performance. The other important predictor in descending order was program planning competency (Beta= .264, t= 4.749, Sig. = .000) and technical competency (Beta= .240, t= 3.903, Sig. = .000).

On the other hand, program implementation competency (Beta= .118, t= 1.844, Sig. = .067) and program evaluation competency (Beta= .068, t= 1.241, Sig. = .247) were insignificantly related to job performance.

4.11 Hypotheses Testing Summary

The summary of the hypothesis testing is tabulated in Table 4.14. The t-test and one way ANOVA results explained that there were significant differences in job performance based on demographic factors namely; gender, age groups, job experience and job placement of the veterinary extensionists. However, there were no significant differences in job performance based on job grade and education level. Therefore, H1 is partially supported.

Pearson correlation and Multiple Regression coefficient explained that there were positive and significant relationship between communication competency, technical competency and program planning competency and job performance. In contrast, the program implementation competency and program evaluation competency did not have positive and significant relationship with job performance. Hence, H2 is partially supported.

Table 4.14

The Summary of Hypotheses Testing

	Hypotheses	Statistical analysis	Results
H 1	There are significant differences in job performance and demographic factors (gender, age groups, job grade, job experience, highest education and job placement).	t- test one way ANOVA	Partially Supported
H 1.1	There is significant differences in job performance and gender	t- test	Supported
H 1.2	There is significant differences in job performance and job grade	t-test	Rejected
H 1.3	There is significant differences in job performance and age groups	one way ANOVA	Supported
H 1.4	There is significant differences in job performance and job experience	one way ANOVA	Supported
H 1.5	There is significant differences in job performance and highest education	one way ANOVA	Rejected
H 1.6	There is significant differences in job performance and job placement	one way ANOVA	Supported
H 2	Competencies (technical, communication, program development) are positively and significantly related to job performance	Pearson's correlation Multiple regression	Partially Supported
H 2.1	Technical competency is positively and significantly related to job performance	Pearson's correlation Multiple regression	Supported
H 2.2	Communication competency is positively and significantly related to job performance	Pearson's correlation Multiple regression	Supported
H 2.3	Program development competency is positively and significantly related to job performance	Pearson's correlation Multiple regression	Partially Supported
H 2.3.1	Program planning competency is positively and significantly related to job performance	Pearson's correlation Multiple regression	Supported
H 2.3.2	Program implementation competency is positively and significantly related to job performance	Pearson's correlation Multiple regression	Rejected
H 2.3.3	Program evaluation competency is positively and significantly related to job performance	Pearson's correlation Multiple regression	Rejected

4.12 Summary

In this chapter, the researcher discussed the hypothesis tested that has been formed to implement the analysis related to the variables of the research. The research findings showed that there were significant differences in job performance based on demographic factors such as gender, age groups, working experience and job placement. However, there were no significant differences in job performance based on job grade and education level. Based on these findings, H1 is partially supported.

As for the influence of competencies on job performance, there were significant and positive influences of communication competency, technical competency and program planning competency on job performance. Nevertheless, there were no significant influences of program implementation competency and program evaluation competency on job performance. Based on the results, H2 is partially supported.

CHAPTER 5

DISCUSSION AND RECOMMENDATIONS

5.1 Introduction

This chapter reviews and discusses the results of the data analysis. Next, discussions of the findings are highlighted. Finally, the recommendation and conclusion will be given based on the research findings.

5.2 Recapitulation of the Study's Findings

There are two main objectives of this study which are to determine the differences in job performance based on demographic factors as well as to examine the relationships between job performance and competencies. Hence, two research questions were proposed to attain the main objectives of the study:

1. Are there differences in job performance based on demographic factors?
2. Do competencies (technical, communication and program development) have a direct relationship with the veterinary extensionists' job performance?

For the purpose of this study, data were gathered from two groups: veterinary assistants (VA) and assistant of veterinary officers (AVO). Respondents from both groups are attached to DVS in four different states; Johor, Selangor, Perak and Terengganu. A number of 220 questionnaires were distributed. Out of this number, only 188 were found to be usable and were analysed in this study. The internal consistency of the measures was tested by computing Cronbach's alpha. Finally, the

hypotheses were tested using t-test, one way ANOVA and multiple regressions. The findings of this study indicated that all hypotheses were partially supported.

Results from t-test and one way ANOVA showed that hypothesis 1 was partially supported. Of the six sub hypotheses, four were supported. There were significant differences in job performance and demographic factors (gender, age groups, job experience and job placement). In contrast, job performance was not influenced by job grade and education level.

