

Construct Validation of the Job Characteristics Scale in the Malaysian Public Service Setting

Johanim Johari, Daratul Ambia Che Mit, and Khulida Kirana Yahya*

A re-conceptualization of job characteristics is crucial due to the inconsistencies in the measures of this construct. Although many studies have conceptualized job characteristics as multidimensional construct, researchers have thus far provide inconclusive agreement on what factors should be included in measuring job characteristics. This study attempts to examine the psychometric properties of the job characteristics constructs by integrating the five subscales- skill variety, task identity, task significance, autonomy, and feedback. A priori proposition was made that the job characteristics measurement could be explained by five factors. SPSS version 12 and AMOS 4 were used to analyze the data. Findings supported the hypothesis that job characteristics can be measured by the aforementioned five factors. Findings also showed acceptable internal consistency reliability for the overall and the five specific subscales of the job characteristics factor.

Field of Research: Human Resource Management

1. Introduction

The Malaysian Public Service has the inherent responsibility of protecting national and public interests. It is to the interest of the nation and the public at large that the public service remains strong and competent at providing their services. Rising income and living standards, higher educational levels, a more diversified society, and a stronger consumer culture have increased the demand for higher quality public services in terms of greater choice, responsiveness, accessibility, and flexibility (Mohd Najib, 2006). In light of these challenges, the Malaysian Public Service has to strive to raise its productivity by working to produce a higher level of performance and focusing on the requirements of its stakeholders and clientele (Malek, 2006). Many scholars agreed that performance in the public service agencies is a heavy weight component of the national economy (Jabroun & Balakrishnan, 2000; Sanderson, 1996; Sarminah, 2005). Thence, the Malaysian Public Service has been responsive to the changing environment. It has managed to stay relevant by continually transforming itself to execute the entrusted roles to the satisfaction of its stakeholders and customers. Until today, the Malaysian Public Service has embarked on it high-performance journey in order to stay relevant and to optimize value creation. In 2004, Key Performance Indicators (KPIs) was introduced as a basis to benchmark the performance of the public sector and this circular requires all frontline agencies to develop and implement key indicators (Malaysian Public Service Department, 2007). The Government has

* Johanim Johari Daratul Ambia Che Mit, and Khulida Kirana Yahya, University Utara Malaysia, Malaysia

introduced a number of policies and programs towards reinforcing the need for a high performance workforce. In the same year, the National Integrity Plan and the Integrity Institute of Malaysia (IIM) was introduced to reduce corruption, mismanagement and abuse of power, to enhance the efficiency level in the public service delivery systems, and to improve corporate governance and business ethics (Malaysian Public Service Department, 2007).

Notwithstanding the tremendous reformation being made and great emphasis being placed on performance, the public service has so far failed to bring about the desired results, particularly in the service quality and delivery. In fact, there is a decline in the Malaysia Public Sector competence compared to other Asian countries. To illustrate, Malaysia has been ranked 28th place in the World Competitiveness Report from the Geneva-based Institute for Management Development (IMD) in 2005 ("IMD World Competitiveness Report", 2005). Comparatively, this ranking has dropped from the 18th place in 2004. In 2006, Malaysia Public Sector has managed to somewhat improve the ranking to the 22nd place, nonetheless the ranking in terms of government efficiency has deteriorated from the 16th place in 2004 to the 26th in 2006 ("IMD World Competitiveness Report", 2006). In fact, the overall ranking has dropped slightly to the 23rd place in 2007 ("IMD World Competitiveness Report", 2007). Among the perceived weaknesses are lack of communication skills among civil servants, lack of leadership commitment in managing human resources at the agency level, resistance to change among the public sector employees, difficulty in handling and dealing with poor performers due to the lack of an exit policy, over-centralized decision making, lack of systematic succession planning that leads to unclear career paths, and lack of focus on human resource management by the top management in the agencies (Malek, 2006). Apparently, these problems rooted in the poor performance among the government officials.

This is supported by Siddiquee (2006), who claimed that public service agencies in Malaysia has long been criticized for its inflexibility, ineffective accountability, and poor performance among the officials. The bleak picture is evident when the Malaysian Public Service has recorded 58 percent increase in formal complaints from the public (Siddiquee, 2006). In 2005, a total of 2,707 complaints were received with regard to the public service poor performance, such as delays in service provision, unfair actions/decisions of the administrators, abuse of power, misconduct of the officials, and failure to enforce rules. Even though the number of complaints has dropped slightly from 2,792 in 2004 to 2,707 in 2005, it should be noted that complaints on unsatisfactory quality of service have almost doubled from 2.91 to 4.43 percent (Malaysian Public Complaints Bureau, 2005). Further, the overall number of complaints has dropped from 3,397 in 2006 to 2,378 until September 2007. However, the number of complaints on unsatisfactory service quality has tripled to 15.60 and 15.53 percent in 2006 and 2007 respectively, compared to the preceding years (Malaysian Public Complaints Bureau, 2007).

