

**THE EFFECTIVENESS OF ONLINE HR SYSTEM  
IN THE RECRUITMENT & SELECTION OF  
GOVERNMENT STAFF IN  
KOTA KINABALU**

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**JUDUL:** Keberkesanan Sistem Sumber Manusia Secara Online (Online HR System) Dalam Merekrut dan Memilih Kakitangan Kerajaan Di Kota Kinabalu.

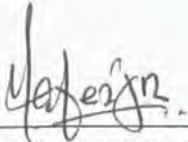
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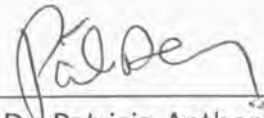
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## DECLARATION

The materials in this dissertation are original except for quotations, excerpts, summaries and references which have been duly acknowledge.

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May Allah bless all of us, Insyah-Allah.

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## ABSTRACT

The theory and research on the effectiveness of Online HR System especially in recruitment and selection tends to be dominated by the empirical research, which every work done have give a different result. Hopefully, this writing will be able to give the clear picture to the technology human resource planning and development researcher about the advantages of using the technology in organizations. This research has related the 'HR System' criteria which are the 'Online-Job Application' and the 'Online-Job Advertisement' with its effectiveness towards its users. The utilization of the system would probably increase the chances of selecting for the potential job candidates for the government sector and might also satisfied the HR System implementation itself. The focus would be on Suruhanjaya Perkhidmatan Awam Negeri Sabah (SPANS) which conducts all the process of recruiting and selecting for the new Government staffs in Kota Kinabalu. Through this study design, we will see the results of the hypotheses testing which involved the relationship between those two variables; 'Independent Variables' and 'Dependent Variable'. The results might be the positive or the negative relationship or al least has a significant effect. It will be based on the respondent's feedbacks (from the SPANS staffs and manager, Jabatan Kesihatan, Jabatan Penerangan, Jabatan Pendaftaran and Jabatan Pengangkutan Jalan) which are collected through the survey questionnaires.

## **ABSTRAK**

### **KEBERKESANAN SISTEM SUMBER MANUSIA (HR SYSTEM) SECARA ONLINE DALAM PROSES MEREKRUT DAN MEMILIH KAKITANGAN KERAJAAN YANG BARU DI KOTA KINABALU**

*Teori dan kajian mengenai keberkesanan Sistem Sumber Manusia secara online (Online HR System) terutama sekali dalam merekrut dan pemilihan lebih dipengaruhi oleh hasil tindakan pemerhatian atau kajian secara langsung yang mana setiap tugas yang dilakukan akan menghasilkan keputusan yang berbeza. Oleh yang demikian, penulisan ini diharapkan dapat memberikan gambaran yang jelas kepada para pengkaji teknologi untuk perancangan dan pembangunan sumber manusia di negara ini mengenai kelebihan penggunaan teknologi di dalam sesebuah organisasi. Kajian ini telah menghubungkan ciri-ciri seperti 'Online-Job Application' dan 'Online-Job Advertisement' yang ada pada sistem tersebut dengan keberkesanannya kepada pengguna. Sistem tersebut memberi peluang kepada majikan untuk memilih calon-calon yang berpotensi untuk mengisi kekosongan jawatan yang ditawarkan di samping tahap kepuasan sistem tersebut terhadap keperluan organisasi. Fokus akan bertumpu kepada Suruhanjaya Perkhidmatan Awam Negeri Sabah (SPANS) yang mengendalikan sepenuhnya tugas merekrut dan memilih kakitangan baru untuk menjawat jawatan di dalam jabatan kerajaan di Kota Kinabalu. Melalui kaedah kajian ini, kita akan melihat keputusan hipotesis-hipotesis yang melibatkan hubungan di antara kedua-dua faktor; 'Independent Variables' dan 'Dependent Variable', yang mana hubungannya samada positif atau pun negative ataupun sekurang-kurangnya mempunyai kepentingan di antara satu sama lain. Hasil tersebut diperolehi daripada reaksi responden (daripada kakitangan dan pengarah SPANS, Jabatan Kesihatan Malaysia, Jabatan Penerangan Malaysia, Jabatan Pendaftaran Negara dan Jabatan Pengangkutan Jalan di Sabah) melalui soalan-soalan tinjauan.*

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## CHAPTER 1

### INTRODUCTION

#### 1.1 Overview

Utilization of Information System (IS) Network in an organization was an effort to move towards globalization. It is a computer- based system also known as the Information Technology (IT). The purpose is to make the job in the office faster, easier and more efficient. However, the effort is not a total movement or changes made by the organization. This study focuses on utilizing the online system in the recruitment and selection of Government staffs by the Suruhanjaya Perkhidmatan Awam Negeri Sabah (SPANS), which involved the Jabatan Penerangan, Jabatan Kesihatan, Jabatan Pendaftaran and Jabatan Pengangkutan Jalan in Kota Kinabalu.

