



## **Relationship between Work Autonomy and Job Satisfaction among IT Staff: Self-Efficacy as Moderator**

Sayed Hafizh<sup>1</sup> and Syed Sohail Imam<sup>2</sup>  
International Islamic University Malaysia

### **Introduction**

Job design research that emerged in 1980's through the influence of Herzberg's hygiene theory in 1950's, until now still holds significant attention. It has become a topic of interest in the management, specifically on how job motivates and ultimately provides satisfaction to workers. Despite many criticisms regarding the construct, Job Characteristics Model by Hackman and Oldham (1980) still remains one of the most popular construct in job design. Since its beginning in 1980s, job design has resulted in a number of researches investigating the relationships between work characteristics and work behavior outcomes, and findings have been implemented in job redesign attempts.

Work autonomy is considered as one of the most important characteristics of work (Cordery & Wall, 1985) and perhaps one of the most widely studied work characteristics (Morgeson & Humphrey, 2006). Several studies have been conducted to investigate how work autonomy is related to certain work outcomes. The concept of employee autonomy has obtained increased focus in research, as well as in management implementation. This is due to the perceived overall benefit that it brings, not only to the individuals, but also to the corporate, that strive for low-cost management, flexibility and agility, effective and efficient operations, as provision of work autonomy would mean less middle managers (Benson & Lawler, 2005).

Hackman and Oldham (1980) defined autonomy as 'the degree to which the job provides substantial freedom, independence, and discretion to the individual in scheduling the work and in determining the procedures to be used in carrying it out'. According to Hackman and Oldham the work autonomy characteristic elicits the psychological states of experienced responsibility. The Sociotechnical Systems approach, too, put a great emphasis on the importance of work autonomy, this can be seen from one of the suggestions the theory put forward, i.e. the establishment of autonomous work groups. According to the Sociotechnical Systems approach work groups should be able to decide on their own methods of working and should be responsible for handling as many as possible of the operational problems they encounter, similarly the case with individual team member, in which one of the desirable work characteristics is that individuals should have an area of decision making they call on their own (Parker & Wall, 1998). On the concept of empowerment, Spreitzer (2007) summarized that empowerment is a result of an integration of contextual factors at work involving the provision of participative management as well as the psychological empowerment that individual workers feel in sensing the control in relation to their work. Likewise, the Demand-Control Model posits that autonomy is an important factor that can determine the well-being of workers. Karasek and Theorell (1990) refer to this concept as decision latitude, or control over environment that would influence one's action.

---

<sup>1,2</sup> Department of Psychology Kulliyah of Islamic Revealed Knowledge and Human Sciences



It is evident that work autonomy plays a major role in design of work. Research has come up with different terms explaining similar concept, which includes industrial democracy, participative management, employee involvement, employee engagement, employee discretion, self-managing teams, empowerment, and many others. Becker and Gerhart (1996) (as cited in Benson & Lawler, 2005) found 27 different variables in a review of five studies, in which concepts are commonly categorized as that of putting the power to make decisions in the hands of employees, as well as provision of incentives to take responsibility for their jobs and the skills or information needed to make informed decisions.

Research has found that work autonomy leads to job satisfaction (Hackman & Oldham, 1980), reduces occupational strain when work demand is in balance with decision latitude (Karasek, 1979), and positively correlates with role breadth and job performance (Morgeson, Delaney-Klinger & Hemingway, 2005).

### **Purpose of Research**

Criticisms to job design research, particularly the Job Characteristics Model, has pointed to the narrow focus of the model and it does not systematically consider mechanism underlying work design; it does not include adequate range of work characteristics and does not place enough emphasis on other important aspects of work or contingencies that might affect employees' well-being (Parker & Wall, 1998, 2001). Job Characteristics Model has highlighted the importance of differences among people and proposed that the growth-need strength, knowledge and skills, and context satisfaction, condition the relationship between job characteristics and work outcome as moderators (Hackman & Oldham, 1980). While growth-need strength has received the most attention as moderator, little attention has been given to the influence of knowledge and skills of employees to the relationship (Johns, Xie, & Fang, 1992; Parker & Wall, 1998, 2001). Parker and Wall (1998) also noted that potential individual differences such as self-efficacy, among others, have received little attention.

This study, therefore, seeks to fill the gap in the literature by investigating the mechanism of knowledge and skills, as measured with self-efficacy, as moderator of the relationship between work autonomy and job satisfaction.

