

**COMPUTER LITERACY AND JOB PERFORMANCE
AMONG SABAH STATE GOVERNMENT
EMPLOYEES IN KOTA KINABALU**

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DECLARATION

The materials in this thesis are original except for quotations, accepts, summaries and references, which have been duly acknowledged.

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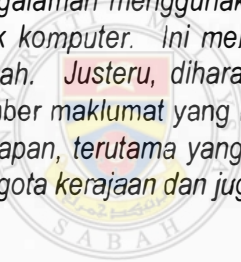


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ABSTRAK

LITERASI KOMPUTER DAN PRESTASI KERJA DI KALANGAN KAKITANGAN KERAJAAN NEGERI DI KOTA KINABALU

Topik kajian penyelidikan ini merupakan celik komputer dan prestasi kerja di kalangan anggota Kerajaan Negeri di Kota Kinabalu. Penyelidikan ini merupakan kajian inferens. Matlamat penyelidikan adalah untuk mengkaji kesan celik komputer dalam hubungannya antara perseorangan dan latar belakang komputer dan prestasi kerja. Sampel kajian ini meliputi anggota Kerajaan Negeri Sabah, di mana seramai 400 orang anggota telah dijadikan sasaran. Walau bagaimanapun, hanya 243 respon (maklumbalas) yang telah dikutip yang terdiri daripada 118 lelaki dan 125 perempuan. Untuk tujuan kajian ini, penyelidik kajian telah menggunakan soalan soal-selidik sebagai asas penyelidikan. Keputusan hasil penyelidikan ini mendapati kaum perempuan lebih celik daripada kaum lelaki. Juga dikenal pasti bahawa pekerja yang lebih berusia kurang celik komputer. Dari segi prestasi kerja, terdapat hubungan positif dengan kecelikan komputer, yang membawa pengertian semakin tinggi tahap celik komputer semakin tinggi prestasi kerja. Walau bagaimanapun, tahap pengalaman menggunakan komputer tidaklah begitu meluas di kalangan celik komputer. Ini merupakan penyelidikan pertama yang diadakan di Sabah. Justeru, diharapkan penyelidikan ini boleh digunakan sebagai sumber maklumat yang berguna untuk perancangan kerajaan pada masa hadapan, terutama yang berkaitan dengan aplikasi komputer di kalangan anggota kerajaan dan juga penyelidikan masa hadapan.

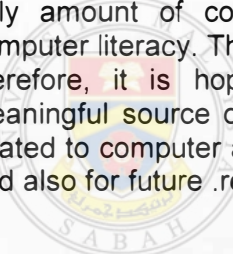


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ABSTRACT

COMPUTER LITERACY AND JOB PERFORMANCE AMONG SABAH STATE GOVERNMENT EMPLOYEES IN KOTA KINABALU

The topic of this research study is computer literacy and job performance among Sabah states Government's employees in Kota Kinabalu. This research is an inferential study research. The objective of this research is to examine the effect of computer literacy in the relationship between personal and computer background and job performance. The sample of this study comprised the employees of Sabah states government. A sample of 400 employees had been targeted. However, only 243 questionnaires were collected in which 118 are male and 125 are female. For the purpose of this study, the researcher used questionnaires as the main research instrument. The results of the research reveal that female is more computer literate than male. It also identified that the older the employees the lower the computer literacy. In terms of job performance, there is a positive relationship with computer literacy, which means that the higher the computer literacy, the higher is the job performance. However, only amount of computer experience can be accelerated by computer literacy. This is the first research of its kind in Sabah and therefore, it is hope that this research can be used as a meaningful source of information for future government planning related to computer application among the government employees and also for future .research.



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CHAPTER 1

INTRODUCTION

1.1 Overview

Job performance is always related to the quality of employees. There have been many studies on this subject to date. Existing studies indicated that, apart from individual level, certain factors such as training, promotion and performance appraisal would increase the job performance (Tsui, M.S. 1998). A study conducted among managers in USA found that computer technology and network were among the more important in improving manager's performance (Longenecker, C.O. and Fink, S.L. 2001).