According to the Theory of Performance by Campbell, there are two major determinants of performance, namely motivation and ability. These factors are also known also the "person factors" in which performance are determined solely by the criteria of an individual (as cited in Williams, 2002). Later, Cardy and Dobbins and Waldman improved the theory by adding in the "system factors" as the antecedents of individual performance (as cited in Williams, 2002). In specific, "system factors" deals with factors

in the organizational environment and work design that may affect individual performance (Williams, 2002). This study examines the job characteristics as the “system factors” that may influence employees’ outcome. Further, the Job Characteristics Theory of Motivation by Hackman and Oldham (as cited in Gomez-Mejia, Balkin, & Cardy, 2007) explains that positive job characteristics will bring about three critical psychological states, namely, experienced meaningfulness, experienced responsibilities, and knowledge of results. These situations will eventually lead to positive workplace outcomes, such as higher work motivation, organizational commitment, and job satisfaction (Morgeson & Campion, 2003; Gomez-Mejia et al. 2007).

The importance of job characteristics construct in measuring behavioral and attitudinal outcomes is evident, yet lacking (Kuehn & Al-Busaidi, 2002; Morgeson, Michael, Campion, Medsker, & Mumford, 2006). For instance, Yagil (2002) discovered that job characteristics have great influence on employees’ behavior, compared to other predictors, such as leadership. Job characteristics originate from the Job Characteristics Model by Hackman and Oldham (as cited in Bohlander & Snell, 2007), which posits that job design have a significant influence on individual job performance at work. This proposition fits the revised model of job design developed by Garg and Rastogi (2006), which revealed that job characteristics have a substantial impact on employee performance. Findings by Moideenkutty et al. (2005) explicitly indicated that job performance can be enhanced when a certain job gives more autonomy and challenge to employees. This is congruent with the result of an earlier investigation on job characteristics and employee performance conducted by Ardalan, Quarstein, and McAfee (1994). Kuehn and Al-Busaidi (2002) and Morgeson et al. (2006) asserted that aspects related to job characteristics have not been well-researched in the job performance studies. It is also noteworthy that job characteristics of employees at all levels vary widely, and therefore, job characteristics should be an important antecedent in determining job performance (Organ et al. 2006). In fact, Job Characteristics Model by Hackman and Oldham (as cited in Bohlander and Snell, 2007) illustrated that jobs that are highly structured and defined by formal and inflexible organizational systems limit skill variety and task identity and eventually exacerbate employee performance.

1.1 Research Questions

Studies on job characteristics have adopted various different measures in capturing the job characteristics construct. As such, there is a need to develop a more comprehensive instrument that can capture clearly the job characteristics construct. This study therefore seeks to gather findings based on the following research questions:

1. What is the internal consistency reliability of each dimension in the job characteristics construct?
2. Does the job characteristics instrument have a good construct validity properties to be used for future studies in Malaysia?

1.2 Objectives of the Study

This study examined the construct validity of the job characteristics items in the Malaysian Public Service agencies setting by integrating five subscales- skill variety, task identity, task significance, autonomy, and feedback, as suggested in the literature. We examined the construct validity of the job characteristics instrument which is also

served as a preliminary investigation of the psychometric properties of the Malay language version of the job characteristics instrument with a sample of respondents from the Malaysian Public Service agencies. In specific, the objectives of this study were twofold: firstly, to assess the internal consistency reliability of the job characteristics dimensions and the total score, and secondly, to assess the construct validity of the job characteristics instrument utilizing exploratory and confirmatory factor analytic procedures. The items and dimensions of job characteristics scale were developed and also adapted based on the existing instruments that assessed the five dimensions of job characteristics: skill variety, task identity, task significance, autonomy, and feedback.

