

## **Training Impact on Employee's Job performance: A Self Evaluation of HRDL Training Programs**

Abd Hair Awang<sup>a</sup> Rahmah Ismail<sup>b</sup> Zulridah Mohd Noor<sup>b</sup>  
<sup>a</sup>Center of Social, Development and Environmental Studies  
Faculty of Social Sciences & Humanities  
<sup>b</sup>Center of Economic Studies  
Faculty of Economics and Business  
Universiti Kebangsaan Malaysia

**Abstract.** *Nurturing a high-quality, knowledgeable and innovative human capital with strong moral and ethical values has become a new source of driving the nation's productivity growth and competitiveness. Therefore, Human Resource Development Council (HRDC) was established in 1992 to generate lifelong learning in workplace setting to improve labor productivity, technology transfer and innovation. In 2002 it was renamed as Human Resource Development Limited (HRDL). All registered employers with HRDL are eligible for the employees training grants. The total approved training places and disbursement of training grants had increased over the years. This paper investigates to what extent the training programs improve employee knowledge, skills, works behavior and job performance, and what are the significant training related factors influencing job performance. The paper is based on data collected through self-administrated survey on 1200 employees (45.8 percent responded) at hotels, resorts and ICTs companies in three selected states. Out of the responses, 73 percent attended various training programs organized by HRDL. The result shows that, in general, the training programs improve knowledge, skills and positive work behavior of employees. Multiple linear regression analysis supports the hypothesis that training related variables have positive impact on employees' job performance except cognitive competence.*

**Key words:** *Training, competence, job performance*

### **INTRODUCTION**

Malaysia is moving up the competitiveness rankings by seven spots to the 25th place in the Growth Competitiveness index in 2005, as compared to 2004. In terms of the Business Competitiveness Index, Malaysia's ranking moved upward to 20<sup>th</sup> place as shown in Table 1. Malaysia also places 26th in the World Economic Forum's (WEF) Global Competitiveness Index (GCI) rankings for 2006. Currently Malaysia has moved up to the 19<sup>th</sup> place in the World Competitiveness Yearbook 2008 published by the International Institute for Management Development (IMD) based in Switzerland (IMD, 2008). Local researchers (such as Fong Chan Ong 2006; Kanapathy, 1997; Tan and Gill, 2000) have recognized that knowledge workers are the most critical element in developing advance technologies, improving productivity and continuing to attract

foreign direct investment (FDI). The success of nation and companies in the knowledge- based economy today lies more on their knowledge and intellectual capital than on other resources as mentioned in the Ninth Malaysia Plan 2006-2010 (Malaysia 2006). These circumstances point to the importance of human resources as factors of investment, economic development and as key element of competitiveness (Garelli, 2002). Therefore, the priority efforts must be given to develop high-quality, knowledgeable and innovative human capital with strong moral and ethical values (Prime Minister’s Department 2008).

Table 1: Comparative Overall of Malaysia’ Competiveness

Country	Growth Competiveness Index Ranking 2006 (2005, 2004, 2003)	Business Competiveness Index Ranking 2006 (2005, 2004)
Finland	2 (2, 2, 6)	3 (2, 2)
Singapura	5 (5, 7, 6)	11 (11,10)
Republic Korea	24 (19, 29, 18)	25 (24, 24)
<b>Malaysia</b>	<b>26 (25, 31, 29)</b>	<b>20 (23, 23)</b>
Thailand	35 (33, 34, 32)	37 (37, 37)
India	43 (45, 55, 56)	27 (31, 30)
China	54 (48, 46, 44)	64 (57, 47)
Turkey	59 (71, 66, 65)	46 (51, 52)
Indonesia	50 (69, 69, 72)	35 (59, 44)
Filipina	71 (73, 76, 66)	72 (69, 70)