Currently, Malaysia government has put a lot of emphasis on Human Resource Management, especially in Human Capital Planning and Development. The implementation of Human Resource Information System (HRIS) is one of the organizational movements towards the globalization. Traditionally, the HR function has focused on delivering almost perfect quality HR systems and services to the organization (Wright & Dyer, 2000). Datuk Seri Abdullah Ahmad Badawi, the Malaysia Prime Minister believes that an excellent education may be able to produce an intellectual and strong mental generation. It may have a relationship with the capability of the Online HR System to acquire valuable information about potential candidates to fill in the vacancy in government sector.

Computer system competency in HR may be able to enhance the quality of excellence in recruiting and selecting potential staffs. It also assists the manager in management decision making and human resource planning. Online-based system in



recruitment and selection process in government sector enables efficient data storage and data retrieval. This activity is handled by the Suruhanjaya Perkhidmatan Awam Negeri Sabah (SPANS) for recruiting and selecting the government staff. The Online-application can be done through its official website, <http://www.sabah.gov.my/psc/> (SPANS).

## 1.2 Problem Statement

This study addressed two research questions. First, it examined whether there are any differences in selecting potential candidates between using manual system and using the online system. The study attempts to determine whether using the online system in selecting candidates had a significant impact on its results in hiring for a suitable and potential job candidates. Specifically, when compared to selection through the manual process, *"do the results in using the online system attain significantly an effective process?"*

The second research question is, *"do the Online-Job Application Form and the Online-Job Advertisement are significant to the Dependent Variables?"* Assessing the effectiveness of online HR system requires the results of the respondent which acquired from the study sample; the SPANS staffs and also from the other staff from the other selected government organizations such as the Jabatan Penerangan, Jabatan Kesihatan, Jabatan Pendaftaran and Jabatan Pengangkutan Jalan negeri Sabah. The effectiveness has direct relation with the results because the graph reflexes the efficacy of using the online HR system in recruitment and selection process. In relation to that outcome, identifiable factors which are collected from the research sample will be used to support the generated hypotheses.

### **1.3 Objective of the study**

This is an attempt to find the relationship between the Online HR system dimensions and the interest of the dependent variables within the recruitment and selection process towards the employment of government sector in Kota Kinabalu. By assisting and facilitating another related study on this field, it may contribute for a greater improvement on this study. Thus, the objectives of the study are stated as follow:

**1.3.1** To identify the relationship between the independent variables (Online-Job Application Form and Online-Job Advertisement) and the dependent variables (Online HR System Satisfaction and Potential Job Candidates).

**1.3.2** To determine how useful is the Online HR System in government sector in executing the administrative tasks.

### **1.4 Significant of the study**

Research shows that in year 2000, Malaysia has reached 1.5 millions of internet user, and in 2002, it increased to 5.7 millions users. The increase in the use of computer certainly proves that we are now dealing with information technology (IT).

Data from these researches provided us with finding that this technology approach improves acquisition. The finding of this research can give a perspective towards the HR function process of recruiting and selecting to raise more concerns on our core management decision-making as an HR practitioner.

The major significant of the research is that; the study is conducted in the context of Malaysia Government System. Furthermore, the involvement of five Government Organizations within Kota Kinabalu area to respond to the research was seeks to prove

that the online computer-based information system design can improve the effectiveness in recruiting and selecting staff in government sector.

## **1.5 Key Variables**

Those listed variables are the aspects that are involved directly in this study, and these are:

### **1.5.1 Online-Job Application Form**

An application form that is available online and it can be accessed from anywhere. It is also known as an Electronic-Job-Application (E-Application). This e-form will be submitted directly at the same time to the recruiter once the applicant has completed the form.

### **1.5.2 Online-Job Advertisement**

It is an electronic medium for advertising the firms or the company's available vacancies on the internet. It usually appears at the main page of the organization's website or any public or general electronic-job boards. All of the job information such as the job qualification, responsibilities, offered salary and the company address are available.

### **1.5.3 Online HR System**

It is an Online Computer-based Information System Management which is designed to manage the information through the Web-based Organizer. This information system design would speed-up the transaction process of information between the connected users at one time. This system was used to make the HR operations become more



effective and efficient. For instance, it's allowed the user to send the information by an electronic mail, windows online messaging service and any other online applications.

#### 1.5.4 Potential Job Candidates

It refers to the applicants who are being considered for a job. Additionally, the potential one would refer to those who possessed at least the minimum requirement of the vacancies offered. This type of applicants probably came from a good educational background, skillful and knowledgeable, and also having terrific employment experiences.

### **1.6 Organization of Thesis**

There are five chapters in this research study which are as follows:

Chapter 1: It is an introduction which contains the overview of the study, the research problem, the objectives and the significant of study, and the brief of the key variables.

Chapter 2: The literature reviews are the chapter which includes the key concepts of this study, some theories to support the idea of this study and also the review of the related previous study.

Chapter 3: Research methodology and framework will explains us on how this study was conducted which includes the research theoretical framework, the hypotheses, research design, and the methods used to collect and to analyze the acquired data.

Chapter 4: In this chapter, there will the analysis of the study and the results which also provide some findings.

Chapter 5: Discussion and conclusion is the final part of this research study which includes the study recapitulation and also the suggestion for the future research.



## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Introduction

This chapter will be discussing the theories, models, hypotheses and findings according to previous related research which focused specifically on the effectiveness of HR system in recruiting and selecting staff in an organization. All models, concepts and theories will be integrated into the public sector recruiting and selecting process.

#### 2.2 Definition of Key Concepts

##### 2.2.1) Online-Job Application Form

An application form that is available online and it can be accessed from anywhere. It is also known as an Electronic-Job-Application (E-Application). For example, the web has dramatically changed the way job seekers find positions. As of July 2002, over 52 million Americans have conducted online searches for information about jobs, with more than 4 million Americans doing so on a typical day, representing a 60 percent increase from 2000 (Boyce and Rainie, 2002). Recent demographics for web job searchers suggest that there is an equal mix of males and females and 61 percent are age 18-29 (Boyce and Rainie, 2002). Furthermore, 57 percent of whites, 43 percent of African-Americans, and 47 percent of Hispanics have web access (Rainie and Packel, 2001), and within minority groups, nearly 60 percent have conducted online job searching (Boyce and Rainie, 2002).

These statistics show that the web is a tool that is capable of reaching various segments of the job searching market. Although these numbers are encouraging, using the web as a recruitment tool can still lead to disparate impact and these demographic

trends should be kept in mind when using online recruitment (Stanton, 1999). The interface is 'user-friendly'.

### 2.2.2) Online-Job Advertisement

It is an electronic advertisement board (e-advertisement) which advertises the vacancies offered by the firms or company. This kind of advertisement may publish on the main company website, job search agency website or any web page that provides a job advertisement to everyone.

Recognizing the increasing and more diverse traffic on the web, companies are beginning to advertise and post position openings online. In fact, Leonard (2000) reported that 75 percent of *Fortune* 500 companies are posting jobs to their corporate sites, and less than a year later, Capelli (2001) reported that 90 percent of large US companies are using the web for recruiting. In addition, more than 75 percent of human resource professionals are now using web job boards to supplement traditional recruiting methods (HR Focus, 2000). It is evident that web-based recruiting and job search is now a major trend, reflecting the growing use of the web for commercial purposes (Lawrence and Giles, 1999; Spink and Jansen, 2004; Spink *et al.*, 2002). Other articles have examined the role and importance of job boards such as Monster.com, CareerMosaic, and HotJobs (Donovan, 2000; Gordon, 2002; Gutmacher, 2000). With the focus on job boards and corporate rs, it is somewhat surprising how little research attention has been paid to the job seekers themselves. With one recent exception (Feldman and Klass, 2002), we could locate no other published research exploring how job seekers locate job-related information and positions on the web and how successful they are in finding relevant information.



### 2.2.3) Online HR System

It is an Online Computer-based Information System Management which is designed to manage the information through the Web-based Organizer. This information system design would speed-up the transaction process of information between the connected users at one time. This system was used to make the HR operations become more effective and efficient.

The Online-based Information System has been viewed as basic medium that capable to speed-up mostly of daily personnel information transactions. The HR's link with IS and IT is becoming one of collaboration on solutions rather than one in which IS supports HR with programming services. Online is enabling many HRDs to move beyond personnel's administrative legacy to take on a much more strategic role in the company. In many organizations, HR and IS are collaborating on enterprise-wide systems that are designed to provide management with critical information about workforce issues (Santosus, 1995). "A comprehensive base of accurate, up-to-date HR information that is readily accessible to decision makers throughout the organization is absolutely essential to HR's ability to perform its key roles" (Minneman, 1996).

### 2.2.4) Potential Job Candidates

It refers to the applicants who are being considered for a job. Additionally, the potential one would refer to those who possessed at least the minimum requirement of the vacancies offered.

Applicants through the Internet are mostly young, computer literate, educated and showing some interest in the recruiting company, especially if they apply through the corporate Web site (Baillie, 1996; Frost, 1997), not to mention "accepting of change and,

therefore, more likely to help the business grow and change" (Thaler-Carter, 1998, p. 64). Recently the number of older, non-IT staff using the Internet to find jobs has increased, with around half of them earning more than £30,000 while 60 per cent are qualified to at least degree level (Welch, 1999). Practices like posting a job opening as an e-mail to the discussion groups or electronic forums of special interest groups enhance the targeting potential of the medium (Baillie, 1996), while the existence of niche sites like christianjobs.com, bilingual-jobs.com, casinocareers.com (for casino workers), nsbe.org (for black engineers), MBAfreeagents.com, or asia-net.com (for Asian-language speakers) provides for unprecedented fragmentation of the OR labour-market-targets (Greengard, 1998; Thaler-Carter, 1998).