The Malaysian government has embarked on an intensive effort to introduce the use of Information Communication Technologies (ICTs) in the civil service since 1997. The introduction of ICTs in the public sector is expected to simplify bureaucratic procedures usually associated with the public sector. In implementing ICTs, the civil service officers need to keep abreast with the rapid changes in ICTs. One of the outcomes of introducing ICTs in the public sector was the imitating of the electronic government (E-Government) initiative. The aim of E-Government is to improve the efficiency and effectiveness of government services (Mahathir Mohamad, 1998). It seeks to improve convenience, accessibility and process with a view to achieve speed and quality of policy development and implementation, coordination and enforcement (Tan Sri Samsudin Osman, 2003). The implementation of ICTs makes computer literacy an important form of human capital that affects economic success. (Levy, F and Richard, J. Murnane. 1996) and (Reilly, Kevin T. 1995).

The responsibility for making E-Government a success rest with the people who constitute the civil service, from policy makers to executives down to the support

staff (Mahathir Mohammad, 1998). With the introduction of E-Government, the civil service workforce had to be computer literate and needs to acquire the necessary technical know-how.

The computerization in the Sabah State Governments departments and agencies has gone through tremendous development since the 1960s. It shows that more and more departments are aware of the benefits of using computers in their offices. Most organizations in the public provide some computer-base and intensive-based training for their employees; however, few provide such training on a regular basis, being more apt to wait for training to be specifically requested (Elliot, R.H and Tevavichulada, 1999).

1.2 Problem Statement

The Government has been encouraging its employees to promote better services, higher productivity, efficiency and better quality of output. To translate this into tangible outcomes the government has introduced the application of computers in many departments or agencies in Sabah. Since then, the usage of computer has become so prevalent in many government departments and agencies in Sabah to enhance the productivity of the employees. This study addresses the following problem: How can job performance among government staff in Sabah be explained and reliably predicted from the computer literacy level of the employees' background. Based on the Survey on computer Resources in the Public Sector, 1991, by Koh Choon Kong (1993) and through the past experience in the computerization of State departments and agencies, some of the major issues involving computer literacy are:

- (i) Misunderstanding of concept on computers, resulting in false and unrealistic expectation of computerization
- (ii) Lack of computer knowledge, resulting in resistance/reluctance in accepting and utilizing computers, and at the management level, tendency

to leave the entire process of computerization to the computer EXPERT;
and

- (iii) Lack of "keyboard" skill.

Such issues are still the main concerns of the government in which the utilisation of computer among the employees is less encouraging. The poor usage of computer is indicated in the state government's records. Firstly, there are only two laboratories for computer courses in Sabah. Secondly, the budget allocated to enhance computer literacy among government employees is too small. Thirdly, there is negative mindset among the employees towards the introduction of computer in government department or agencies. This phenomenon impedes the job performance. Therefore, the government's expectation and objective as outlined in the IT Master Plan (ITMP,1997) need to address the problems of computer illiteracy of the workforce for smoother Information Technologies development of the state department and agencies.

1.3 Research Objectives

The purpose of this study is to investigate the computer literacy among government employees in Sabah. The result of this study will be valuable for planning computer literacy courses and job performance development programmes for the employees in the Sabah State Civil Service. Specifically, this study sets to answer the issues on government employees in Sabah in the following contexts:

- (1) To what extent do age, gender, amount of computer experiences, and the frequency of computer usage influence the computer literacy of government employees.
- (2) To what extent does computer literacy influence the productivity of government employees in Kota Kinabalu.
- (3) To what extent does computer literacy intervene the relationship between background and job performance.

1.4 Scope of the Study

The scope of this study covers employees of state government department or agencies in Kota Kinabalu.

1.5 Significance of the Study

The Government has introduced the application of computer to enhance productivity of the workers. However, to make the project a success, it relies on the people who constitute the Civil service from policy makers to executives down to its support staff. To make it work, the civil service workforce has to be computer literate and needs to acquire technical know-how. Based on studies, it is found that the implementation seems to be at a slower pace. There are gaps between the older workers and the younger worker in terms of using the computer in the workplace. Generally, people perceive that the older workers are slow in using computer compared to the younger workers. In other words, the older workers tend to be left behind in computer related works. It is noted that the support staff are not all provided with a computer. Only few government departments and agencies provide computer labs for the support staff's use. On the other hand, all the employees in the Professional and Managerial are provided with computers. Although they are provided with computers, it seems that they are unable to use the computer effectively owing to lack of training or computer courses. In this regard, the researcher would like to conduct this study on computer literacy and job performance so that problems can be identified and the necessary steps be taken to address the problem.