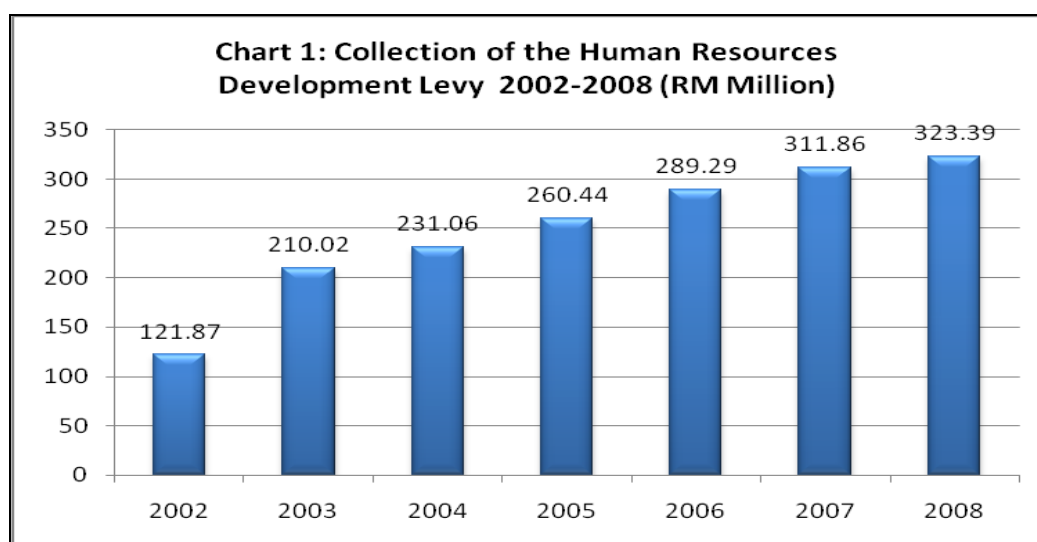
Source: Claros, Porter, Martin and Scwab (2007), Porter, Scwab and Martin (2006), Claros, Porter and Scwab (2005).

## **HUMAN RESOURCE DEVELOPMENT FUND (HRDF)**

Human resource development (HRD) act was established in 1992 and enforced in January 1933. The enforcement of this act led to the formation of Human Resource Development Fund (HRDF) and Human Resource Development Council (HRDC) as a

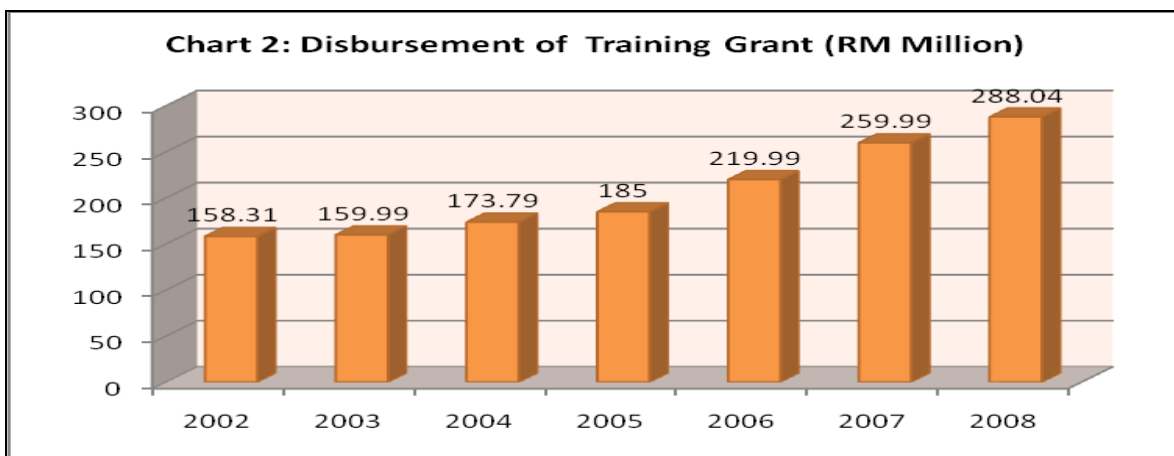
coordinator (HRDF 2008a). In 2002 HRDC was renamed as Human Resource Development Limited (HRDL). In the early implementation, HRD act only covered employers with 50 and above Malaysian citizen employees in the manufacturing sector. Every employer must register with HRDL and pay one percent of the monthly wages of the employee. The wages of employees are not permitted to be deducted for the payment of the levy (hand Book). However with effect from January 1995, the coverage was extended to employers with 10 to 49 employee and paid-up capital of RM2.5 million and above (HRDF 2005). The establishment of the HRDF aims at upgrading the knowledge and skills of workers, equipping workers with the latest and specific skills, producing multi-skilled workers, facilitating the transfer technology, improving productivity and value-added operations, preventing worker's skills from becoming obsolete and enhancing the training culture amongst employers (HRDF 2008).