This study will specifically investigate the relationship between work autonomy and job satisfaction using university IT staff as participants. As has been stated by Cummings and Blumberg (as cited in Parker and Wall, 2001), work autonomy works best in a work environment where technical uncertainty and environmental uncertainty exist, or together referred to as operational uncertainty. Technical uncertainty or the amount of information processing and decision making required when executing the task, and environmental uncertainty, where variability resulting from external factors are high, suit autonomous work design best. This notion is further emphasized by Wall, Cordery and Clegg (2002), who stated that the success of empowerment will be contingent on the degree of operational uncertainty that prevails. This is because operational uncertainty creates inevitable changes in operation and it becomes impossible to specify rules or procedures for all the uncertainties that arise. IT professions are of work area that is often conditioned with operational uncertainty. It is among the most demanding job and highly stressful, as work often deals with various problems and often times requires innovative solutions. IT support service in the university is continuously faced with support enquiries from the university community, which at times various problems arise, ranging from software to hardware or facilities technical problems that requires prompt assistance making it among the most demanding jobs in the university.



Secondly, the present findings are expected to provide insights into the concrete actions that can be taken by organizations, especially IT organizations, in job redesign attempts for a maximized outcome, in particular with the provision of work autonomy to workers for workers well-being.

Thirdly, the findings of this study are likely to provide insights into the importance of knowledge and skills in workplace, and its application in the provision of work autonomy, for example, by providing training for employees to increase their efficacy in order to be able to adapt to the motivating potential of jobs, and specifically to be able to practice discretion in their job effectively, and ultimately for the achievement of satisfaction at work.

### **Research objectives**

The objectives of this research are:

1. To explore the relationship between work autonomy and job satisfaction among IT support staff in IIUM.
2. To examine the moderating effect of self-efficacy on the relationship of work autonomy and job satisfaction.

## **Literature Review**

### **Work autonomy and job satisfaction**

Job satisfaction is one of the most widely discussed and studied construct in such disciplines as industrial-organizational psychology, social psychology, organizational behavior, personnel and human resource management, and organizational management (Cranny, Smith, & Stone, 1992). The study of the antecedents and consequences of job satisfaction is one of the major domains of industrial-organizational psychology and organizational behavior, and more studies have been done to understand job satisfaction than for any other variable in organizations (Spector, 1997). According to Cranny, Smith and Stone, greater job satisfaction can be translated as better quality of life, better health both physically and mentally, more job stability, and probably greater cooperativeness among employees. Similarly, Spector (1997) stated that job satisfaction concerns the humanitarian aspect of job. It is a reflection of good treatment and an indicator of psychological well-being, which ultimately influences the organizational functioning. Further enquiry into this variable is, therefore, worthwhile.

Spector (1997) classified antecedents of job satisfaction into two categories, personal factors and environmental factors. Job characteristics model posits that an increase in work autonomy of employees would result in job satisfaction of employees (Hackman & Oldham, 1980). Hackman and Oldham further stated that enriching work autonomy of employee results in the increase in experienced responsibility which subsequently leads to job satisfaction and other positive work outcome behavior. Empirical research findings show that work autonomy is a determinant of job satisfaction (Barling, Kelloway, & Iverson, 2003; Känd & Rekor, 2005; Mohr & Zoghi, 2006; Bhatti & Qureshi, 2007).

Humphrey, Nahrgang, and Morgeson (2007) conducted a meta-analysis on work autonomy facets and concluded that investigations into work autonomy facets are important. Humphrey et al's (2007) meta-analytic study investigated facets of autonomy such as work scheduling autonomy, work methods autonomy, and decision making autonomy. All autonomy criteria exhibited different relationships with job satisfaction; work method autonomy and decision making autonomy exhibited significant relationships with job



satisfaction, with decision making autonomy exhibiting the largest relationship. Similarly, Denton and Kleiman (2001) investigated the relationship of work autonomy facets (method autonomy, scheduling autonomy, and criteria autonomy) and job satisfaction and found that work autonomy is a significant predictor of job satisfaction, with level of tenure moderating the strength of the relationship. However, only interactions of scheduling autonomy and criteria autonomy facets with job tenure were significant. The findings of both the studies warrant further investigations into work autonomy facets and job satisfaction.