Multiple regression result showed that hypothesis 2 was partially supported. Specifically, sub-hypotheses 2.1 and 2.2 were supported, whereby sub-hypothesis 2.3 was partially supported. In the sub-hypothesis 2.3, only the sub-sub-hypothesis 2.3.1 was supported while sub-sub-hypotheses 2.3.2 and 2.3.3 were rejected. Technical competency, communication competency and program planning competency were found to have a significant and positive relationship with job performance. In contrast, program implementation competency and program evaluation competency were insignificantly related to job performance.

Communication competency (Beta= .312, t= 4.781, Sig. = .000) had the most impact on job performance followed by program planning competency (Beta= .264, t= 4.749, Sig. = .000) and technical competency (Beta= .240, t= 3.903, Sig. = .000), respectively. The findings of this study also demonstrated the non-relationship between program implementation competency and program evaluation competency

5.3 Discussion

The discussion of the study will divided into two sections as the followings.

5.3.1 Demographic Factors and Job Performance

Based on the findings, there are significant differences in job performance based on gender, age groups, job experience and job placement of the veterinary extensionists in the Department of Veterinary Services Malaysia. However, there are no significant differences in job performance based on job grade and education level.

Based on these findings, the male veterinary extensionists have better job performance compared to female veterinary extensionists. This contradicted with the study conducted by Green, Jegadesh and Tang (2009) who revealed female analyst has better job performance compared to their male counterparts in the share firms. This may be due to the nature of the veterinary extension's work. The veterinary extension's work suits the males better compared to the female as it requires the veterinary extensionist to perform many farm visits, work long hours and be involved in many extension activities. On the other hand, studies conducted by Crawford and Nonis (1996) and Shaiful Anuar, et al. (2009) reported that gender does not have a significant impact on job performance.

In this study, the results showed that job performance is not affected by job grade or job position. The finding was supported by Roebuck et al. (1995), who found out that there are no differences in terms of work performance between different positions in an organization. On the contrary, a study by Lee et al. (2009) revealed that there is a difference in work performance between top managers and middle managers.

On the difference in job performance based on the age groups, it is concluded that the veterinary extensionists that aged 55 years old and above performed better compared to those below 55 years of age. This is supported by Shultz and Adam (2007); Smedley and Whitten (2006), and Kujala et al., (2005) who stated that there were significant differences in work performance between different age groups. It is clearly understood that those senior veterinary extensionists have had a lot of exposure, had gone various trainings and certainly could execute the work better. However, a study by Yearta (1995) and Birren and Schaie (2001) showed that age does not affect work performance.

As for the difference of job performance based on job experience, the veterinary extensionists with more than 10 years of service have better job performance compared to those less working experience. With the various exposure and experience, there is no doubt that the senior veterinary extensionists are more capable and perform better compared to those with less experience and exposure. This finding is supported by Hisham (2013) in his study on the job performance of the supporting staff of the Ministry or Defence, who found that an individual's length of service contributed significantly to the individual's work performance.

Further, the results also showed that there is no difference in job performance based on education level, which is in line with the findings by Linz (2002). However, McBey and Karakowsky (2001) found that there is a causal relationship between education level and work performance. Similarly, Ariss and Timmins (1989) indicated that education level at some point may affect work performance. They assumed that an individual with less education has the tendency to underperform at work.

Based on the location of the respondents, the findings showed that the veterinary extensionist in Johor are perceived to have better job performance compared to those in other states. The results could probably due to that the veterinary extensionists in Johor have higher skills, better working conditions and work culture compared to those in other states. Further investigation should be carried out to confirm the explanations.

However, all of these findings are contradicted to the study by Tai (2011) who found out that job performance is not significantly different based on demographic factors, namely gender, age groups, job position and job experience among custom officers in the Royal Malaysian Customs Department. The difference may be due to the nature of respondents' work that was clearly different from the work discussed in the current study.

5.3.2 Relationships between Competencies and Job Performance

Regression analysis indicated that only technical competency, communication competency and program planning competency had a positive and significant relationship with job performance. However, program implementation and evaluation competencies did not influence job performance. Communication competency influenced the job performance most, followed by program planning competency and technical competency. Thus, based on the findings, it can be assumed that veterinary extensionists who possessed those competencies will perform better compared to those who are lacking.

These findings supported the positive contribution of extension competency variables to job performance, which is similar to Ashton (1996), who in his study, found that

competencies were effective predictors of job performance. The findings of this study are also supported by Khalil et al. (2009), who found that program planning, program implementation and program evaluation competencies influence job performance of agricultural extension agents in Yemen.