In 2007, there was an additional sector covered under the Act, namely, the Commercial Land Transport Sector. The total number of registered employers was increased from 10,261 in year 2006 to 10,780 in year 2007 (HRDF 2008). The total amount of levy collection also increases over the years with 23 percent of annual growth rate. In year 2008, total amount of levy collection was RM323.39 million as shown in Chart 1.

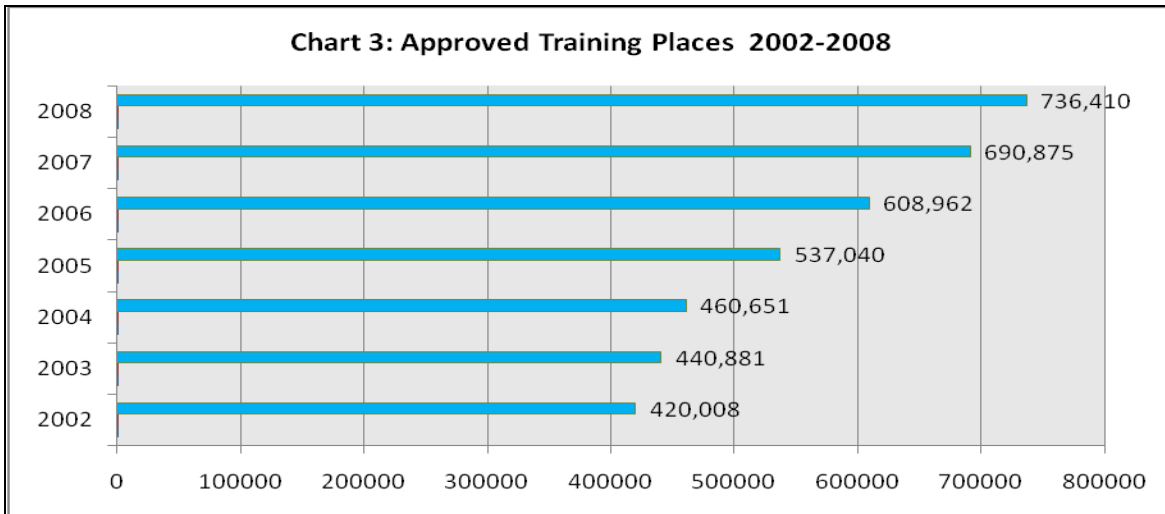


Source: Human Resource Development Fund (2006, 2008).

Employers who have registered with HRDL and pay the HRD levy are eligible to apply for training grants. However, the training must be in the area of direct benefit to their companies. Currently there are ten training schemes and employers are encouraged to utilize their levy payments. The training schemes consist of subsidize training scheme (SBL), Special-SBL scheme (SBL-Special), approved training scheme (PROLUS), annual training plan scheme (PLT), training provider agreement scheme (PERLA), purchase of training aids and set up training rooms, computer based training scheme (CBT), set up computer training units, apprenticeships training scheme and joint training scheme (HRDF 2005). Chart 3 showed the total approved training places had increased 75.3 percent from 420,008 in 2002 to 736,410 in 2008. On average the annual growth rate was 10.8 percent. In term of disbursement of training grants, there was an increase of RM129.73 million (81.9 percent) from RM158.31 million in year 2002 to RM288.04 million in year 2008 (Chart 2). All registered employers are eligible to choose allowed modes of training as enterprises-based training, institution-based training, industry-managed training centers, co-operative type training and overseas training. This paper attempts to answer two main questions. First, does training programs improve knowledge, skills and work behavior of the participant? Second, does training affect on job performance?



Source: Human Resource Development Fund (2006, 2008).



Source: Human Resource Development Fund (2006, 2008).

Table 1: Numbers of Registered Employer & Training Places in  
Selected Services Sector 2005 – 2007

Hotel Industry				
Year	Levy Collection (RM)	Registered employer	Approved training places	Registration of new employers
2007	12,673,466.18	792	37,710	69
2006	11,885,679.74	758	40,870	27
2005	11,032,257.52	748	30,127	33
Computer services industry				
2007	19,101,879.93	676	21,935	76
2006	17,997,706.94	641	17,556	140
2005	12,555,300.32	525	11,896	65

--	--	--	--	--

Source: Human Resource Development Fund (2006, 2008).

