Impact of Work Design on Employee Psychological Strain among Malaysian Technical Workers

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Abstract
This study represents an attempt to test the impact of work design on employee well-being in Malaysia, a country characterized as collectivistic and having high power distance. Specifically, my research sought to examine the direct effects of psychosocial work characteristics on psychological strain. Also, the present study assessed the moderating effects of social support on the relationships between job demands and psychological strain. Self-reports on the study variables were obtained from 429 technical workers in a large telecommunication company in Malaysia. I used multivariate analyses to examine the direct and moderating effects hypotheses. The findings confirmed the direct effects of job demands, job control, and social support on psychological strain. The results also provide evidence for a moderating effect of supervisor support, but not for co-worker support. This research makes several theoretical contributions, and provides information concerning the Job Demands-Resources (JD-R) model and their application to a culture characterised by high collectivism and high power distance. The findings may help human resource practitioners understand how work design influences employees’ well-being. Implications are discussed to enhance better mapping of interventions at individual and group levels.

1. Introduction
This research focuses on how work design affects employee psychological strain. Work design has generated much interest in recent decades [1]. It is defined as the attributes of the task, job, and social and organizational environment [2]. Work design describes how jobs, tasks, and roles are structured, performed, and modified, as well as the impact of these structures, enactments, and modifications on individual, group, and organizational outcomes [3]. It has an enormous impact on organizational success.
and individual well-being [4]. Work design has been shown to influence behavioral outcomes (such as performance and absenteeism), psychological outcomes (such as job satisfaction and stress), and physical outcomes (such as blood pressure and cardiovascular disease) [3]. Moreover, current trends in human resource management research suggest that strategic human resource (HR) and human capital management can be improved by considering the theoretical and practical implications of work design research [5-6]. The structure, technology, and resources available in one’s work environment are fundamental to the meaning and value one places in work [7, 28]. As such, organizational and work design significantly shapes the contribution employees make to their organizations.

This research included three aspects of work design: (1) work context (i.e. job demands), (2) motivational characteristics (i.e. job control), and (3) social characteristics (i.e. social support). The level of demands placed on employees and the degree of autonomy or control afforded to employees are significantly related to strain [8]. That is, stressful job demands produce high levels of strain, but greater job control can result in lower levels of strain. Social characteristics such as social support are likely to impact a variety of work outcomes [2]. Social characteristics are expected to reduce job stress by buffering workers against negative job events [8]. They may also increase work motivation and prosocial work behaviors as they promote resilience, security, and positive moods on the job [2]. Therefore, the aims of the present research focused on work design characteristics which cause strain and their consequences among technical workers in Malaysia.

2. Literature Review

2.1. Conceptualization of Work Design

Work design refers to the psychosocial work characteristics and serves as the main predictors. Many of the previous studies have shown that work characteristics can have a profound impact on employee well-being (e.g. job strain) [9]. The JD-R model incorporates many possible working conditions, and focus on both negative and positive indicators of employee well-being. The JD-R model can be applied to a wide range of occupations, and can be used to improve employee well-being and performance. The Job Demands-Resources (JD-R) model argued that the psychosocial work characteristics can be categorized into two groups: job demands and job resources. Job demands refer to those physical, psychological, social, or organizational aspects of job that require sustained physical and/or psychological (cognitive and emotional) effort or skills and are therefore associated with certain physiological and/or psychological costs.

2.2 Conceptualization of Psychological Strain

Beehr [10] defined strain as states that are harmful and usually have an adverse affect on the individuals experiencing them. Lee and Ashforth [11] also defined strain as affective, feeling states of the individual characterised by depleted emotional resources and lack of energy. Much research has examined feelings of strain arising from certain job features (usually referred to as ‘stressors’) [12]. According to Lazarus and Folkman [13], strain arises when individuals perceive themselves as unable to meet environmental demands. If strain occurs, people will try to deal with either the stressor itself or with the negative effects of this stressor (coping) [13]. French, Caplan, and Harrison (1982) suggested that strain can result from the mismatch between the person and the environment on dimensions important to the well-being of the individual. They described the relationship between the person-environment (P-E) misfit and strain as a U-shaped curve. In the current research, I adopted psychological strain as a key consequence of the psycho-social work environment (e.g. high job demands and low job control).
3. Methodology

3.1. Population and Sample

Participants for this study were technical workers at nineteen branches of Telecom Malaysia in Johor state, Malaysia. In order to ensure that every technical worker in the population frame had an equal chance of being selected for the sample, I distributed the questionnaire to all technical workers in the target population through internal mail. At the time the data collection commenced, there were about 1100 technical workers in the nineteen branches of Telecom Malaysia. The respondents consisted of 84.6% male and 15.4% female. Their ages ranged from 20 to 55 years with a mean age of 45.7. The mean duration of tenure in the organisation was 13.4 years. With respect to their racial identity, 93.9% were Malay, 5.6% were Indian and 0.5% were Chinese. A majority of them were married 93.9% while only 4% were single and 2.1% were widowed or divorced. In terms of education level, 81.8% had a Malaysian Certificate of Education (SPM/STPM); 16.1% had a diploma; 1.6% had university degree; and 0.5% had a master’s degree. 41.7% of the respondents were technicians, 33.1% were senior technicians, 18.9% were technical officer assistants, and 6.3% were technical officers.