1.6 Definition of Variables

The definition of variables used in this study is as follows:

1.6.1 Age

Age as defined by Oxford dictionary is the length of time that a person or thing has existed. The age that is considered older by Warr, P. (1993) is 40 and above. Age is a particularly important demographic characteristic for at least three reasons: (1) there is workplace legislation concerning them; (2) there are links between demographics and performance and human resource maintenance; and they serve as the basis of stereotypes (Schermerhorn, J. R., Hunt J.G. and Osborn, R.N. 1995).

1.6.2 Gender

Gender is defined as the sexual classification. There are only two sexual classifications namely male and female. Some researchers use men and women instead of male and female. In this study, they are used interchangeably.

1.6.3 Amount of Computer Experience

Computer experience refers to the amount of computer usage previously. Chua S.L and Chen, D.T. (1997) reported that computer experience generally reduces computer anxiety. More computer experience means having more time working with computer, thus increasing computer literacy. The number of courses attended means the amount of courses and training that the employees have received or undergone, which are related to computer. Writers such as Bradley, G. and Russell, G. (1997) and Rosen, L.D. and Weil, M.M. (1955) defined computer courses as part of computer experience.

1.6.4 Frequency of Computer Usages

According to Oxford dictionary, frequency means the rate at which something occurs over a particular period or in a given sample.

1.6.5 Computer Literacy

A widely accepted definition of computer literacy is an understanding of computer characteristics, capabilities and applications, as well as an ability to implement this knowledge in the skilful and productive use of computer applications suitable to the individual roles in society (Simonson, M. *et al.*, 1987).

1.6.6 Job Performance

Job performance is defined as the value added in an activity or task achieved by an individual at work (Hiltrop, J.R. and Dspres, C. 1994). Mobberg, D.J. and Caldwell, D.F. (1988), on the other hand defined job performance as the employee's level of achievement against the standard determined by the employer.



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CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The performance of employees is always measured in terms of their quality output. The performance on the other hand is determined by many factors such as personal characteristics, environmental condition and demographic among others. In the olden days, organizations tended to use training, appraisal, promotional as the means to enhance productivity. Today, these methods are still relevant in any organisation with computer application as an additional tool to accelerate office work.

2.2 Development of Information Technology in the Public Sector in Sabah

Computerization was first introduced to the State Government of Sabah in the mid-sixties. The first feasibility study on computerization for the State Government of Sabah was completed in 1968, which recommended that the Sabah State Government should install its own computer facilities. Lands and Surveys Department became the first department to utilize computers in 1969 to process its revenue (A survey Report, 1991). From that year, computerization in State Government Departments received more attention, including engaging a private computer service bureau to provide data processing services in 1973, followed by the formation of the computer service unit in 1976 under the Ministry of Finance to handle all data processing activities of the State Government. This unit has since 1992 changed its name to the State Computer Department. In 1979, the state data processing steering committee was formed to rationalize and co-ordinate the implementation of computerisation projects in government agencies. This committee was responsible in setting up guidelines and in considering requests for computer

hardware and software purchases. By the end of 1979, the Computer Service Unit was providing computer services to eight departments and agencies as follows:

Lands And Surveys Department

State Treasury

Public Works Department

Forestry Department

Ministry of Finance

Chief Minister's Department

Agriculture Department, and

Sabah Land Development Board

By the mid-80's, the Computer Service Unit had provided some form of computerisation services to most government departments and agencies (K.Y.Mustafa, 1997). Such development indicates that there is increasing trend of computer application in State Government and Agencies in Sabah. However, implementing computerisation programmes in the Public Sector faced many problems since eighties and early nineties. The biggest barrier was finance as it was not a priority item in the budget. In addition, more often computers were classified as office equipment, which are normally given very low priority.