## **DATA AND METHODS**

A survey of hotels, resorts and ICT's employees was carried out using a structured questionnaire. The main purpose of the survey was to collect information on the incidence and perceptions of training among workers. Data have been collected through self-reported survey on 1,200 employees (45.8 percent responded). Out of the responses, 334 employees (72.9 percent) attended various training programs organized by HRDL. The survey questionnaire was adapted from the Kirkpatrick's training level (1994) taking into account the extensive reviews of relevant research (ANTA 2000, Cuthbert 1996, Ka-shying Woo 1998, Kwan and Ng 1997, Schmidt 1998, Smith and Wilson 2002, Strickland, Simons, Harris, Robertson, Harford and Edwards 2001, Velde and Cooper 2000). The survey questionnaire measure the participant perceptions of the actual service and impact received after training programs. Employees respond to item using a five point likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree).

A total of four component indicators were identified as the measurement parameters. These are training reactions, learning outcomes, behavioral changes and organizational impact in terms of employee's job performance. We have considered six subjective measures of job performance – work target, product/service quality, product/service defect, customer complaint, job hazard and equipments failure. A pilot test with a group of 20 employees was conducted to determine problem with the instruments. The overall alpha coefficient ( $\alpha$ ) range in this study was 0.77 to 0.87. According to George and Mallery, (2001) Cronbach alpha ( $\alpha$ ) 0.7 is considered acceptable, while 0.8 is good. While, the linear regression model was employed to explain employee's job performance by personal endowments (gender, years of schooling and work experience), attributes of training reactions (training contents, financing of the training and trainers quality), learning outcomes (cognitive competencies, and technical skills) and behavioral changes (work commitment and work respectfulness).

## **RESEARCH FRAMEWORK**

A widely accepted Kirkpatrick (1994) classical model, identified four level of training evaluation; Level One – Reaction, Level Two – Learning, Level three – Behavior and Level Four – Result. The training system comprises of inputs, process and outcomes (Al-Khayyat and Elgamal 1997; Barnard, Veldhuis and Van Rooij 2001; Dumbrell 2000; Gabbard 1981; Gasskov 2000; Grubb and Ryan 1999; Hanusek 1986, 1997, 2002; Kim and Harris 1976; Lynton and Pareek 2000; McCaslin 1990; Nelson 1993; Ziderman 1997). Inputs of the training program consist of trainer, instructional content and training financing. The training process is the engine of the system. Here the inputs are transformed into actions and outcomes. This is where the teaching and learning occur and required knowledge, skills and behavior changes are introduced to the participants. The trainee's capabilities, personality, motivational factors, previous work experience will affect the learning process. At this stage reaction of service quality of the training program will affect the knowledge, skills and behavior changes of the participants. The main goal of training is to prepare participants for the tasks they are going to perform on their jobs (Barnard, Veldhuis and Van Rooij 2001; Holton and Trott 1996). These effects on the participant refer to the increments in knowledge, skills and attitudes that required in the workplace. The needed impact of training to the company operations is improvement in employee's job performance.

## **RESULT AND DISCUSSION**

This section presents descriptive statistics and explains the background of respondents and HRDF training programs attended by employees in this study. More than half (56.6 percent) of the respondents are female. On average their age are 32 years ( $M=31.58$ ,  $SD=6.970$ ), with the eldest is 56 years and the youngest is 20 years old. The majority of the employees are Malays (52.4 percent), followed by Chinese (33.5 percent) and Indian (12.3 percent). In terms of marital status, 60.8 percent of them are married and 38.9 percent are still single. Most of the employees hold a bachelors

degree, 21.0 percent of them are diploma holders and 33.5 percent have SPM or STPM. Majority of the employees have been trained at local educational and training institutions. Only 11.2 percent hold foreign academic qualifications.

Table 2: Employee Demographics Profile and Academic Qualifications

	Frequency	Percent
Gender		
• Male	145	43.4
• Female	189	56.6
Race		
• Malay	175	52.4
• Chinese	112	33.5
• Indian	41	12.3
• Others	6	1.8
Marital status		
• Bachelor	130	38.9
• Married	203	60.8
• Widow	1	0.3
Age	Min: 20 years Max: 56 years	Avg: 32 years
Academic qualification		
• MCE or HSC	112	33.5
• Diploma holder	70	21.0
• Bachelor degree	140	41.9
• Master degree	6	1.8
• PhD	-	
• Others	6	1.8
Type of educational institution		
• Foreign educational institution	26	7.8
• Local educational institution	274	81.2
• Not mention	37	11.0



As shown in Table 3, 13.5 percent of the employees earn less than MYR1,000 a month, 18.6 percent between MYR 1,001 and MYR 1,500, 17.4 percent between MYR 1,500 and MYR 2,000 and 24.0 percent between MYR 2,001 and MYR 2,500. Table 2 also indicates, on average their tenure in the current company is 6 years ( $M=5.82$ ,  $SD=4.837$ ), with the maximum 35 years service and minimum of one year. In terms of employment status 93.4 percent hold permanent posts, 3.0 percent hold a temporary posts and the rest are working on the contract basis.