## **2.3. Research Theory**

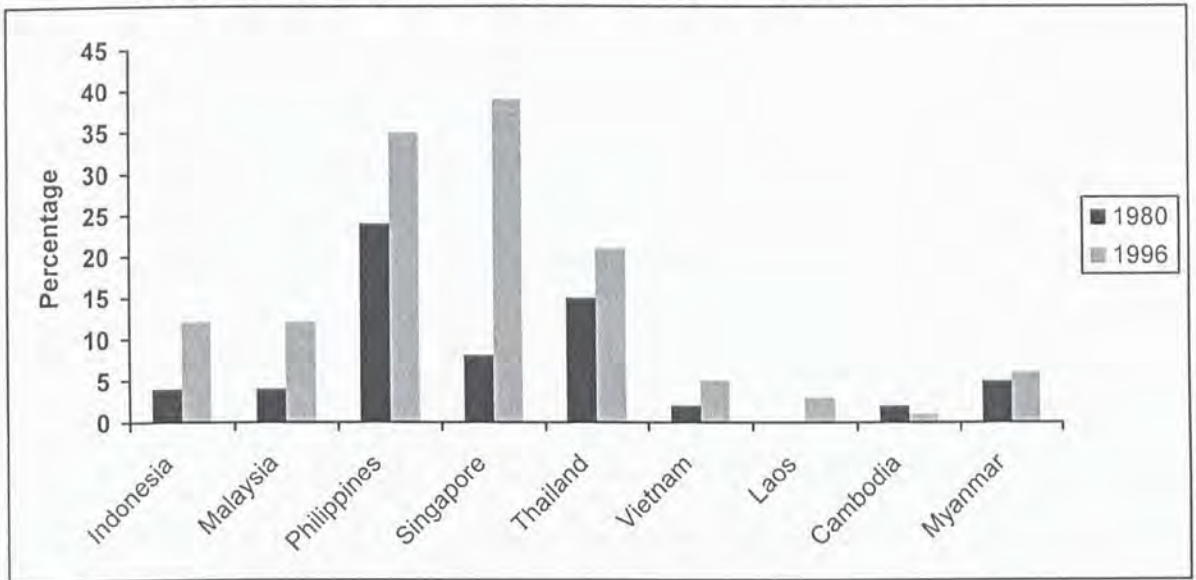
### **2.3.1) Demand for ICT among the Sectors in Malaysia**

The graduates have used the Internet during their degree courses and it is second nature to use it for searching job opportunities and making job applications. Currently, Malaysia is moving towards the world-class education as there are more private colleges and universities established. The first virtual university that was established in this country is University Tun Abdul Razak (UNITAR) in early 1990s, then followed by the Open University and Multimedia University. These universities have implemented the e-learning mode to deliver the academic resources, for the learning activities and also for the administrative purpose. An IT training will be given to the newly registered students during the introduction week. Their learning methods such as the Online-Tutorial classes (OLT), and student VOISS (Virtual Online Instructional Support System) which contains the web-based announcement, bulletin, assignments distribution, e-mail and online-course



registration might develop the students to be more familiar with the IT. In the next few years, the public universities are expected to produce over 20,000 ICT-based graduates per year. The graph for the tertiary education enrolment in ASEAN country in 1980 and 1996 is shown in figure 2.1. During this period, Malaysia has recorded 13% enrolments while the Singapore is 39% and the Philippines 25%.

Figure 2.1: Tertiary Education Enrolment in ASEAN, 1980 and 1996



Source: Computed from World Bank (1999)

At the workplace, computer-based administrative task has been already applied in many sectors since 2000. Table 2.1 illustrates the ICT expenditures by the selected sectors in Malaysia in 1995 and 2000. Within the 5-years period, the manufacturing industry has recorded 19.0% average annual growth and followed by the education and research, 15.6%. However, the telecommunications industry has just started in 2000 with RM2323 million of investments towards the ICT. This clearly shows that the uses of computer among the workforces in this country has rapidly grows every year.

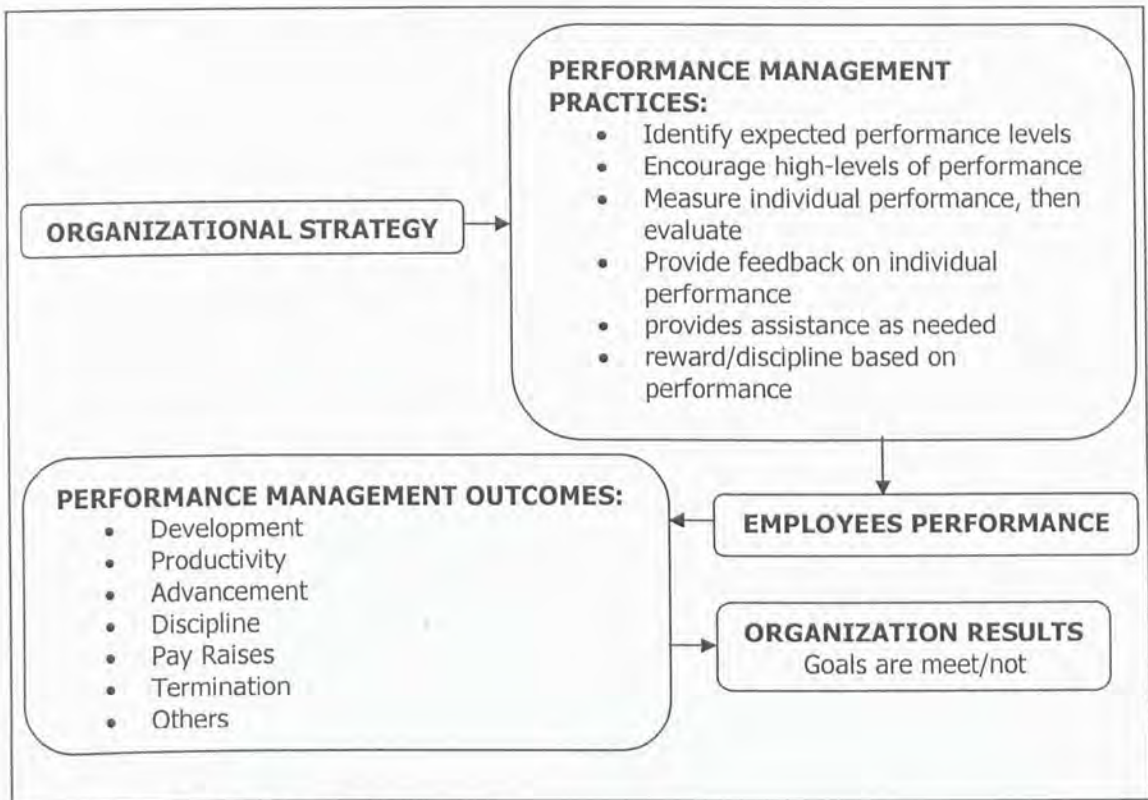
Table 2.1: ICT Expenditure by Sector 1995 and 2000 (Selected Sectors only)  
(RM million)