2. Literature Review

2.1 Conceptualization of Job Characteristics

According to Morgeson et al. (2006), the earliest version of job characteristics dimensions was developed by Turner and Lawrence, which include the aspects of dealing with others and friendship opportunities. However, these two dimensions were later omitted because it is not centrally related to the job characteristics construct. Most studies on job characteristics adopt the job characteristics model developed by Hackman and Oldham (Morgeson et al. 2006). This model incorporates five dimensions of job characteristics, namely task identity, skill variety, task significance, autonomy, and feedback. The first three dimensions determine whether or not a certain job are meaningful to the job incumbent while autonomy and feedback are useful to tap the level of autonomy and feedback that the job incumbent has acquired from his or her job. Job characteristics model asserts that a job will have influence on an employee's performance when the person performing the job experiences the three psychological states.

The three principal psychological states are a) experienced meaningfulness, b) experienced responsibility and c) experienced knowledge of his or her performance. Consistent with the assertions of job characteristics model, researchers in the field of creativity have identified that the design of jobs as an important component that needs to be addressed when managing for creativity (Amabile, 1988; Oldham & Cummings, 1996). Jobs that are designed with high complexity characterized by high levels of autonomy, skill variety, identity, significance and feedback can have positive impact on employees' performance (Oldham & Cummings, 1996). When jobs are complex, individuals performing the job are likely to be excited and more interested to engage in and complete the work activities. As a result, employees are more likely to concentrate all of their attention and effort on their job making them more open and willing to try out new ideas and consider different alternatives. This will later lead to a better job performance (Oldham & Cummings, 1996; Shalley & Gilson, 2004). As such, this study adopts the job characteristics dimensions developed by Hackman and Oldham due to its comprehensiveness in providing appropriate meaning to this particular construct.

2.2 Outcomes of Job Characteristics

The design of job has long been considered an important influence on individuals' intrinsic motivation and later lead to higher job performance level of employees (Amabile, 1985, 1988; Kanter, 1988; George & Zhou, 2001; Oldham & Cummings, 1996; Tierney & Farmer, 2002; McCrae, 1987; Ruscio, Whitney & Amabile, 1998; West & Farr, 1989). Autonomy, feedback, skill variety, task significance and task identity have been proposed as dimensions of job factors that affect employee performance (Oldham & Cummings, 1996; Tierney & Farmer, 2002). The Job Characteristics Model, developed by Oldham and Hackman (1980), purports that individual performance can be enhanced when he/she perceives that his/her job entails the aforementioned five main characteristics.

A study done by Oldham and Cummings (1996) found that employees produce more novel and useful suggestions when they are involved in more complex jobs. Similarly, Tierney and Farmer (2002) also established positive association between job complexity and creative self-efficacy which later transforms into high performance. These findings are also consistent with finding from studies by Shalley, Gilson and Blum (2000) which suggested that autonomy, complexity and high demand were positively associated with high level of performance among employees. Behavioral scientists attempted to identify and explain various job dimensions that would influence performance of people who perform the jobs. The theory that best exemplifies these attempts perhaps is the one put forth by Hackman and Oldham (1980). The job characteristics model suggests that there are five core job dimensions namely autonomy, skill variety, task identity, task significance and feedback. Core job dimensions refer to the underlying characteristics of a job and how these factors affect job outcomes such as performance, involvement, motivation and satisfaction (Cook & Hunsaker, 2001).

Bhuan and Menguc (2002) explored the new configuration of job characteristics, organizational commitment, and job satisfaction. This was done by examining the interactive effect of job characteristics and organizational commitment among expatriate salespersons. This investigation offers interesting findings because respondents reported higher level of satisfaction if they perceive their job provides higher level of autonomy, identity, and feedback. Conversely, task variety does not have a positive impact on the respondents' satisfaction level. With a higher level of satisfaction, respondents were also reported to have a higher level of organizational commitment. A study conducted earlier by Bhuan, Al-Shammari, and Jefri (1996) echoed the similar findings that job autonomy, task identity, and feedback have impacted job satisfaction, while task variety has influenced employees' commitment. Earlier, Anderson (1984) examined the same variables and reported similar findings that job autonomy, task identity, and feedback affect employees' job satisfaction. This study also indicates that autonomy and feedback are related to task performance, but not other dimensions of job characteristics. It is also important to note that this study indicates no relationship exists between job characteristics and absenteeism. Given the findings, it is crucial to give emphasis on the job design aspects, particularly autonomy and feedback, in promoting positive job attitudes, such as commitment and satisfaction, among employees. On the contrary, a longitudinal study by Rentsch and Steel (1998) reveals a significant correlation on the job characteristics-absenteeism relationship. It was found that job characteristics are the predictor of time-lost and absence frequency among the civilian employees in a large military organization. In fact, competence and need for

achievement do not moderate the relationship between job characteristics and absenteeism. According to Lau and Pavett (1980), job characteristics, especially for the management positions, are very much alike. Hence, the contradictory findings reported by Rentsch and Steel (1998) are perhaps attributed to the different nature of the organization in which the study has been carried out. Unlike the study by Anderson (1984), Rentsch and Steel (1998) conducted the study in a large military organization. Therefore, civilians in such organization have a higher tendency to be absent from job if their job do not provide positive job design, such as high level of autonomy, variety of tasks, and adequate feedback.