Table 3: Current Salary and Employment Profile

	Frequency	Percent
Monthly Earning		
• Less than MYR1,000	45	13.5
• MYR1,001 – MYR1,500	62	18.6
• MYR1,501 - MYR2,000	58	17.4
• MYR2,001 – MYR2,500	80	24.0
• MYR2,501 – MYR3,000	44	13.2
• More than MYR3,001	45	13.5
Job's status		
• Permanent	312	93.4
• Temporary	10	3.0
• Contract	12	3.6
Work experience	Min: 1 years Max: 35 years	Avg: 6 years

### Participation in HRDF Training Program

The most popular training courses are management and supervisory (36.9 percent), followed by technical skills (15.0 percent), occupational health, safety and environmental protection courses (14.0 percent) and teamwork and motivation (13.6 percent). However a few of them attended communications and customer services and sales and marketing courses as shown in Table 4. Almost all employees

participate in short courses (less than 3 months). However 23.8 percent of those attended management and supervisory courses for 3 – 6 months and 25 percent attended more than 6 months. The types of training schemes are presented in Table 5. Only 14.0 percent of the respondents participate in approved training scheme (PROLUS) and 11.0 percent annual training plan scheme (PLT). As shown in the table, the subsidized training scheme (SBL) is considered as main choice of the training schemes.

Table 4: Type of Training Courses and Duration

	Frequency	Percent	Duration (percent)		
			Less than 3 months	3 – 6 Months	More than 6 months
Management and Supervisory	111	36.9	38.8	23.8	25.0
Technical skills	45	15.0	73.3	6.7	20.0
Occupational health, safety, and environmental protection	42	14.0	95.2	2.4	2.4
Teamwork & motivation	41	13.6	92.7	7.3	0.0
Communication & customer service	26	8.6	80.8	15.4	3.8
Sales and marketing	17	5.6	70.6	23.5	5.9
Others	19	6.3	94.4	5.6	0.0

Notes: n=301 and missing cases = 33.

Table 5: Type of Training Scheme

Scheme	Frequency	Percent
Subsidized training scheme (SBL)	201	66.8
Approved training scheme (PROLUS)	42	14.0
Annual training plan scheme (PLT)	35	11.6
Training provider agreement scheme (PERLA)	13	4.3

Others	10	3.3
--------	----	-----

Notes: n=301 and missing cases = 33.

### Effectiveness of the Training

This section describes perception of employees towards the training programs organized by HRDL. Table 6 indicates the mean of the employees' reactions towards the training programs. The summations of the training content (M=3.662, SD=0.491) and overall financing (M=3.369, SD=0.621) of the training yielded as moderate level. However, in terms of courses content relevancy and needed for the job were classified as high. The overall trainer quality level (M=3.757, SD=0.5334) is also high which is attributed by high score of each items under this variable.

Table 6: Training Reactions

	Mean	Std Deviation	Rank
Having what you need to do your job	3.8323	0.6590	High
A relevant of courses content	3.8114	0.6130	High
Suitable facilities for teaching and learning	3.5719	0.7589	Moderate
Does not duplicate what you learned previously	3.4311	0.8663	Moderate
<i>Overall training contents</i>	3.6617	0.4906	Moderate
Affordable training for employee and employers	3.6287	0.7433	Moderate
A costly form of training	3.2814	0.8552	Moderate
Received training allowances	3.1976	1.0207	Moderate
<i>Overall financing training</i>	3.3693	0.6211	Moderate
Effective presentation with audio visual	3.7305	0.7509	High
Received good guidance from trainers	3.7246	0.6903	High

Well qualified trainers/ instructors	3.8084	0.6750	High
Industrial based experience trainers/ instructors	3.7665	0.6884	High
<i>Overall trainers quality</i>	3.7575	0.5334	High

Notes: Mean classification: 1.00-2.32 = Low, 2.33-3.66 = Moderate, 3.67 – 5.00 = High

In terms of the learning outcomes perception, employees have high level improvement in overall cognitive competencies (M=3.8481, SD=0.5990) and overall technical competencies (M=3.704, SD=0.5850). All items in cognitive competencies enhancement shown in Table 7 are high. Meanwhile, only one item in overall technical competencies is classified high. However, the training program does not provide better improvement in employees capability in utilizing current technology (M=3.655, SD=0.713) adoption and application of new technologies (M=3.620, SD=0.737).