Sector	1995	2000	Average annual growth rate (%)
Banking & Finance	1,026	3,723	-4.2
Manufacturing	494	4,641	19.0
Government	380	2,062	6.9
Telecommunication	-	2,323	-
Professional ICT & other services	125	236	13.5
Education & Research	114	1,008	15.6
Transportation	114	1,147	9.1

Source: Computer Industry Association of Malaysia (PIKOM)

With this excellent growth in the education and research sector, Malaysia will be expected to produce over 90% of its graduates with computer-literate by the year 2010. According to the scenario, computer-literate workers will reach 200,000 at minimum during 2010 where by 108,200 ICT workers already available in 2000. Accordingly, the implementation of ICT into an organization requires the employee's efficiency in handling these technologies to complete their tasks effectively. It is the part of human capital which requires by the organization. The employee's performance in organization may affect the organizational strategy which has the link with the outcomes and the results. Figure 2.2 illustrates the linkages between strategy, outcomes and the organization results.

Figure 2.2: Linkages between Strategy, Outcomes and Organization Results



Sources: Mathis & Jackson (2003)

As the conclusions, the employee's competency and talent towards the organizational strategy has to be concerned as the contributor to the organizational achievement.

### 2.3.2) Information Technology (IT) in Southeast Asian Human Capital Growth

In Southeast Asia, the development of Human Resource Management was is at par with the developed countries like Japan, South Korea, China, Hong Kong, US and Germany. Both countries provide equal access of IT towards their society. Malaysia itself has the *E-Government* which is the Web-Based Government Transaction Portal. It allows the Malaysian to interact with the government through the IT technology mainly for inquiry, applications or resources and information purposes. In addition, Singapore has launched



the Infocomm 21 Plan, which attempt to position the economy as an information base with the hope of attracting strong participation by ICT companies, and as well as Malaysia, the Multimedia Super Corridor (MSC). However, the evolution of IT human capital in Southeast Asia has evolved equally.

Table 2.2 shows the expanding of Personal Computer (PC) for wider information through the internet which connected by the telephone-line among the ASEAN countries has also been indicated. Singapore has been at the same level with the Northeast Asia and the Western hemisphere countries. However, Malaysia is second; and leads the other ASEAN countries but it is very far behind Singapore. Singapore and Malaysia have ventured aggressively to build their IT infrastructure (Wong 2001; Rasiah 1999). Malaysia has also waived though immigration controls on skilled labor and professionals for firms locating in MSC.

Table 2.2: IT and Telecommunication Indicators of Selected Economies

	Telephones per 1,000 persons (1997)	PCs per 1,000 persons (1997)	Internet hosts per 10,000 persons (July 1998)
<b>ASEAN</b>			
Malaysia	195	46.1	18.38
Philippines	29	13.6	1.01
Singapore	543	399.5	187.98
Thailand	80	19.8	4.17
Vietnam	21	4.6	0.00
Indonesia	25	2.1	0.11
Laos	5	1.1	0.00
Cambodia	2	0.9	0.05
Myanmar	5	-	0.00
<b>Northeast Asia</b>			
Japan	479	202.4	107.05
South Korea	444	150.7	37.66
China	56	6	0.16
Hong Kong	565	230.8	108.02
<b>Western Hemisphere</b>			
USA	644	406.27	975.94
Germany	550	255.5	140.58

(-) No data available

Sources: World Bank Institute (1999)