Further, an empirical investigation by Chang and Lee (2006) in the manufacturing, banking, and service industries revealed that personality traits and job characteristics have a positive and significant influence on organizational commitment as well as job satisfaction. On the contrary, Thomas, Buboltz, and Winkelspecht (2004) discovered that personality has neither influenced job satisfaction nor moderated the job characteristics and job satisfaction relationship. Given the findings, Thomas et al. (2004) suggested that personality traits bear little importance in redesigning job and enhancing job satisfaction among employees in all of industries examined. In contrast, Schneider (2003) concurred that job characteristics have impacted managers' commitment and satisfaction. Similarly, Sanker and Wee (1997) conducted a study on job characteristics-job satisfaction association in three different countries and they reported that job characteristics influenced job satisfaction of the respondents in all of the countries.

Based on the above reviews of literature, it can be concluded that many empirical studies were done to examine the outcome of job characteristics to various organizational constructs. This indicates that job characteristics are an important construct in examining various organizational or job outcomes.

3. Methodology

3.1 Procedures

Self-administered questionnaires were distributed to the respondents in four public agencies in the state of Kedah, Malaysia. This method was chosen in generating primary data because a well-designed questionnaire provides high level of accuracy (Hair, Money, Samouel, & Page, 2007) The researchers went to each agency and gave the questionnaires personally to the chief clerk of each department, who were contacted prior to the researchers' visit. They were briefed on the research objectives and guidelines in answering the questionnaires. A total of 200 questionnaires were distributed and 103 were returned. However, only 100 questionnaires were usable for data analysis.

3.2 Respondents

Respondents were 100 public servants from four government agencies in the state of Kedah. A total of 61 of the respondents are male and 39 are female. Because the Malaysian Public Service agencies in Kedah are predominantly Malay-populated, all of the respondents participated in this study were Malays. Most of the respondents were the exempt employees, which made up 63.0 percent (63) while 37.0 percent (37) of the respondents were non-exempt employees. Questionnaires were given out to the

respondents to answer 15 items on job characteristics.

3.3 Back Translation Of The Items

The translation of the original English version of the questionnaire into Bahasa Malaysia was accomplished through back translation procedure. Based on guidelines by Brislin (1970), four different bilingual language experts were employed- two for translating from the source to Bahasa Malaysia, and the other two experts retranslated the items into English. Decentralization was also conducted indicating that the source and the target language version are equally important during the translation procedure (Brislin, 1970). Revision indicated no discrepancies between the English and Bahasa Malaysia version of the questionnaire. We also discussed and verified the items with officers and clerical staff from the Malaysian government agencies.

3.4 Measurement of Job Characteristics

The job characteristics scale was assessed with five subscales: skill variety, task identity, task significance, autonomy, and feedback. All items were rated on a seven-point Likert scale, namely 1=very disagree, 2=disagree, 3= slightly disagree, 4=moderate, 5= slightly agree, 6= agree, 7= very agree. To determine the score of this scale, ratings within each scale are summed and divided by the total number of items in that particular scale. Negative statement items on the instrument were reverse-coded so that a high score on the instrument indicates a high degree of job characteristics for the respondents.

Job characteristics is the job design that purports three psychological states of a job incumbent, namely meaningfulness of the work performed, responsibility for the work outcomes, and knowledge of the results of the work performed, which will yield positive outcomes. All of the items were adapted from Hackman and Oldham (1975).

Skill variety assessed whether or not a job entails various activities, which requires the incumbent to demonstrate a number of different skills (e.g. "This job requires me to do many different things at work using a variety of skills and talents"), *task identity* measured whether or not a job demands completion of a whole and identifiable piece of work, which is performing a certain job from the beginning to an end with a visible outcome (e.g. "The job involves doing a whole and identifiable piece of work with an obvious beginning and end."), and *task significance* assessed the level in which a job has a significant effect on the lives or work of others, be it in the immediate organization or in the external environment (e.g. "The job is one where a lot of other people can be affected by how well the works get done."). *Autonomy* examined whether or not a job gives substantial freedom, independence, and discretion to the individual in planning the work and in determining the procedures to be used in performing it (e.g. "This job gives me the chance to use my personal initiative and judgment in carrying out the work.") and *feedback* measured the extent to which the performing work activities required by the job results in the individual being given direct and clear information about the effectiveness of the job holder's performance. (e.g. "After I finish a job, I know whether or not I have performed well.").