However, this study found that program planning influenced the job performance of veterinary extensionists, but not the other two competencies (program implementation and program evaluation). The difference of the findings may be due to the demographic factors and culture of the respondents. It also could be due to the different job descriptions between agricultural extension agents and veterinary extensionists.

Apart from that, the study was also in line with Thach (2008) and Tiraieyari (2009), who indicated that competencies influenced the job performance of agricultural extension agents in Vietnam and Malaysia respectively. Thach (2008) found out that competencies like social skills, program implementation skills, motivation and program planning skills notably influenced the job performance of agricultural extension agents in Mekong Delta, Vietnam.

As for Tiraieyari (2009), her study revealed that the cultural competency, program evaluation competency, technical competency in SALM certificate and social competency are the best predictors of the job performance for the agricultural extension agents in the Department of Agriculture, Malaysia.

5.4 Limitation of the Study

There are a few limitation of this study as the followings;

5.4.1 The Respondents

In this study, the respondents are the veterinary assistants (G17-G26) and the assistant veterinary officers (G27-G40) working in the states. However, in implementing the Veterinary Extension Program, the veterinary officers (G41 and above) are also involved. Therefore, this study could not generalize the population of the veterinary extensionists including the veterinary officers involved in the program.

5.4.2 Time Constraint

One of the limitations of the study is time constraint. The researcher was only given about three months to complete this research and submit the study. Thus, the researcher needs to put in more effort and spend time efficiently in order to finish the study based on the time frame given. If given more time, the research may show more conclusive and useful information.

5.5 Recommendation

The study was able to emphasize several important things that some parties need to be concerned of. Thus, this part will illustrate the division of research implication into two categories. They are managerial implication and future research implication.

5.5.1 Managerial Implication

The current study found out that communication, technical and program planning competencies are the predictors of the veterinary extensionists' job performance. The job performance of the veterinary extensionists can be improved if they have high level in these three competencies. The findings contribute towards the human resource management activities, such as the importance of providing training. Training, as defined by Blanchard and Thacker (1999), is a complete process of developing knowledge, skill and ability for current and future jobs. Therefore, the veterinary extension managers should consider including these competencies in the veterinary extensionists' training program as such training will help the extensionist to improve their job performance. Furthermore, this will give the opportunity to the veterinary extensionists to strengthen their competencies.

The studies also found out that the veterinary extensionists' job performance are significantly different based on gender, age groups, working experience and location. Therefore, the management should identify the reasons and should take measures to improve their staff. As for age groups and working experience, the management should ensure that these three competencies are incorporated in the training modules for the new and younger generation of veterinary extensionists. This is because it is proven that these competencies are lacking in the younger generation and among those with less working experience. The difference in job performance based on location should be able to give sufficient information on the how other states should implement the extension program. Hence, similar practices should be adopted in other states to ensure the similar results are achieved.

5.5.2 Implication for Future Research

The independent variables used in this study are technical competency, communication competency and program development competencies (program planning, program implementation and program evaluation). However, there are other variables that should be investigated such as job satisfaction, culture, organization commitment and motivation that could influence job performance based on previous literatures discussed in Chapter 2. However, the researcher did not include those variables in this study due to restricted time frame. Therefore, the researcher suggested that those variables should be investigated in future research in order to gain better understanding of their influences on job performance especially in veterinary extension aspects.

As for the respondent, the future research should consider including veterinary officers in the study since veterinary officers are also responsible in implementing the Veterinary Extension Program. Therefore, the future research could obtain valuable information about the job performance of the veterinary officers implementing the program.

In terms of collection methods used, the present research only utilizes quantitative method where questionnaires are used in collecting data. The research of this nature may require a more rigorous method because it involves subjectivity in opinions, perceptions and feelings towards the issues relating to job performance in workplace of which, the questionnaire did not fully capture. Therefore, future researcher needs to complement it with other methods, such as interviews and focus group discussions, in

order to get a better insight of the response. By doing this, the credibility of the findings will not be questioned and discussions will be more effective and enhanced.

5.6 Conclusion

As a conclusion, this study has achieved its objectives as stated in Chapter 1. Furthermore, this study contributes to the growing literature on the relationship between competencies and job performance. It provides empirical evidence to support the conceptual framework that links competencies with job performance. This study showed that technical, communication and program planning competencies have positive and significant influences on the veterinary extensionists' job performance. Overall, the five predictors of veterinary extensionists' competencies jointly explained about 71.0% of variance in job performance with communication competency is the most significant factor followed by the program planning competency and technical competency.

Based on these findings, it is important to note that in an effort to improve job performance of the veterinary extensionists, these three competencies should be strengthened and the management should include these competencies in the training program for veterinary extensionists.

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