## REFERENCES

- Abdul Manaf Bohari, (2005), *Isu-Isu Professional ICT di Malaysia*, Kuala Lumpur: IBS Buku Sdn. Bhd.
- Armstrong, M., (2000) *Performance Management; Key Strategies and Practical Guidelines* (2<sup>nd</sup> edition). UK: Kogan Page Limited.
- Ashton, C., (2002). Getty Images puts e-HR in perspective. *Emerald Human Resource Management International Digest*, **10**(1):13-16.
- Bailey, J. E., & Pearson, S. W., (1983). Development of a Tool for Measuring & Analyzing Computer User Satisfaction, *Management Science*, May, **29**(5):530-545.
- Baillie, J., (1996), "Attracting employees who surf the Internet", *People Management*, **2**(17):46-7
- Barnatt, C., (2000), "e-Legacy: the IP systems challenge", *Journal of General Management*, **25**(4):1-16
- Bartoli, A., & Hernel, P., (2004). Managing change and innovation in IT implementation process. *Emerald Journal of Manufacturing Technology Management*, **15**(5):416-425.
- Baruch, Y., (1999). Integrated Career Systems for the 2000s. *Emerald International Journal of Manpower*, **20**(7):432-457.
- Bassellier, G., Benbasat, I., & Reich, B. H., (2003). The influence of business managers' IT competence on championing IT. *Information System Research*, **14**(4):317-336.
- Boyce, A., & Rainie, L., (2002), "Online job searching", *Pew Internet and American Life Project*, available at: <http://pewinternet.org>
- Brynjolfsson, E., & Hitt, L., (2000). Beyond Computation: Information Technology, organizational transformation and business performance. *Journal of Economic Perspectives*. **14**(4):23-48.
- Chia Siow Yue & Jamus Jerome Lim, (2002). *Information Technology in Asia; New Development Paradigms*. Singapore: Institute of Southeast Asian Studies (ISEAS)
- Capelli, P., (2001), "Making the most of online recruiting", *Harvard Business Review*, **79**(3):139-146.





- CIPD (1999), "Recruitment on the Internet", *IPD Information Note*, <http://www.cipd.co.uk/Infosource/RecruitmentAndSelection/RecruitmentontheInternet.asp>
- CIPD (2000), "Recruitment. IPD survey report", [http://www.cipd.co.uk/download/recruit\\_survey2000.pdf](http://www.cipd.co.uk/download/recruit_survey2000.pdf)
- David Asirvatham, (2005). *Borderless Education Through E-Learning*, Kuala Lumpur: Multimedia University Journal.
- David Yoon Kin Tong & Sivanand, C. N., (2005). E-Recruitment service providers review; International and Malaysian. *Emerald Employee Relations Journal*, **27**(1):103-117.
- Dibbern, J., Goles, T., & Hirschheim, R., (2004). Information Systems Outsourcing: A survey analysis of the literature. *The DATA BASE for Advances in Information Systems*, **35**(4):6-102.
- Donovan, D., (2000), "Opportunities online", *Forbes*, No. Spring, pp.72
- Ehenberg, R. G., & Smith, R. S., (2006). *Modern Labor Economics; Theory and Public Policy* (9<sup>th</sup> edition). US: Pearson.
- Flavian, C., & Gurrea, R., (2006). The choice of digital newspapers: influence of readers goals and user experience. *Emerald Internet Research*, **16**(3):231-247.
- Feeny, D. F., & Willcocks, L. P., (1998). Core IS Capabilities for Exploiting Information Technology. *Sloan Management Review*. **39**(3):9-21.
- Feldman, D. C., & Klass, B. S., (2002), "Internet job hunting: a field study of applicant experiences with online recruiting", *Human Resource Management*, **41**(2):175-92
- Frost, M., (1997), "The Internet's hire purpose", *HRMagazine*, **42**(5):30-2
- Grout, J., & Perrin, S., (2002). *Recruiting Excellence; an insider's guide to sourcing top talent*. UK: McGraw Hill.
- Galanaki, E., (2002). The Decision to Recruit Online: a descriptive study. *Emerald Career Development International Journal*. **7**(4):243-251.
- Glencoe Professional Communication Series, (2003). *Managing Information in the Workplace; 10 Ways to Organize for High-Performance*, US: McGraw Hill.
- Goetsch, D. L., & Davis, S., (1995). *Implementing Total Quality*. New Jersey:Prentice Hall.