### **Work autonomy, self-efficacy, and job satisfaction**

Hackman and Oldham (1980) posited that differences in people play important role in the relationship of work characteristics and work outcome. Hackman and Oldham thus posited three individual differences variables that moderate the relationship, which include knowledge and skills, along with growth-need strength and context satisfaction. According to Hackman and Oldham, for jobs high in motivating potential (an index that reflects overall potential of a job to foster internal work motivation on the part of job incumbents), people who have sufficient knowledge and skills to perform well will experience substantially positive feelings as a result of their work activities, but people who are not competent enough to perform well will experience a good deal of unhappiness and frustration at work and ultimately withdrawal from the job, either behaviorally or psychologically. Similarly, Lawler and Mohrman (1991) asserted that in order high-involvement management to be effective, employees are required to know how the organization operates, how their particular work area operates, and must be capable of acting on the information that is provided by the organization.

Scholz, Gutiérrez-Doña, Sud, and Schwarzer (2002) stated that self efficacy, or "can do"-cognition, or in other words, perceived competence, mirrors a sense of control over one's environment. It reflects the belief of being able to control challenging environmental demands by means of taking adaptive action. Gist and Mitchell (1992) stated that self-efficacy is a judgment of task capability and it is an important motivational construct. Bandura (1995) explained that efficacy beliefs influence how people think, feel, motivate, and act.

According to Bandura (1995), sources of efficacy beliefs come from four main influences: (1) *Mastery Experiences*, or personal attainments, (2) *Vicarious Experiences*, or modeling, obtained through social models, i.e. through coaching or seeing people similar to themselves succeed by perseverant effort, (3) *Social persuasion*, which strengthens one's efficacy belief, and (4) *Physiological and emotional state*, in which positive mood enhances perceived self efficacy, while negative mood diminishes it.

Self-efficacious people are prepared to take responsibilities and face challenges, will persevere in the face of difficulties and possess sense of control over environment in which they function than the inefficacious people (Bandura, 1977; 1995). According to Bandura and Wood (1989), individuals who show strong sense of self-efficacy set increasingly challenging goals, possess cognition that environment is controllable, and exhibit effective analytic thinking, which subsequently affect organizational attainments. Bandura (1997, pp. 452) explained that "people who believe strongly in their problem-solving capabilities remain highly efficient in their analytic thinking in complex decision-making situations, which ultimately fosters performance accomplishments, than the inefficacious people". Spreitzer (1995, p. 1444) posited that "competence, or self-efficacy, is an important component of feelings of empowerment, along with self-determination, meaning, and impact".

Past findings show that self-efficacy is associated with work-related performance, for example, self-efficacy plays role in employees' attitude in accepting technological changes



(McDonald & Siegall, 1996), self-efficacy plays role in occupational stress of employees, in which individuals with low self-efficacy show more emotional exhaustion when their job autonomy is higher (Grau, Salanova, & Peiro, 2001), and self-efficacy holds influence on individuals' expectations of the outcomes of using computers, their emotional reactions to computers, as well as their actual computer use (Compeau & Higgins, 1995).

Alternatively, work autonomy promotes the nurturing of self-efficacy belief in employees. According to Benson and Lawler (2005), the positive effects of employee involvement on organizational performance come from the increased utilization of the knowledge and skills of employees, which then increases efficacy of workers, and subsequently motivates them to exert extra effort, resulting in better overall performance. Similarly, Parker and Wall (1998) argued that increased autonomy can promote the acquisition and use of knowledge, improving intellectual flexibility, likely to develop broader role orientations, and greater propensity to use initiative or be proactive, and thereby improving performance. This phenomenon is referred to as "efficacy-performance spiral" by Lindsley, Brass, and Thomas (1995) (as cited in Van Mierlo, Rutte, Vermunt, Kompier, & Doorewaard, 2006), which refers to a reciprocal relationship between efficacy and performance, in which perceptions of self-efficacy result in high task performance, in turn results in increased perceptions of self-efficacy, and so on.

Self-efficacy has been found to predict job satisfaction (Judge, Locke, Durham & Kluger, 1998; Judge & Bono, 2001). According to Judge and Bono (2001), self-efficacy, or one's estimate of one's fundamental ability to cope, perform, and be successful, will contribute to positive self-evaluations and thus efficacious people are likely to deal effectively with difficulties and persist in the face of challenges and subsequently derive satisfaction from the job.