2.2.1 Computer literacy in Sabah State Government Departments

When the State Government embarked on its computerisation programmes in 1973 the technology then was dominated by the big system – Mainframes and Mini Computers. Technology dictated that computerisation became a centralized function, located only within specialized activities. In Sabah, the earliest activities to be computerised were the payroll and Land Revenue. As can be seen this was mainly accounting work, which the computers do efficiently. A big system needs highly trained professionals to run, operate and maintain. These professionals were in short

supply and were only available mainly through universities and college graduates. While computer operators could be trained locally it attracted low interest due to the repetitive, tedious and boring nature of the job. Due to these factors for a long time computer literacy in the Public Service remained very low.

In June 1995, for the first time in our Civil Service history, the State Secretary, Permanent Secretaries and Head of Departments attended a one-week "Introduction to Computer Course". This course had one intended impact, that is, it instilled in the Head of departments the important role of IT in their respective organizations if they are to continue to afford efficient and quality services to the ever-demanding public.

According to a study by K.Y.Mustafa (1997), computer literacy was notably low among Heads of Departments and senior officers, which led to computerisation projects being left to System Analysts and Programmers to figure out the best environment for the particular Department and Agency. This practice naturally had its own drawbacks because the system analysts normally do not possess adequate in-depth knowledge of the functions and intentions of the particular department or agency. Literacy level among middle management was much higher than that of their bosses while among support staff, especially secretaries, stenographers and typists, has reached a very satisfactory level. Most Government Departments and Agencies have now used word processing in their letters, minutes and many other documents. It is believed that besides improving quality and overall efficiency through the use of computers, they had also learned new skills that have contributed directly to their personal and organization's productivity.

The foregoing simple comparison showed that it has been easier to bring changes to the lower rung of the public service than to their superiors. The government has tried to overcome this problem since the early nineties. However this is a paradox. Firstly, Heads of Departments are leaders who should set the direction and lead, and secondly, they have more opportunities and exposure and therefore in a strategic position to bring about and effect change.

2.3 History of Research

There are many definitions of job performance. Waldman, David A. and Spangler, William D. (1989) developed an integrated model of job performance, focusing on characteristics of individuals (e.g. experience, ability), outcomes (e.g. feedback, job security), and the immediate work environment. According to Ivancevich and Matteson, (1996) job performance is defined as a function of the capacity to perform, the opportunity for workers to perform and their willingness to perform. The capacity to perform means the degree to which a worker possesses task-relevant skills, abilities, knowledge and experience. Opportunity to perform is related to obstacles encountered by a worker such as poor equipment, out dated technology, poor decision and outdated attitudes in performing their work. Willingness to perform, on the other hand, relates to the degree to which the worker both desires and is willing to exert effort toward attaining job performance (Ivancevich and Matteson, 2002). Mobberg, D.J. and Caldwell, D.F. (1988), on the other hand, defined job performance as the employee's level of achievement against the standard determined by the employer. Performance standards are conceived as the measured levels of performance effectiveness required for classification into specified categories of performance satisfaction (Kane, Freeman, and Kimberly, 1997). Others viewed job performance as the degree to which the members of the organisation contribute to reach the organisational objectives (Johns, G. 1992). Other authors defined job performance as the value added in an activity or task achieved by an individual at work (Hiltrop, J.M. and Dspres, C. 1994).

Usually, certain standards can be measured in job performance. The important factors that employer seeks in measuring job performance of their workers are job quality, quantity, and time needed to accomplish a job. For the purpose of improving employee's job performance in the future and also for purposes of promotion, reallocation and termination of an employee, performance appraisal is used to measured job performance. (Tsui, M.S. 1998).

Previous research seemed to suggest that the introduction and use of computer technology tends to have a strong impact on organisations in general (Zeffane, R.M. 1992) and in the way in which individuals react to various computer adoptions (Mustschler, E. and Hoefer, R. 1990). According to Fisher, J.C., Schoefeldt, D.L. and Shaw, D.C. (1993), one of the critical factors, which contributes to an organization's long-term achievement, is its ability to appraise its employees' job performance effectively and to use the feedback or information collected from the appraisals to improve existing weaknesses. The feedbacks from the appraisals also enable the employees to comprehend their contributions towards the achievement of organization's goals and evaluate their own development in the organization. Performance feedback as defined by Longenecker, C.O, and Fink, L.S (2001), can be used to recognize and reward improvements in performance, and provide an opportunity to demonstrate that the knowledge, skills and practices acquired are truly valued by the organization and are critical to career development. A study conducted among managers in USA found that computer technology and network were among the most important in improving manager's performance (Longenecker, C.O. and Fink, L.S 2001).