- Gordon, J., (2002), "Battle of the boards", *Forbes*, No.August, pp.50, 170.
- Greengard, S., (1998), "Putting online recruitment to work", *Workforce*, Vol. **77**(8):73-7
- Gutmacher, G., (2000), Secrets of online recruiters exposed, *Workforce*, **79**(10):44-50
- Heeks, R., (2001), "Understanding e-governance for development", paper no. 11, i-Government Working Paper Series, Institute for Development Policy and Management, Manchester: University of Manchester.
- Heeks, R., (2003), "Most egovernment-for-development projects fail: how can risks be reduced?", paper no. 14, i-Government Working Paper Series, Institute for Development Policy and Management, Manchester: University of Manchester.
- Heeks, R., (1999), *Reinventing Government in the Information Age: International Practice in IT-enabled Public Sector Reform*, London: Routledge.
- Hedelin, L., & Allwood, C. M, (2002). IT and Strategic Decision Making. *Emerald Industrial Management & DataSystems*, **102**(3):125-139.
- Heijden, H., (2001). Measuring IT Core Capabilities for E-Commerce. *Journal of Information Technology*. **16**(1):13-22.
- Helms, M. M., & Raiszadeh, F. M. E., (2002). Virtual offices: understanding and managing what you cannot see. *Emerald Work Study Journal*, **51**(5):240-247
- Henderson, J. C., (1990). Plugging into Strategic Partnerships: the critical IS connection. *Sloan Management Review*, **31**(3):7-18.
- Hooper, B., (1996). Job Hunting on the Internet. *Emerald Collection Building Journal*, **15**(2):39-41.
- <http://www.webopedia.com>
- <http://www.wordwebonline.com>
- Jansen, B. J., Jansen, K. J., & Spink, A., (2005). Using the Web to Look for Work; Implications for Online Job Seeking and Recruiting. *Emerald Internet Research Journal*, **15**(1):49-66.
- Kennan, M. A., Cole, F., Willard, P., Wilson, C., & Marion, L., (2006). Changing Workplace Demands: what job ads tell us? *Emerald Aslib Proceedings: New Information Perspectives Journal*. **58**(3):179-196.
- Kennedy, J. L., & Morrow, T. J., (1995). *Electronic Job Search Revolution (2nd edition)-How to win with the new technology that's reshaping today's job market*, US: John Wiley & Sons Inc.

- Kadir Dikoh & Mohd. Firoz Abu Bakar, *Berfikir di luar kotak; (PM) Abdullah mahu sekolah beri penekanan lahirkan pelajar kreatif dan inovatif*, Kuala Lumpur: Berita Harian, 17/1/2007, m/s. 1 & 3.
- Kern, T., & Willcocks, L. P., (2002). Exploring Relationships in Information Technology outsourcing: the Interaction Approach. *European Journal of Information Systems*, **11**(1):3-19.
- Kern, T., & Willcocks, L. P., (1998). IT outsourcing as Strategic Partnering: the case of the UK Inland Revenue. *European Journal of Information Systems*, **7**(1):29-45.
- Lacity, M. C., Willcocks, L. P., & Feeny, D. F., (1995). IT outsourcing: Maximize Flexibility and Control. *Harvard Business Review*, **73**(3):84-93.
- Lawrence, S., & Giles, C. L., (1999), "Accessibility of information on the web", *Nature*, No.400, pp.107-9.
- Lee, D. M. S., Trauth, E. M., & Farwell, D., (1995). Critical Skills and Knowledge Requirements of IS Professionals: A Joint Academic/Industry Investigation. *MIS Quarterly*, **19**(3):313-340.
- Lee, J. N., & Kim, Y. G., (1999). Effect of Partnership Quality on IS outsourcing success: Conceptual Framework and Empirical Validation. *Journal of Management Information Systems*, **15**(4):29-61.
- Leonard, B., (2000), "Online and overwhelmed", *HR Magazine*, **45**(8):36-42
- Lievens, F., van Dam, K., & Anderson, N., (2002). Recent Trends and Challenges in Personnel Selection. *Emerald Personnel Review Journal*, **31**(5):580-601.
- Love, P. E. D., Ghoneim, A., & Irani, Z., (2004). Information Technology Evaluation: classifying indirect costs using the structured case method. *Emerald The Journal of Enterprise Information Management*, **17**(4):312-325.
- Mansourian, Y., & Madden, A. D., (2007). Methodological Approaches in Web search research. *Emerald The Electronic Library Journal*, **25**(1):90-101.
- Markus, M. L., & Robey, D., (1988). Information Technology and Organizational Change: Causal Structure in Theory and Research. *Management Science*, **34**(5):583-598.
- Mata, F. J., Fuerst, W. L., & Barney, J. B., (1995). Information Technology and Sustained Competitive Advantage: A Resource-based Analysis. *MIS Quarterly*, **19**(4):487-505.
- McFarlan, F. W., & Nolan, R. L., (1995). How to Manage an IT outsourcing Alliances. *Sloan Management Reviews*, **36**(2):9-23.