Johns, Xie, and Fang (1992) tested the moderator effect of knowledge and skills by examining educational level of employees. They found that employees with less educational level react more positively to the experience of enhanced responsibility. This contradicts to the commonly agreed idea that employees with higher knowledge would react more positively to enhanced responsibility. Similarly, Gagné, Senecal and Koestner (1997) examined the relations between Hackman and Oldham's job characteristics model, Spreitzer's four aspects of empowerment model (autonomy, competence, meaningfulness and impact) and internal motivation among technical and telemarketing workers and found a significant negative relationship between autonomy supportive work context and feelings of competence.

Siegall and Gardner (2000) found that dimension of competence within empowerment was not related to contextual factors (which includes, teamwork, communication with supervisor, general relations with company, and concern for performance). Although the contextual factors in Siegall and Gardner's study does not explicitly include work autonomy as a contextual factor, but Siegall and Gardner explained that contextual factors are important in order for employees to make sound decisions at workplace. Dimitriades and Kufidu (no year) conducted confirmatory factor analyses of Spreitzer's four factors empowerment found that correlations between perceived competence and other factors were marginal.

On the other hand, Edwards, Green, and Lyons (2002) found that empowerment is related to self-efficacy at a low to moderate level. Edwards et al. further suggested that efficacy is situation-specific and context specific, therefore varies from situation to situation. These findings negate the commonly believed notion that efficacy is an important determinant of feelings of empowerment (Spreitzer, 1995; Deci & Ryan, 1990). The previous inconsistent





research results merit further investigations to further examine the effect of self-efficacy on work autonomy.

Self-efficacy has been examined as a mediator of the relationship between work autonomy and work outcomes. Using 190 banking salespersons in Yogyakarta and Solo, Indonesia, Saragih (2007) investigated the relationship between work autonomy and work outcomes, which include job performance, job satisfaction and job stress, with self-efficacy as mediating variable and found that work autonomy was significantly related to job satisfaction, and self-efficacy was found to partially mediate the relationship. On the other hand, Leach, Wall, Rogelberg, and Jackson (2005) investigated autonomy at team level and its relationship with performance and team member job strain, by examining team knowledge, skills and abilities (KSA) as mediator and moderator. KSA was measured using Teamwork-KSA test by Stevens and Campion (1994), which is a situational test consisting items that ask employees of possible team situations and how they would behave. The study found support for the mediation model, and no support for moderation model. This finding is inconsistent with the Job Characteristics Model which posits that knowledge and skills moderate the relationship of work characteristics and work outcomes.

This study is therefore seeks to investigate the role of self-efficacy as moderator of the relationship between work autonomy provision and job satisfaction.

### Theoretical Framework

This study is based on the Job Characteristics Model of Hackman and Oldham (1980), who identified five core job characteristics that relate to the motivation and satisfaction of employees. The job characteristics are:

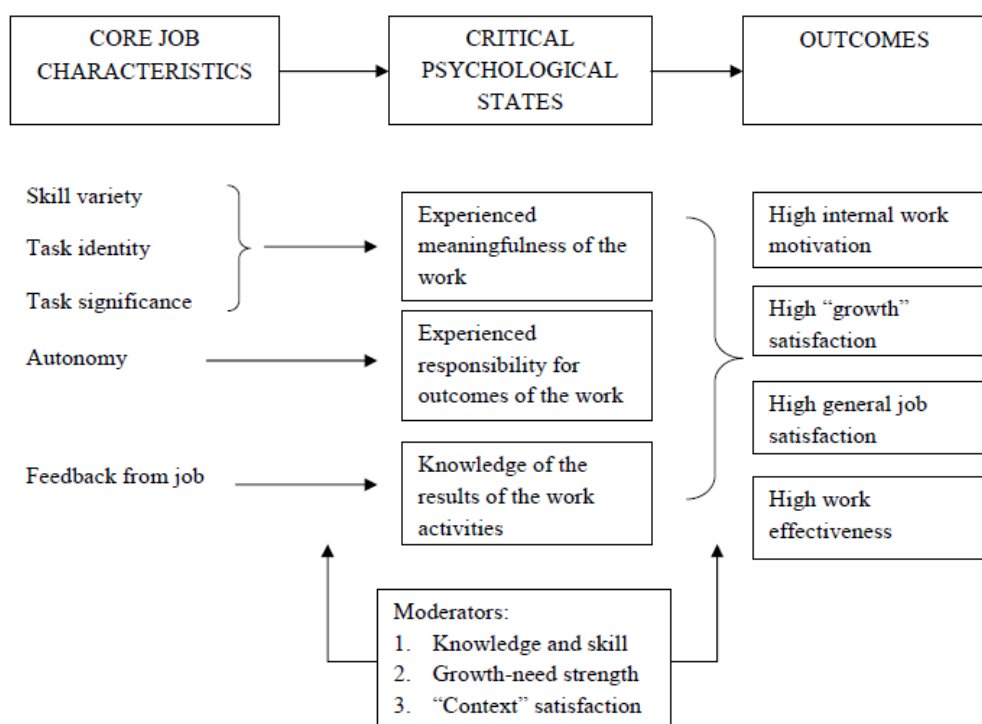


Figure 2: Hackman & Oldham (1980) Job Characteristics Model.



1. Skill variety: the degree to which the job requires different skills.
2. Task identity: the degree to which the job involves completing a whole, identifiable piece of work rather than simply a part.
3. Task significance: the extent to which the job has an impact on other people, inside or outside the organization.
4. Autonomy: the extent to which the job allows jobholders to exercise choice and discretion in their job.
5. Feedback from the job: the extent to which the job itself (as opposed to other people) provides jobholders with information on their performance.

Hackman and Oldham (1980) posited that the five core job characteristics elicit “critical psychological states”, which are the skill variety, task identity and task significance characteristics affect the *experienced meaningfulness* of the work, whereas autonomy characteristic affects the *experienced responsibility* for the work, and feedback characteristic influences *knowledge of results* of work. Together, the critical psychological states influence five main outcomes namely, work satisfaction, internal work motivation, work performance, absenteeism and turnover, which both absenteeism and turnover later on were omitted from the model and replaced with growth satisfaction. The relationships from core job characteristics to critical psychological states to the outcomes were posited to be moderated by *growth-need strength*, or the importance that an individual attaches to challenge and personal development. Later advancement in the model included two other variables that moderate the relationships, which are knowledge and skills, and “context” satisfaction, which posited to include job security, pay, co-worker relations, and supervision. Hackman and Oldham stated that combinations of scores of the five work characteristics are called the motivating potential of jobs.

### Conceptual Framework

The conceptual framework for this study is derived from the Job Characteristics Model (Hackman & Oldham, 1980). In particular, this conceptual framework focuses on the relationship between work autonomy characteristic and job satisfaction. Secondly, this research will examine self-efficacy as moderator of the relationship between work autonomy and job satisfaction.

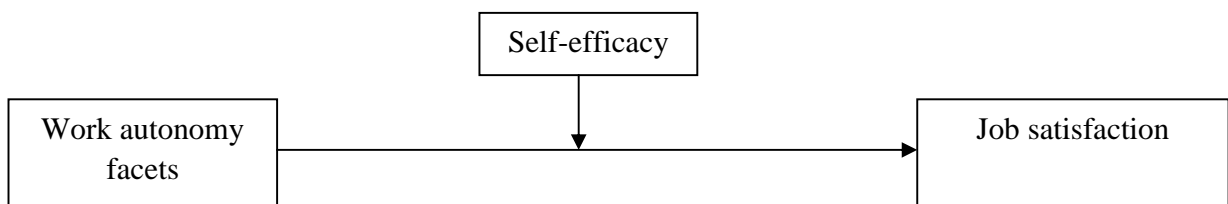


Figure 3: Relationship of work autonomy and job satisfaction: Self-efficacy as moderator

### Research hypothesis:

1. Work method autonomy will have positive relationship with job satisfaction.
2. Work scheduling autonomy will have positive relationship with job satisfaction.
3. Work criteria autonomy will have positive relationship with job satisfaction.



4. Self-efficacy will moderate the relationship of work autonomy and job satisfaction.

In addition to that, this study aims to explore the relationships of work autonomy facets to the extrinsic and intrinsic satisfaction respectively. Age, job tenure, and gender will also be investigated for the purpose of exploratory analysis.

### **Method**

#### **Participants**

This study will include a convenient sample of 100 IT staff of International Islamic University Malaysia, which includes staff of the Information Technology Division (ITD) and staff of IT unit of different faculties, divisions, and centers in the university. Previous studies on work autonomy have investigated wide range of participants, which includes a study comparing students who worked part-time and full-time (Breugh, 1999), banking salespersons (Saragih, 2007), a study comparing managerial and non-managerial level positions (Sadler-smith, El-Kot, & Leat, 2003). In these studies no specific criteria were used with regards to participants.