4. Results

Exploratory and confirmatory factor analyses and internal reliability consistencies and mean were employed to examine the factor structure of the job performance measurement scale. In this study, items for each observed variable was used to identify each of its latent variables.

4.1 Reliability

Table 1 presents the results of the internal consistency reliability and mean, and standard deviation for the total score and each subscale. Cronbach's alpha values are within the ranges of 0.606 and 0.818 for all the five subscales. The overall internal consistency reliability for the Job Characteristics scale was 0.756.

Table 1: Summary Statistics for Job Characteristics and Cronbach's Alpha

Job Characteristics	# of items	Mean	α
Skill variety	3	4.447	0.614
Task identity	3	4.557	0.626
Task significance	3	5.560	0.606
Autonomy	3	4.617	0.818
Feedback	3	5.607	0.793
Overall Job Characteristics	15	4.963	0.756

4.2 Exploratory Factor Analysis

An exploratory factor analysis was carried out to examine the factorial validity of the Bahasa Malaysia adaptation of the job characteristics items. Exploratory factor analysis was conducted using principal axis factoring extraction with oblique rotation and *a priori* criteria of five factors were extracted based on the previous studies. However, four items (item 3 of skill variety, task identity, task significance, and autonomy subscales respectively) were omitted from further analysis due cross or low factor loading, i.e. less than 0.55 based on the 100 sample size (Hair, Black, Babin, Anderson, & Tatham, 2006)

Table 2: Factor Loadings for Job Characteristics

Items		Factor Loading				
SV1	This job requires me to do many things at work using a variety of skills and talents.	0.832				
SV2	This job requires me to use a number of complex or high level skills.	0.772				
TI1	This job involves doing whole and identifiable piece of work with an obvious beginning and end.	0.871				
TI2	This job provides me the chance to completely finish the pieces of work I begin.	0.572				
TS1	The result of my job is likely to significantly affect the lives or wellbeing of other people.			0.623		
TS2	This job is one where a lot of other people can be affected by how well the works get done.			0.593		
AU1	This job permits me to decide on my own on how to go about doing the work.				0.913	
AU2	The job gives me considerable opportunity for independence and freedom in how I do the work.				0.884	
FD1	Besides feedback from my co-workers, this job actually provides clues on how well I am doing my work.					0.699
FD2	Just doing the work required by the job provides many chances for me to figure out how well I am doing.					0.728
FD3	After I finish a job, I know whether or not I have performed well.					0.641
Eigen Value		6.120	3.053	2.471	1.915	1.427
Variance Explained		29.402	14.669	11.871	9.199	6.857
Alpha		0.614	0.626	0.606	0.818	0.793

4.3 Confirmatory Factor Analysis

A confirmatory factor analysis was conducted to identify the validity of the job characteristics construct. The standardized estimates are reported to interpret parameters in the measurement model. Both absolute and incremental fit statistics were used to establish the model fit. Traditional chi-square test and the root mean square error of approximation (RMSEA) were chosen to indicate the absolute fit statistics. Two incremental statistics used were Tucker Lewis Index and the Comparative Fit Index.

The values of Normed fit Index (NFI), Tucker-Lewis Index (TLI), and Comparative fit Index (CFI) can be between 0 to 1 and values greater than 0.90 and 0.95 reflected an acceptable and excellent fits to the data and the RMSEA values at or less than 0.05 and 0.08 indicated a close and reasonable fit. The Chi-Square Goodness-of-fit statistics with 34 degree of freedom was 44.405. The value of NFI is 0.903, GFI is 0.927, and TLI is 0.958. Figure 1 shows that all loadings of items on their targeted factors were high, statistically significant, and above 0.55 the cutoff point used in the exploratory factor analysis. The five factors are correlated with the correlation value ranging from 0.18 to 0.59 suggesting that these factors are interrelated but relatively are orthogonal of one another.