Table 7: Learning Outcomes

	Mean	Std Deviation	Rank
Enhanced understanding of job responsibilities	3.9581	0.7542	High
Enhanced understanding of task with latest knowledge	3.8174	0.7226	High
Improved understanding of the subject matter	3.8114	0.7536	High
Received hands-on work experience	3.8054	0.7640	High
<i>Overall cognitive competencies</i>	3.8481	0.5990	High
Able to work independently	3.8353	0.7671	High
Improved ability to utilize current technology	3.6557	0.7132	Moderate
Facilitated adoption and application of new technologies	3.6198	0.7367	Moderate
<i>Overall technical competencies</i>	3.7036	0.5854	High

Notes: Mean classification: 1.00-2.32 = Low, 2.33-3.66 = Moderate, 3.67 – 5.00 = High

There are seven items to measure behavioral changes. The mean of these items as shown in Table 8 reveals that the overall employees' level of work commitment (M=3.801, SD=0.568) and work respectfulness (M=3.745, SD=0.547) are high. Participants of the training show a high improvement in positive attitudes, work eagerness, teamwork within department and punctuality in work. Meanwhile, accuracy, thoroughness and reliability of products and services, compliance to the professional standards and respect to the top management decisions increased at same magnitude. Based on these items, it is indicated that employees have an improvement in the productive workplace behavior.

Table 8: Behavioral Changes

	Mean	Std Deviation	Rank
Positive attitudes towards work	3.8503	0.7071	High
Enhance work eagerness	3.8383	0.6650	High
Improved teamwork collaboration	3.8108	0.7859	High
Improved punctuality in work	3.7066	0.7213	High
<i>Overall work commitment</i>	3.8011	0.5681	High
Improved in accuracy, thoroughness and reliability	3.8473	0.7254	High
Stronger compliance to professional standards	3.8174	0.6481	High
Better respect to the top management decisions	3.7665	0.7266	High
<i>Overall work respectfulness</i>	3.7448	0.5468	High

Notes: Mean classification: 1.00-2.32 = Low, 2.33-3.66 = Moderate, 3.67 – 5.00 = High

The total score for employee's job performance is obtained from the summation of responses based on all the 6 item statements shown in Table 9. A higher score indicates a higher level improvement of employee job performance and inversely, a lower score indicates a lower level of employee job performance. The items with highest score in job performance are achievement in work target (M=3.754, SD=0.718) and improve product quality or service provided (M=3.716, SD=0.767) mainly within the company. However Table 9 shows reduce in product or service defects, customer

complaints, job hazards and equipment failure rate exhibited a moderate level. Although these items have slightly low mean score, the training impact for job performance (M=3.625, SD=.577) is considered moderate.

Table 9: Training Impact on Employee Job Performance

Description	Mean	Std Deviation	Rank
Achieve work target	3.7545	0.7184	High
Improve product quality or service provided	3.7156	0.7672	High
Reduce product/service defects	3.6228	0.7197	Moderate
Reduce customers complaints	3.6198	0.7992	Moderate
Reduce job hazards	3.6018	0.7980	Moderate
Reduce equipments failure rate	3.5240	0.7540	Moderate
<i>Overall</i>	3.6246	0.7745	Moderate

Notes: Mean classification: 1.00-2.32 = Low, 2.33-3.66 = Moderate, 3.67 – 5.00 = High

### **Training Impact on Job performance**

Table 10 exhibits the result of the estimation of the regression model for training impact on job performance. The overall training impact in model 1 shows a strong statistical significance, with  $\rho < 0.001$  and the R-square of 0.590. The model explains 59.0 percent of the variance in job performance. Multicollinearity does not appear to be a serious concern in both models since the VIFs for these variables are below 3.0 (Hair et al., 1995). The hypothesis assumes that the training inputs, learning process and behavioral changes are significantly associated with job performance. Table 4 shows that the training inputs attributes; training content [ $\beta = 0.113$ ,  $\rho < .05$ ], financing of the training programs [ $\beta = 0.122$ ,  $\rho < .05$ ] and trainers quality [ $\beta = 0.214$ ,  $\rho < .001$ ] are positively related to the dependent variable. In term of the learning process, a cognitive competence [ $\rho > .05$ ] is insignificant. While technical skills [ $\beta = 0.228$ ,  $\rho < .001$ ] is a significant predictor variable. Positive works related behavior mainly respect to the company management [ $\beta = 0.282$ ,  $\rho < .001$ ] and works commitment [ $\beta = 0.147$ ,  $\rho < .05$ ] are positive and significant predictors of employee's job performance in hotels, resort and