### **Measurement**

#### **Work Autonomy**

Work autonomy will be measured by Work Autonomy scale developed by Breugh (1985), which measures facets of work autonomy; *method autonomy*, *scheduling autonomy*, and *criteria autonomy*. The scale consists of 9 items, each work autonomy facets is represented by 3 items. Sample items includes, “I am allowed to decide how to go about getting my job done” (method autonomy), “I have the control over scheduling my work” (scheduling autonomy), and “I am able to modify what my job objectives are” (criteria autonomy). The scale is measured on a 7-point Likert scale, 1 = *strongly disagree*, to 7 = *strongly agree*. High score indicates a high degree of autonomy at work. Breugh (1999) reported reliability coefficients of .93, .88, .85, for method autonomy, scheduling autonomy and criteria autonomy respectively.

#### **Job Satisfaction**

Job satisfaction will be measured using Minnesota Satisfaction Questionnaire (MSQ) by Weiss, Dawis, England and Lofquist (1967) (as cited in Fields, 2002) to assess the general job satisfaction. In this study the short version of MSQ will be used. The scale consists of 20 items, which can be separated into a 12-item subscale for intrinsic satisfaction (i.e. satisfaction with the chance to use abilities and feelings of accomplishment from the job) and an 8-item subscale of measuring extrinsic satisfaction (i.e. satisfaction with pay, chances for advancement and supervision). Each extrinsic and intrinsic subscale items will be totaled up to measure the intrinsic and extrinsic satisfaction. Measurement for overall job satisfaction will be done by summing up all items into a composite score of general job satisfaction. The scale is measured on a 5-point Likert scale, with 1 = very dissatisfied with this aspect of job, 5 = very satisfied with this aspect of job. High score indicates high degree of job satisfaction. Sample items include, “the chance to work alone on the job”, “Being able to do things that don’t go against my conscience”, and “the chance for advancement on this job”. MSQ has been found to yield coefficient alpha ranging from .85 to .91 (Fields, 2002).

#### **Computer Self-Efficacy**

Self-efficacy will be measured using the Computer Self-Efficacy (CSE) scale developed by Murphy, Coover, and Owen in 1989. CSE consists of 32 items, which can be





divided into three different computing skills categories; beginning, advanced, and mainframe level. The scale is measured on a 5-point Likert scale, with 1 = very little confidence, 5 = quite a lot of confidence. A Cronbach alpha of 0.91 has been found on Malaysian sample (Sam, Abang Othman, & Nordin, 2005). A high score indicates high degree of confidence in individual's knowledge and skills with regard to computer. Sample items include "I feel confident working on personal computer", "I feel confident using user's guide when help is needed", and "I feel confident working on a mainframe computer". A discussion with IT expert lead to the decision to only use the intermediate and advanced level items, and disregard the mainframe items, as mainframe technology is seen as obsolete, and no longer relevant. In addition to that, a slight modification is done to one item in the computer self-efficacy scale, for reason that the item is deemed to have been obsolete and is no longer relevant with the current technology. The item "I feel confident handling a floppy disk correctly" is modified into, "I feel confident handling a thumb drive/external hard drive correctly". Floppy disk in the olden days was used as data storing device, which has now been replaced by the more advanced thumb-drive or external hard drive.

### **Procedure**

Based on preliminary information gathered, translation of the instruments into Bahasa Malaysia was deemed important. For this purpose, committee translation approach will be used. Committee Approach refers to a translation effort in which two or three people translate from the original to target language and then compare results (Brislin, Lonner, & Thorndike, 1973). A team of four translators including the present researcher will translate the scales into Bahasa Malaysia. Three Malaysian nationals, who speak both English and Bahasa Malaysia well, will be employed to be part of the translator committee.

Once permission to conduct study is granted, researcher will then distribute the translated questionnaire booklet to participants. Consent will be obtained prior to completing the questionnaire and participants will be assured of the anonymity and confidentiality. Participants will be asked to fill in their demographic details, which will include, age, job tenure, and gender, along with completing the questionnaire completely. It is estimated that questionnaires can be completed within 30 minutes. Questionnaires will be collected upon completion.