3.2 Instrument

Quantitative demands were measured by using the scale by Van Yperen and Snijders [14]. In the present study, the Cronbach’s alpha for this scale was 0.83. Attention demands, problem-solving demands, and responsibility demands were assessed by the Wall, Jackson and Mullarkey [15] scale. The Cronbach’s alpha for attention demands scale was 0.73, Problem-solving demands was 0.79, and Responsibility demands was 0.80. Skill discretion. I used the Job Content Questionnaire (JCQ) [16] to measure skill discretion. This scale consists of six items. The Cronbach’s alpha for this scale was 0.80. Decision authority. I also used the Job Content Questionnaire (JCQ) (Karasek, 1985) to measure decision authority. This scale consists of three items. The Cronbach’s alpha for this scale was 0.80. Timing Control. I used the Wall et al. (1995) scale to measure timing control among the respondents. This scale consists of four items. The Cronbach’s alpha was 0.74. Method Control. I also used the Wall et al. (1995) scale to measure method control among the respondents. This scale consists of six items. The Cronbach’s alpha for these scales were 0.77. Psychological Strain. I chose the 12-item version of the General Health Questionnaire (GHQ-12) by Goldberg and Williams [17] to measure the feeling of strain among technical workers. Supervisor and co-worker support. I chose four-item scales developed by O’Driscoll [18] to measure respondents’ perceptions of the level of supervisor and co-worker support they received. The respondents were asked how often they get support from their supervisor or co-worker when they are having problems at work. All scales had high internal reliabilities: supervisor support (Cronbach’s α = 0.89) and co-worker support (Cronbach’s α = 0.91).

4. Results

The regression analyses showed that job demands (β = 0.44), timing control (β = -0.12), methods control (β = -0.12), and skill discretion (β = -0.12) were significantly related to anxiety/depression. These results indicated that high job demands related to high anxiety/depression, and low timing control, method control, and skill discretion related to high anxiety/depression. Only Methods control (β = -0.14) and co-worker support (β = -0.23) was significantly related to social dysfunction.
In terms of the interaction analyses, none of the interaction terms were significant in predicting anxiety/depression. Only job demands x supervisor support ($\beta = -0.24$) was significant in the relationships between job demands and social dysfunction. For a more specific test, I plotted the interactions following Dawson and Richter [19]. The significant interaction effect is illustrated in Figure 1.

![Fig. 1. Two-way interaction between job demands and supervisor support on social dysfunction](image)

Supervisor support moderated the positive relationship between job demands and social dysfunction. There is a positive relationship between job demands and social dysfunction among those who reported lower supervisor support, whereas there is no trend among respondents reporting higher supervisor support. In other words, high job demands were positively related to social dysfunction only when supervisor support was low, but not when supervisor support was high.

5. Discussion and Conclusion

The findings showed that job demands were positively associated with anxiety/depression among these technical workers in Malaysia. These results are consistent with previous studies in Western contexts [e.g., 9, 20]. They also suggest that job demands have an immediate effect on anxiety/depression, indicating that high levels of demand were linked with high levels anxiety/depression. The stressor-strain perspective serves as the theoretical basis for explaining the negative effects of job demands [21]. According to this perspective, work stressors such as job demands are the stimuli that induce the stress process, and forms of strain such as anxiety/depression [22]. Thus, job demands appear to be an important predictor of anxiety/depression.

This study’s results are in line with previous studies which found that lack of job control consistently predicts job-related strain [e.g., 8, 23, 24]. This result may be influenced by the collectivistic, high power distance culture in Malaysia. Collectivists tend to believe they have less personal authority than do others typically classified as individualists [25]. In addition, in a high power distance country such as Malaysia, employees expect to follow instructions from their superior. Decision authority tends to be centralised because superiors treat it as solely their responsibility. Employees are viewed as incapable of contributing to decision-making. As a consequence, employees are likely to accept centralised power and dependence on superiors for directions. Personal initiative by employees is not valued and they are only expected to implement policies dutifully. In other words, having more decision authority might not be valued and could actually lead to increased strain. Perhaps the technical workers felt that having decision authority might increase their responsibility and lead to increased strain.
In terms of social support, the findings showed that supervisor support and co-worker support did not predicted psychological strain. However, supervisor support functions as the moderator of the impact of job demands on social dysfunction. My findings are in line with previous research showing that individuals who receive social support (e.g., supervisor support) experience less strain than those who do not receive such support, because support protects individuals from the potentially harmful consequences of stressful life events [e.g., 26, 27]. This occurs by helping them deal with a problem or, emotionally, by modifying their perception that the stressor is damaging to their well-being.

To conclude, this research adds new knowledge in relation to the impact of work design on employee well-being in the Malaysian setting. The findings will aid both practitioners and managers to take action to reduce psychological strain by re-designing jobs, reducing strain by augmenting employee support programmes, and intervening in the process to enhance job performance.

References