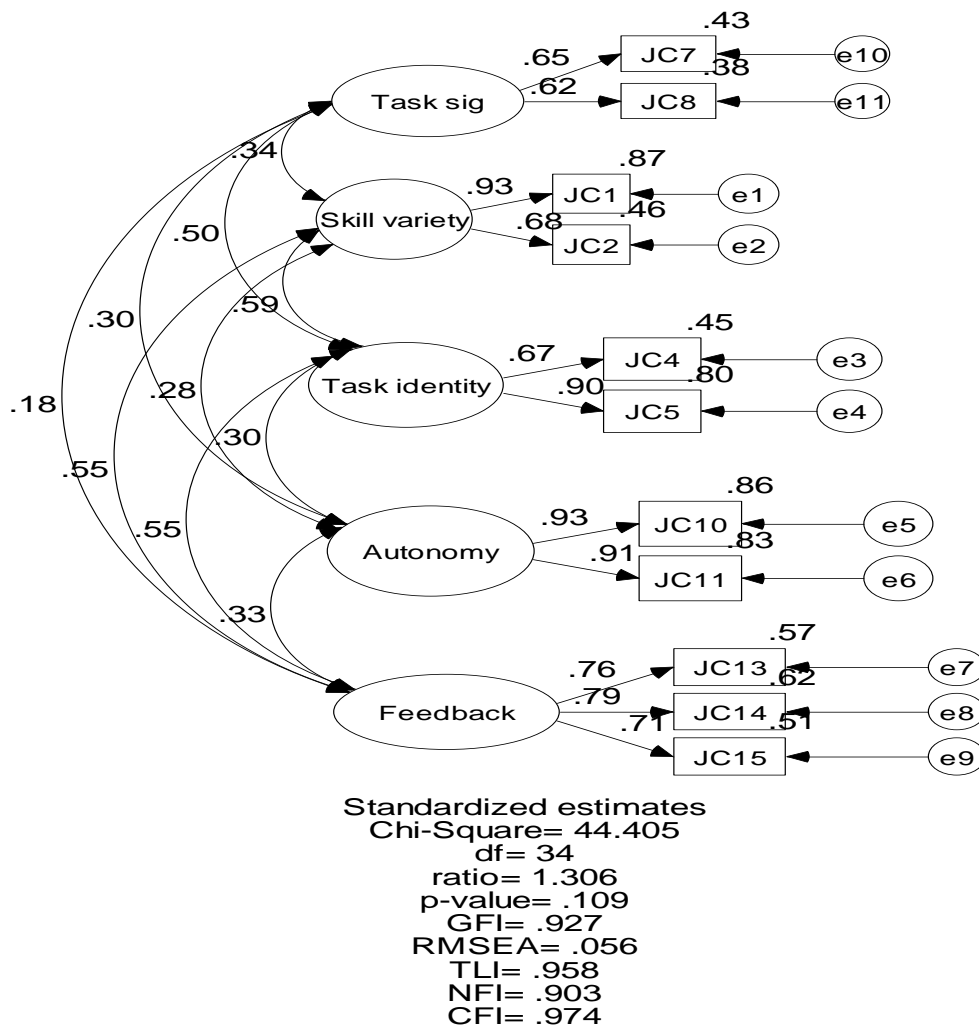


Figure 1: A first order measurement model for job characteristics. Latent constructs are shown in ellipses and observed variables are shown in rectangles.

5. Concluding Remarks

This instrument can be used in the Malaysian studies because findings showed the evidence of construct validity of the job characteristics items. Results of this study also

reported coefficient alphas were more than 0.60 for all subscales and exploratory factor analysis indicated support for the factorial validity of the job characteristics scale. Such findings suggest acceptable reliability and validity of the instrument. Further, confirmatory factor analysis provided the evidence of construct validity based on tests of significance and assessment of the measurement model fit. Thus, five subscales of job characteristics can be useful instruments in examining the job design construct in Malaysian setting. This study has given a significant contribution in terms of construct development of a more comprehensive job characteristics measure. Given the psychometric properties of the instruments, which are very acceptable i.e. both constructs equal or exceed the measurement levels, this instrument can be used by Malaysian researchers in measuring job characteristics as all of the items measures the construct it was supposed to measure.