### **Data Analysis**

Data will be analyzed using SPSS 17.0 version for windows. First, reliability and validity coefficients of the scales for the present sample will be examined by computing Cronbach's alpha, inter-item correlations and item-total correlations. Secondly, descriptive statistics will be computed. Pearson correlations will be computed to evaluate the relationship between the study variables. Lastly, multiple regression analysis will be conducted to examine self-efficacy as moderator of the relationship between work autonomy and job satisfaction.

### **References**

- Bandura, A. (1995). Exercise of personal and collective efficacy in changing societies. In A. Bandura (Ed.), *Self-Efficacy in Changing Societies* (pp. 1-45). New York: Cambridge University Press.
- Bandura, A. (1997). *Self-Efficacy: The Exercise of Control*. New York: W. H. Freeman and Company.



- Bandura, A. (1977). Toward a unifying theory of behavior change. *Psychological Review* , 84, 191-215.
- Bandura, A., & Wood, R. (1989). Effect of perceived controllability and performance standards on self-regulation of complex decision making. *Journal of Personality and Social Psychology* , 56 (5), 805-814.
- Benson, G. S., & Lawler, E. E. (2005). Employee involvement: Utilization, impacts, and future prospects. In D. Holman, T. D. Wall, C. W. Clegg, P. Sparrow, & A. Howard (Eds.), *The Essentials of the New Workplace* (pp. 153-172). West Sussex: John Wiley & Sons.
- Bhatti, K. K., & Qureshi, T. M. (2007). Impact of employee participation on job satisfaction, employee commitment and employee productivity. *International Review of Business Research Papers* , 3 (2), 54-68.
- Breaugh, J. A. (1985). The measurement of work autonomy. *Human Relations* , 38, 551-570.
- Brislin, R. W., Lonner, W. J., & Thorndike, R. M. (1973). *Cross-cultural research methods*. Canada: Wiley & Sons, Inc.
- Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: Development of a measure and initial test. *MIS Quarterly* , 19 (2), 189-211.
- Cordery, J. L., & Wall, T. D. (1985). Work design and supervisory practice: A model. *Human Relations* , 38, 425-441.
- Cranny, C. J., Smith, P. C., & Stone, E. F. (1992). *Job satisfaction: How people feel about their jobs and how it affects their performance*. (C. J. Cranny, P. C. Smith, & E. F. Stone, Eds.) New York: Lexington Books.
- Denton, D. W., & Kleiman, L. S. (2001). Job tenure as a moderator of the relationship between autonomy and job satisfaction. *Applied H.R.M Research* , 6 (2), 105-114.
- Dimitriades, Z., & Kufidu, S. (no year). Individual, job, organizational and contextual correlates of employment empowerment: Some Greek evidence. *Electronic Journal of Business Ethics and Organizational Studies* , 9 (2), 36-43.
- Edwards, J. L., Green, K. E., & Lyons, C. A. (2002). Personal empowerment, efficacy, and environmental characteristics. *Journal of Education Administration* , 40 (1), 67-86.
- Gagné, M., Senecal, C. B., & Koestner, R. (1997). Proximal job characteristics, feelings of empowerment, and intrinsic motivation: A multidimensional model. *Journal of Applied Social Psychology* , 27 (14), 1222-1240.
- Gist, M. E., & Mitchell, T. R. (1992). Self-efficacy: A theoretical analysis of its determinants and malleability. *The Academy of Management Review* , 17 (2), 183-212.
- Grau, R., Salanova, M., & Peiró, J. M. (2001). Moderator effects of self-efficacy on occupational stress. *Psychology in Spain* , 5 (1), 63-74.
- Hackman, J. R., & Oldham, G. R. (1980). *Work Redesign*. United States of America: Addison-Wesley.
- Humphrey, S. E., Nahrgang, J. D., & Morgeson, F. P. (2007). Integrating motivational, social, and contextual work design features: A meta-analytic summary and theoretical extension of the work design literature. *Journal of Applied Psychology* , 92 (5), 1332-1356.
- Johns, G., Xie, J. L., & Fang, Y. (1992). Moderating and mediating effect of job design. *Journal of Management* , 18, 657-676.
- Judge, T. A., & Bono, J. E. (2001). Relationship of core self-evaluations traits - self-esteem, generalized self-efficacy, locus of control, and emotional stability - with job satisfaction and job performance: A meta-analysis. *Journal of Applied Psychology* , 86 (1), 80-92.