ICT companies. In the second model, we add-in demographics factor, academic qualification and works experience. The estimated coefficient of gender [ $\beta=0.097$ ,  $\rho<.05$ ] and current work experience [ $\beta=0.011$ ,  $\rho<.05$ ] are significant and positively related to the job performance. However, employee's age [ $\beta= - 0.007$ ,  $\rho<.01$ ] is significant and has an inverse related to the job performance. Meanwhile, years of schooling as proxy for academic qualification are not significant predictor of employee job performance.

Table 10: Multiple Regression Analysis of Training Impacts on Employee Job Performance

<i>Independent variables</i>	Model 1		Model 2	
	$\beta$	Std. error	$\beta$	Std. error
(Constant)	-.192	.193	-.100	.224
Training content	.113**	.053	.115**	.053
Financing training	.122***	.035	.105**	.036
Trainers quality	.214***	.052	.213***	.052
Cognitive competence	-.071	.050	-.079	.049
Technical skills	.228***	.054	.232***	.053
Respect	.282***	.063	.275***	.063
Work commitment	.147**	.060	.160**	.059
Gender			.097**	.043
Age			-.007*	.004
Years of Schooling			.005	.005
Current work experience			.011**	.005
R <sup>2</sup>	.590		.605	
Adjusted R <sup>2</sup>	.581		.591	
F	66.981***		44.831***	
N	334		334	

Notes: \*\*\*  $\rho<.001$ , \*\*  $\rho<.05$ , \*  $\rho<.01$ ; Dependent variable job performance.

## CONCLUSION

Management and supervisory and technical skills are the most popular training courses. A subsidized training scheme (SBL) is considered as main choice of the training schemes. Based on participant positive reactions, the training programs were designed match with employee needs and expectation. We have found clear empirical evidence that HRDL training programs improved the knowledge, skills and work behavior of workers. However, the training has moderate impact on employee's job performance. Most of training related variables are positively and significantly associated with employees' job performance except cognitive competence.

## Reference

- Al-Khayyat, R.M., and Elgamal, M.A. (1997). A macro model of training and development: Validation. *Journal of European Industrial Training*, 2(3), 87-101.
- Barnard, Y.F., Veldhuis, G.J., & Van Rooij, J.C.G.M. (2001). Evaluation in practice: Identifying factors for improving transfer of training in technical domains. *Studies in Educational Evaluation*, 27, 269-290.
- Claros, A.L., Porter, M. E., Martin, S.X and Schwab, K. (2007), *The Global Competitiveness Report 2007-2008*, New York: Palgrave McMillan.
- Claros, A.L., Porter, M.E and Schwab, K. (2005), *The Global Competitiveness Report 2005-2006*. New York: Palgrave McMillan.
- Cuthbert, P.F. (1996). Managing service quality in higher education: Is SERVQUAL the answer? Part 1. *Managing Service Quality*, 6(2), 11-6.
- Dumbrell, T. (2000). *Review of research: Measuring the outcomes of vocational education and training*. National Center of Vocational Education and Training (NCVER), Kensington Park: NCVER Ltd.
- Fong Chan Onn (2006), *Managing Human Capital in the Globalised Era*, Paper presented at the *11 Public Services Conference*, INTAN Bukit Kiara, Malaysia, August 21.
- Gabbard, L.C.R. (1981). *A costs effectiveness comparison of two types of occupational home economics programs in state of Kentucky*. ED215185.
- Garelli, S. (2002), *Competitiveness of Nations: The Fundamentals*, <http://members.shaw.ca/compilerpress1/Anno%20Garelli%20CN%20Fundamentals.html>, (accessed July 26, 2008).