6. References

- Amabile, T. M. 1988. "A model of creativity and innovation in organizations", *Research in Organizational Behavior*, Vol 10, pp. 123-167.
- Amabile, T.M. 1985. "Motivation and creativity: effects of motivational orientation on creative writers", *Journal of Personality and Social Psychology*, Vol 48 No 2, pp. 393-399.
- Amabile, T. M., Conti, R., Coon, H., Lazenby, J. and Herron, M. 1996. "Assessing the work environment for creativity", *Academy of Management Journal*, Vol 39 No 5, pp. 1154-1184.
- Anderson, C. H. 1984. "Job design: Employee satisfaction and performance in retail stores", *Journal of Small Business Management*, Vol 22 No 4, pp. 9-16.
- Ardalan, A., Quarstein, V. A. and McAfee, B. R. 1994. "Enhancing performance through employee discretion and feedback", *Industrial Management & Data Systems*, Vol 94 No 10, pp. 15-19.
- Bhuain, S. N., Al-Shammari, E. S. and Jefri, O. A. 2001. "Work-related attitudes and job characteristics of expatriates in Saudi Arabia", *Thunderbird International Business Review*, Vol 43 No 1, pp.21-31.
- Bhuain, S. N. and Menguc, B. 2002. "An extension and evaluation of job characteristics, organizational commitment, and job satisfaction in an expatriate, guest worker, sales setting", *The Journal of Personal Selling and Sales Management*, Vol 22 No 1, pp. 1-11.
- Bohlander, G. and Snell, S. 2007. Managing human resources, South-Western College Publishing, Ohio.
- Brislin, R. W. 1970. "Back-translation for cross cultural research". *Journal of Cross Cultural Psychology*, Vol 1, pp.185-216.
- Chang, C. S. and Lee, M. S. 2006. "Relationships among personality traits, job characteristics, and organizational commitment: An empirical study in Taiwan", *The Business Review, Cambridge*, Vol 6 No 1, pp. 201-207.

Johari, Mit & Yahya

Cook, C. W. and Hunsaker, P. L. 2001. Management and Organizational Behavior, Mcgraw-hill, Boston.

Farr, J. L. 1995. "Does feedback enhance or inhibit creativity?" in Ford, C. M. and Gioia, D. A. (Eds.) *Creative Action in Organization: Ivory Tower Visions and Real World Voices*, Sage Publications, London.

Garg P. and Rastogi, R. 2006. "Climate profile and OCBs of teachers public and private schools of India", *International Journal of Educational Management*, Vol 20 No 7, pp. 529-541.

George, J. M. and Zhou, J. 2001. "When openness to experience and conscientiousness are related to creative behavior: An interactional approach", *Journal of Applied Psychology*, Vol 86 No 3, pp. 513-524.

Gomez-Mejia, L. R., Balkin, D. B. and Cardy, R. L. 2007. Managing human resources Pearson Education, New Jersey.

Hackman, J. R. and Oldham, G. R. 1980. Work redesign, Addison-Wesley, Massachusetts.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., and Tatham, R. L. 2006. Multivariate data analysis. Pearson Education, New Jersey.

Hair, J. F., Money, A. H., Samouel, P., and Page, M. 2007. Research methods for business. John Wiley & Sons, Chichester:

IMD world competitiveness report, 2005. "IMD World Competitive Center", Retrieved February 21, 2007, from http://www.imd.ch/research/publications/wcy/wcy_online.cfm?mrk_cmpg_source=1007138&bhcp=1

IMD world competitiveness report, 2006. "IMD World Competitive Center", Retrieved February 21, 2007, from http://www.imd.ch/research/publications/wcy/wcy_online.cfm?mrk_cmpg_source=1007138&bhcp=1

IMD world competitiveness report, 2007. "IMD World Competitive Center", Retrieved November 4, 2007, from http://www.imd.ch/research/publications/wcy/wcy_online.cfm?mrk_cmpg_source=1007138&bhcp=1

Kanter, R. M. 1988. "When a thousand flowers bloom: Structural, collective, and social conditions for innovation in organizations". *Research in Organizational Behavior*, Vol 10, pp. 169-211.

Kreitner, R. and Kinicki, A. 1998. Organizational Behavior, McGraw-Hill, Boston.

Kuehn, K. M. and Al-Busaidi, Y. 2002. "Citizenship behavior in a non-western context: An examination of the role of satisfaction, commitment, and job characteristics on self-reported OCB", *International Journal of Commerce and Management*, Vol 12 No 2, pp. 107-125.

Lau, A. W. and Pavett, C. M. 1980. "The nature of managerial work: A comparison of public-and private-sector managers", *Group and Organization Studies*, Vol 5 No 4, pp. 453-466.