- Judge, T. A., Locke, E. A., Durham, C. C., & Kluger, A. N. (1998). Dispositional effects on job and life satisfaction: The role of core evaluations. *Journal of Applied Psychology*, 83 (1), 17-34.
- Känd, M., & Rekor, M. (2005). Perceived involvement in decision making and job satisfaction: The evidence from a job satisfaction survey among nurses in Estonia. *Stockholm School of Economics Riga Working Papers*, 6 (74).
- Karasek, E. K., & Theorell, T. (1990). *Healthy work: Stress, productivity, and the reconstruction of working life*. United States of America: BasicBooks.
- Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly*, 24, 285-308.
- Khorrani-Arani, O. (2001). Researching computer self-efficacy. *International Education Journal*, 2 (4), 17-25.
- Lawler, E. E., & Mohrman, S. A. (1991). High-involvement management. In R. M. Steers, & L. W. Porter (Eds.), *Motivation and Work Behavior* (5th Edition ed., pp. 468-477). United States: McGraw-Hill.
- Leach, D. J., Wall, T. D., Rogelberg, S. G., & Jackson, P. R. (2005). Team autonomy, performance, and member job strain: Uncovering the teamwork KSA link. *Applied Psychology: An International Review*, 54 (1), 1-24.
- McDonald, T., & Siegall, M. (1996). Enhancing worker self-efficacy: an approach for reducing negative reactions to technological change. *Journal of Managerial Psychology*, 11 (2), 41-44.
- Mohr, R. D., & Zoghi, C. (2006). Is job enrichment really enriching? *U.S. Bureau of Labor Statistics Working Papers* (389).
- Parker, S. K., & Wall, T. D. (2001). Work design: Learning from the past and mapping a new terrain. In N. Anderson, D. S. Ones, H. K. Sinangil, & C. Viswesvaran (Eds.), *Handbook of Industrial, Work, and Organizational Psychology* (pp. 90-109). London, United Kingdom: Sage Publications.
- Parker, S., & Wall, T. (1998). *Job and Work Design: Organizing Work to Promote Well-Being and Effectiveness*. United States of America: Sage Publications.
- Sadler-Smith, E., El-Kot, G., & Leat, M. (2003). Differentiating work autonomy facets in a non-Western context. *Journal of Organizational Behavior*, 24, 709-731.
- Sam, H. K., Abang Othman, A. E., & Nordin, Z. S. (2005). Computer self-efficacy, computer anxiety, and attitudes toward the Internet: A study among undergraduates in Unimas. *Educational Technology & Society*, 8 (4), 205-219.
- Saragih, S. R. (2007). *The impact of work autonomy towards work outcomes: Self-efficacy as mediator variable*. Master Thesis. Universitas Gadjah Mada. Retrieved January 11, 2009, from Universitas Gajah Mada, Economics & Business Digital Library.
- Scholz, U., Gutiérrez-Doña, B., Sud, S., & Schwarzer, R. (2002). Is general self-efficacy a universal construct?: Psychometric findings from 25 countries. *European Journal of Psychological Assessment*, 18 (3), 242-251.
- Siegall, M., & Gardner, S. (2000). Contextual factors of psychological empowerment. *Personnel Review*, 29 (6), 703-722.
- Spector, P. E. (1997). *Job satisfaction: Application, assessment, causes, and consequences*. California: Sage Publications.
- Spreitzer, G. M. (1995). Psychological empowerment in the workplace: Dimensions, measurement, and validation. *Academy of Management Journal*, 38 (5), 1442-1465.



- Spreitzer, G. M. (2007). Taking stock: A review of more than twenty-years of research on empowerment at work. In C. L. Cooper, & J. Barling (Eds.), *The Handbook of Organizational Behavior*. Sage Publications.
- van Mierlo, H., Rutte, C. G., Vermunt, J. K., Kompier, M. A., & Dooreward, J. A. (2006). Individual autonomy in work teams: The role of team autonomy, self-efficacy, and social support. *European Journal of Work and Organizational Psychology*, 15 (3), 281-299.
- Wall, T. D., Cordery, J. L., & Clegg, C. W. (2002). Empowerment, performance, and operational uncertainty: A theoretical integration. *Applied Psychology: An International Review*, 51 (1), 146-169.