- Gasskov, V. (2000). *Managing vocational training systems: A handbook for senior administrators*, Geneva: International Labor Office (ILO).
- George, D & Mallery, P. (2001). *SPSS for windows step by step: A simple guide and reference, 10.0 update*. Boston: Ally & Bacon.
- Grubb, W. N., & Ryan, P. (1999). *The roles of evaluation for vocational education and training*, London: Kogan Page.
- Hair, J.F. Anderson, R.E., Tatham, R.L. & Black, W.C. (1998). *Multivariate data analysis*. New Jersey: Prentice Hall International, Inc.
- Hanushek, E.A. (1986). The economics of schooling: production and efficiency in public Schools. *Journal of Economic Literature*, XXIV, 1141–1177.
- Hanushek, E.A. (1997). Assessing the effects of school resources on student's performance: An Update. *Educational evaluation and policy analysis*, 19(2),141–164.
- Hanushek, E.A. (2002). The importance of school quality. *Research paper*, National Bureau of Economic Research, Stanford University.
- Holton, E.F., & Trott, J.W. (1996). Trends toward a closer integration of vocational education and human resource development, *Journal of vocational and technical education*, 12(2). <http://scholar.lib.vt.edu/ejournals/JVTE/v12n2/holton.html>. (Accessed at 2 October 2002).
- HRDF. (2008). Annual report 2007. Kuala Lumpur: Ministry of Human Resource.
- HRDF.(2005). General guidelines on the human resources development fund. Kuala Lumpur: Ministry of Human Resource.
- IMD (2008), *World Competitiveness Yearbook 2008*. <http://www.imd.ch/research/publications/wcy/upload/scoreboard.pdf>, (accessed May 28, 2008).
- Kam, S.K., & Ka-shing Woo. (1997). Measuring service quality: A test-retest reliability investigation of SERQUAL. *Journal of the Market Research Society*, 39(2), 381-396.
- Kanapathy, V. (1997). Labour market issues and skills training: Recent development in Malaysia. Pacific economic cooperation council human resource development task force meeting, Montreal, Canada, 30-31 May.

- Ka-shing Woo. (1998). Developing a scale for measuring service quality perception in distance education. *Journal of Customer Service in Marketing & Management*, 4(4), 31–45.
- Kim, J. E., & Harris, R.C. (1976). A costs effectiveness analysis model for secondary vocational education programs. Technical report, Indiana University, Indianapolis, ED130081.
- Kirkpatrick, D. L. (1994). *Evaluating training programs – the four levels*, San Francisco: Berrett-Koehler Publishers, Inc.
- Kwan, P.Y.K., & Ng. P.W.K. (1999). Quality indicators in higher education: Comparing Hong Kong and China's students. *Managerial Auditing Journal*, 14(1/2), 20-27.
- Lynton, R., & Pareek. (2000). *Training for organizational transformation*. New Dehli: Sage publication.
- Malaysia. (2006). *The Ninth Malaysia Plan 2006-2010*, Putrajaya: Economic Planning Unit Prime Minister's Department.
- McCaslin, N.L (1990). A framework for evaluating local vocational education programs. *Information Series*, No 344, Ohio, ED327738.
- Nelson, O. (1993). *Conceptual framework for revising the secondary vocational education program evaluation system; Final report*. Center for Vocational, Technical and Adult Education. Stout Menomonie: Wisconsin University.
- Porter, M.E., Schwab, K and Martin, S.X. (2006), *The Global Competitiveness Report 2006-2007*, New York: Palgrave McMillan.
- Prime Minister's Department. (2008). Datuk Seri Abdullah Bin Haji Ahmad Badawi Speech at the Mid-Term Review Ninth Malaysia Plan 2006-2010, Putrajaya: Prime Minister's Department.
- Smith, E., & Wilson, L. (2002). School students' views on their working and learning in the workplace, Sydney: National Center For Vocational Education Research.
- Strickland, A., Simons, M., Harris, R., Robertson, I., Harford, M., & Edwards, A. (2001). *Evaluating on and off the job approach to learning and assessment in apprenticeships and traineeship*, Sydney: National Center for Vocational Education Research.

- Tan, H.W., and Gill, I. S. (2000), Malaysia, in .Gill, I. S., Fluitman, F and Amit Dar (eds), *Vocational Education and Training Reform*, New York: Oxford University Press. 218-260
- Velde C., & Cooper, T. (2000). Student's perspectives of workplace learning and training in vocational education, *Education and Training*, 42(2),83-92.
- Ziderman, A. (1997). National programmers in technical and vocational education: Economic and education relationships. *Journal of Vocational Education and Training*, 49(3), 351-366.