Malaysian Public Service Department, 2007. Maklumat perjawatan dan pengisian sektor awam. Putrajaya: Author. Retrieved 4 March, 2007, from <http://www.jpa.gov.my/i-mapsa/Default.aspx?alias=www.jpa.gov.my/i-mapsa/perangkaan>

Malek, S. 2006, August 21. "Transforming human capital for public service excellence in the 21st century", Speech presented for the 11th Civil, Service Conference, National Institute of Public Administration, Bukit Kiara, Kuala Lumpur.

McCrae, R. R. 1987. "Creativity, divergent thinking and openness to experience" *Journal of Personality and Social Psychology*, Vol 52 No 6, pp.1258-1265.

Mohd Najib, A. R. 2006, August 21. "Developing human capital: Towards achieving service beyond the ordinary", Speech presented for the 11th Civil, Service Conference, National Institute of Public Administration, Bukit Kiara, Kuala Lumpur.

Moideenkutty, U. Blau, G. Kumar, R. and Nalakath, A. 2006. "Comparing correlates of organizational citizenship and in-role behavior of sales representative in India", *International Journal of Commerce and Management*, Vol 16 No 1, pp.15-28.

Morgeson, F. P. Michael, J. D. Campion, M. A. Medsker, G. J. and Mumford, T. V. 2006. "Understanding reactions to job redesign: A quasi-experimental investigation of the moderating effects of organizational context on perceptions of performance behavior", *Personnel Psychology*, Vol 59, pp. 333-363.

Oldham, G. R. and Cummings, A. 1996. "Employee creativity: Personal and contextual factors at work", *Academy of Management Journal*, Vol 39 No 3, pp. 607-634.

Organ, D. W., Podsakoff, P. M. and MacKenzie, S. B. 2006. Organizational citizenship behavior: Its nature, antecedents, and consequences, Sage Publications, California.

Rentsch, J. R. and Steel, R. P. 1998. "Testing the durability of job characteristics as predictors of absenteeism over a six-year period", *Personnel Psychology*, Vol 51 No 1, pp. 165-190.

Ruscio, J., Whitney, D. M. and Amabile, T. M. 1998. "Looking inside the fishbowl of creativity: Verbal & behavioral predictors of creative performance". *Creativity Research Journal*, Vol 11 No 3, pp. 243-263.

Sanderson, I. 1996. "Evaluation, learning, and the effectiveness of public services", *International Journal of Public Sector Management*, Vol 9 No 5/6, pp. 90-108.

Sanker, C. S. and Wee, Y. Y. 1997. "Factors influencing job satisfaction of technical personnel in the U.S, Singapore, and India", *Engineering Management Journal*, Vol 9 No 3, pp.15-21.

Johari, Mit & Yahya

Sarminah, S. 2005. "Unraveling the organizational commitment and job performance relationship: Exploring the moderating effect of job satisfaction", *The Business Review, Cambridge*, Vol 4 No 20, pp. 79-84.

Schneider, S. E. 2003. Organizational commitment, job satisfaction, and job characteristics of managers: Examining the relationships across selected demographic variables. Unpublished doctoral dissertation, New York University, New York.

Shalley, C. E. and Gilson, L. L. 2004. "What leaders need to know: A review of social and contextual factors that can foster or hinder creativity", *The Leadership Quarterly*, Vol 15, pp. 33-53.

Shalley, C. E., Gilson, L. L. and Blum, T. C. 2000. "Matching creativity requirements and the work environments: Effects on satisfaction and intention to leave", *Academy of Management Journal*, Vol 43 No 42, pp. 215-223.

Siddiquee, N. A. 2006. "Public management reform in Malaysia". *International Journal of Public Sector Management Journal*, Vol 19 No 4, pp. 339-358.

Stafford, S. P. 1998. "Capitalizing on careabouts to facilitate creativity", *Creativity and Innovation Management*, Vol 7 No 3, pp. 159-167.

Thomas, A., Buboltz, W. C. and Winkelspecht, C. S. 2004. "Job satisfaction and personality as predictors of job satisfaction". *Organizational Analysis*, Vol 12 No 2, pp. 205-218.

Tierney, P. and Farmer, S. M. 2002. "Creative self-efficacy: Its potential antecedents and relationships to creative performance", *Academy of Management Journal*, Vol 45 No 6, pp. 1137-1146.

West, M. A. and Farr, J. L. 1989. "Innovation at work: psychological perspective", *Social Behaviour*, Vol 4, pp. 173-184.

Yagil, D. 2002. "Substitution of a leader's power bases by contextual variables", *International Journal of Organizational Theory and Behavior*, Vol 5 No 3, pp. 383-399.