- McIvor, R., McHugh, M., & Cadden, C., (2002). Internet Technologies: supporting transparency in public sector. *Emerald International Journal of Public Sector Management*, **15**(3):170-187.
- Melville, N., Kreamer, K., & Gurbaxani, V., (2004). Review: Information Technology and Organizational Performance: An Integrative Model of IT Business Value. *MIS Quarterly*, **28**(2):283-322.
- Minneman, W. A., (1996), "Strategic justification for an HRIS that adds value", *HR Magazine*, pp.35
- Pablos, P. O., (2004). Human Resource Management Systems and their role in the development of strategic resources: empirical evidence. *Emerald Journal of European Industrial Training*, **28**(6):474-489.
- Pollitt, D., (2005). E-Recruitment gets the Nike tick of Approval; system frees HR staff to perform more consultancy. *Emerald Human Resource Management International Digest*, **13**(2):33-35.
- Pollitt, D., (2005). E-Recruitment helps Xerox to pick the cream of the crop; Pan-European system for attracting sales personnel. *Emerald Human Resource Management International Digest*, **12**(5):33-35.
- Rainie, L., & Packel, D., (2001), "More online, doing more: 16 million newcomers gain internet access in the last half of 2000 as women, minorities, and families with modest incomes continue to surge online", *Pew Internet and American Life Project*, available at: [www.pewinternet.org](http://www.pewinternet.org)
- Rasiah, R., edited by Chia Siow Yue & Jamus Jerome Lim, (2002). *Information Technology in Asia; New Development Paradigms*, Singapore: Institute of Southeast Asian Studies.
- Raub, S., & Streit, E. M., (2006). Realistic Recruitment. *Emerald International Journal of Contemporary Hospitality Management*, **18**(4):278-289.
- Rosenberg, M. J., (2001) *E-Learning: Strategies for Delivering Knowledge in the Digital Age*, US: McGraw-Hill.
- Ross, J. W., Beath, C. M., & Goodhue, D. L., (1996). Develop Long-Term Competitiveness through IT assets. *MIT Sloan Management Reviews*, **38**(1):31-42.
- Rudich, J., (2000), "Job hunting on the Web", *Link-Up*, **17**(2):21-4
- Sameer Kumar, (2003). Managing Human Capital supply chain in the Internet era. *Emerald Industrial Management & Data Systems*, **103**(4):227-237.
- Santosus, M., (1995), "Personnel matters", *CIO Magazine*, pp.44



- Saunders, C., Gebelt, M., & Hu, Q., (1997). Achieving Success in Information Systems outsourcing. *California Management Review*, **39**(2):63-79.
- Saxena, K. B. C., (2005). Towards Excellence in e-Governance. *Emerald International Journal of Public Sector Management*, **18**(6):498-513.
- Scheyer, R., & McCarter, J., (1998), *The Employer's Guide to Recruiting on the Internet*, Impact Publications, USA
- Searle, R. H., (2006). New Technology: the potential impact of surveillance techniques in recruitment practices. *Emerald Personnel Review Journal*, **35**(3):336-351
- Seo, Y. W., Han, H. S., & Lee, J. N., (2005). A Relationship Perspective to Investigate the Effect of Human Resource Capability on Information System Outsourcing Success. *Research and Practice in Human Resource Management*, **13**(2):1-15.
- Smith, A. D., & Rupp, W. T., (2004). Managerial Challenges of e-Recruiting: extending the life cycle of new economy employees. *Emerald Online Information Review Journal*, **28**(1):61-74.
- Spink, A., & Jansen, B. J., (2004), *Web Search: Public Searching of the Web*, New York: Kluwer.
- Spink, A., Jansen, B. J., Wolfram, D., & Saracevic, T., (2002), "From E-sex to Ecommerce: web search changes", *IEEE Computer*, **35**(3):107-11
- Stanton, J. M., (1999), "Validity and related issues in web-based hiring", *The Industrial-Organizational Psychologist*, **36**(3):69-77
- Tallon, P. P, Kraemer, K. L., & Gurbaxani, V., (2000). Executives Perceptions of the Business Value of Information Technology: A process-oriented approach, *Journal of Management Information Systems*, **16**(4):145-173.
- Taylor, C., (2001), "Windows of opportunity", *People Management*, **7**(5):32-6
- Thaler-Carter, R., (1998), Recruiting through the Web: better or just bigger, *HR Magazine*, **43**(12):61-7
- Thelwall, M., (2002). Methodologies for Crawler based Web Surveys. *Emerald Internet Research: Electronic Networking Applications and Policy Journal*, **12**(2):124-138.
- Torrington, D., & Huat, T. C., (1994). *Human Resource Management for Southeast Asia*, Asia: Prentice Hall, Simon & Schuster (Asia) Pte Ltd.
- Uma Sekaran, (2003), *Research Methods for Business – A Skill Building Approach* (4<sup>th</sup> Edition), John Wiley & Sons, Inc.

- Wade, M., & Hulland, J., (2004). The Resource-based Review and Information System Research: Review, Extensions and suggestions for future research. *MIS Quarterly*, **28**(1):107-142.
- Walker, A. J., editor Towers Perrin. (2001). *The Technologies and Trends that are Transforming HR; Web-Based Human Resources*. US: McGraw Hill.
- Ward, J., & Peppard, J., (2002). *Strategic Planning for Information Systems*. England: John Wiley & Sons Ltd.
- Ward, J., & Peppard, J., (2004). Beyond Strategic Information Systems: Towards an IS Capability. *The Journal of Strategic Information Systems*, **13**(2):167-194.
- Webster, M., (2003), *Data Protection for the HR Manager*, UK: Gower.
- Weiss, T. B., & Hartle, F., (1997), *Reengineering Performance Management; Breakthroughs in Achieving Strategy through People*. US: St. Lucie Press.
- Welch, J., (1999), "HR faces double standard change on net crackdowns", *People Management*, **5**(12):13
- Wong, F., (2001), "Tonic fails to ease pain of business", Hong Kong iMail, [web.lexis-nexis.com/universe](http://web.lexis-nexis.com/universe)