There have been many studies over the past two decades into the concepts of computer literacy. The review on the concept indicated that there were many different definitions presented by different authors or researchers. In other words there was lack of agreement on the definition alone. An early definition of computer literacy is presented by Kay, Robin H. (1990). He suggested that a person with computer literacy is one that possessed essential criteria, which include computer awareness, programming ability, and competency in computer software applications. A computer literate is someone who can programme using languages such as FORTRAN, BASIC or COBOL (Kim, Chung S. and Nancy K. Keith, 1994). However, some educationists were against this definition. They indicated that a computer literate person simply needs to know computer for practical purposes and does not

need to know about programming (Paprzyeki, M., Mitchell, T. and Duckett, G.E. 1994). A widely accepted definition of computer literacy is that of Simonson, M. *et.al.* (1987), who defined computer literacy as:

“ An understanding of computer characteristic, capabilities and application, as well as an ability to implement this knowledge in the skilful and productive use of computer applications suitable to the individual roles in society. (p.232).”

In this definition, the knowledge and skills of a computer literate person were divided into four components, comprising computer attitudes, computer applications, computer system and computer programming. While this is now a dated definition and classification, it has been used and modified in subsequent studies (e.g. Smith, B. and Necessary, J. 1996) and the concept broadened to be independent of a given timeframe. The essential elements of this form of definition still hold currency today

Furthermore, with the increasing use of more user-friendly personal computers that shifted away from mainframe machines, the earlier definitions involving computer programming were increasingly deemed as inappropriate. In this respect the definition based on practical use of computers increasingly becomes the basis for the plethora of computer literacy definitions currently found in the literature.

Computers are also being used increasing regularity in other settings, such as the home, for a variety of tasks. Current user groups vary on a number of characteristics including age, education, technical expertise, and basic abilities. The study of individual differences in human and computer interaction is important for a variety of reasons, including the fact that individual differences typically account for a large portion of the variance in performance (Egen, D.E 1988).

A review of the literature reveals three main areas of computer literacy research. The first area seeks to answer the question of what it means to be computer literacy. Secondly, how one measures computer literacy and the third, what

factors influence a person's level of computer literacy. The first question relates to the definitions, while as the second is more to measurement aspect. The concern of this study is the third area.

What factors influence a person's level of computer literacy? There have been a number of studies aimed at understanding individual differences in computer task performance. Generally, the results of these studies indicated that important user characteristics include age (Gomez, L.M., Egan, D.E and Bowers. C. 1986; and Sherry, E. Mead *et al.*, 2000); experience, (Rossom, M.B. 1984), and the cognitive abilities (Vincente, K.J., Hayes, B.C and Williges, R.C. 1987). Kay, Robin H. (1990) suggested that internal locus of control has positive correlation with the level of computer literacy scales, while accessibility to a computer at home and exposure to video games appeared to be the most significant factors in influencing the computer literacy of incoming college freshmen (Brock, E.J., Thomsen, W.E. and Khol, J.P. 1992).

In the past ten years, computer technologies have diffused into many aspects of everyday life and in recent years this diffusion has been accelerated and exaggerated by the convergence of computer and communication technologies, which are causing yet another revolution on their use and growing influence of life and society. This development appears to be driven not only by that industry itself but also by governments looking to maintain or to upgrade their world competitiveness through leadership in an activity set to dominate the trade and corporate world in the new millenium.

2.4 Relationship between Computer Literacy and Job Performance

In United States, college graduates were studied to determine the relationship between their improved computer skills and job performances. The Graduate Follow-Up Survey (n.d.) was administered through the telephone to recent graduates of Rio Slado College and they found out that out of a total 79 graduates who participated in