

THE RELATIONSHIP BETWEEN JOB SATISFACTION AND JOB FACTORS IN INDUSTRIAL WORK DESIGN: A CASE STUDY OF THE AUTOMOTIVE INDUSTRIES IN MALAYSIA

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A survey was conducted to investigate the relationship between job satisfaction and job factors that affect work design in two automotives manufacturing companies in Malaysia. A set of multiple choices questionnaires was developed and data were collected by interviewing the employees at the production plant. Hundred and seventy male subjects between the ages of 18 to 40 years with the mean age of 26.8 and SD of 5.3 years and mean work experience of 6.5 and SD of 4.9 years took part in the survey. The survey focused on job factors, i.e. skill variety, task identity, task significance, autonomy and feedback. The results support the previous findings that job factors are significantly correlated to job satisfaction. Furthermore, it also highlights the significant influence of age, work experience and marital status.

Key Words: job satisfaction; work design; job factors; correlation; automotive manufacturing companies

INTRODUCTION

Industrial work design could be explained as the specification of work content, method and relationships to satisfy the requirement of the worker and the system (Das, 1999). A major impetus to the study of industrial work design came from Brodner (1991), Brodner (1988), Wobbe and Brodner (1990) who pointed out that industrial work design must be developed as an integrated whole, taking into consideration the inter-dependencies among skills, organization and technology (Das, 1999). In addition, Rohmert and Raab (1992) have also developed a model of stress and strain which adopts the human-centered concept and later Das (1999) combined the three approaches i.e. technology-centered approach, human-centered approach and socio-technical approach to develop a comprehensive model.

The human component is increasingly recognized as central to the productivity and performance (Rouse and Cody, 1991) of industrial work design. More recently, the impact of automation has become increasingly important (Rouse, 1983). The results of automation have created another role of the operator as a monitor and supervisor of automation. It is apparent that industrial environments have changed enormously over the past decades. The organization of work is also changing at unprecedented rates, partly as a result of the growth of a range of new management practices and techniques (Clegg, 2000).

The concept of job satisfaction has been typically defined as an individual's attitude about work roles and the relationship to worker motivation (Vroom, 1967). One cannot talk about job satisfaction where there is no motivation (Kaya, 1995). Job satisfaction and job dissatisfaction theory of Herzberg et al. (1959) distinguished two separate groups of factors influencing individual job satisfaction and dissatisfaction. The first group called "motivators" leads to job satisfaction and the second group

called “hygiene” leads to job dissatisfaction.

The most important evidence that indicates the conditions of an organization have got worsened is the low rate of job satisfaction (Kaya, 1995). Thus job satisfaction is the condition of establishing a healthy organizational environment in an organization. Nonetheless, factors related to job satisfaction are relevant in the prevention of employee frustration and low job satisfaction because employees work harder and perform better if they are satisfied with their jobs (Boltes et al., 1995; Boween et al., 1994; Mallio, 1990; McCaslin and Mwangi, 1994; Riggs and Beus, 1993).

Factors affecting job satisfaction have been discussed by many researchers (Herzberg et al., 1959; Hackman and Oldham, 1974, 1975, 1976; Umstod et al., 1976; Das, 1999). In short, factors affecting job satisfaction in work design can be divided into psychological factors, social factors, physiological factors, organizational factors, technological factors and economical factors (Das, 1999).

Industrial work design model provide a complete picture of factors involved in a work system (Das, 1999). It could be used as a tool to diagnose work design in industry effectively. What is badly needed is an approach to the design of work system that is human-centered and that adequately addresses critical dimension of various factors that are affecting work design. To help resolve the above issues the study on factors that affect job satisfaction in work design is presented in this paper. The study will focus on job factors. Other factors affecting job satisfaction in work design are not considered.

METHODS

The job diagnostic survey (JDS) developed by Hackman and Oldham (1974) was used as a tool to diagnose the characteristic of the job in the survey. The JDS was translated and modified to suit the Malaysian population. Job factors questionnaire used in the survey was analyzed for their reliabilities. To identify the relationship between job satisfaction and the tested factors the data were analyzed using statistical methods to determine their correlations.

Survey

The questionnaires were distributed to the subjects individually. Two automotive manufacturing industries were involved in the survey while the respondents in this paper will be called as Auto1 and Auto 2, respectively. One hundred and seventy male subjects between the ages of 18 to 40 years took part in the survey.

Questionnaires

Basically, the questionnaires were designed in two sections covering a) participant demographic data including age, gender, work experience, marital status and education levels, and b) job factors including skill variety, task identity, task significance, autonomy and feedback from the work.

The questionnaires consist of a set of five-point Likert-type scales multiple-choice items (Rodeghier, 1996). The five job factors were tested and defined as the following according to Hackman and Oldham (1974).

Skill variety: The degree to which a job requires a variety of different activities in carrying out the work, which involve the use of a number of different skills and talent of the employee.

Task identity: The degree to which a job requires completion of a “whole” and identifiable piece of work, i.e. doing a job from beginning to end with a visible outcome.

Task significance: The degree to which a job has a substantial impact on the lives or work of other people whether in the immediate organization or in the external environment.

Autonomy: The degree to which the job provides substantial freedom, independence and discretion of the employee in scheduling the work and in determining the procedures to be used in carrying it out.

Feedback from job: The degree to which carrying out the work activities required by the job results in the employee obtaining direct and clear information about the effectiveness of his or her performance.

Analysis

Data were analyzed for reliabilities using Cronbach’s α . The correlations were analyzed using Pearson’s product moment correlation coefficients.

RESULTS

The results are divided into several sections covering i) participant’s demographic data; ii) job factors data; iii) reliabilities measure; and iv) correlation of job satisfaction.

Participants’ demographic data

Of the 170 male participants interviewed, 80% hold SPM certificate (equivalent to “O” levels) in both companies while others hold SPM certificate with other skill certificates. 69% of participants in Auto1 are married and 31% are single. On the other hand, 87% of the participants in Auto2 are single and 13% are married. The subjects are between the ages of 18 to 40 years with the mean age of 26.8 and SD of 5.3 years and mean work experience of 6.5 and SD of 4.9 years. The age and years of employment are presented in Figure 1 and Figure 2. From an array of respondent ages, the range was divided into five groups as indicated in Figure 1. Similarly, five ranges for work experience were also indicated in Figure 2.

The age factors are normally distributed but work experience factor is not. Work experience factor for Auto1 is negatively skewed while work experience factor for Auto2 is positively skewed. The responses indicated that 85% of the workers in Auto 1 are 26 years and above while 90% of the workers in Auto 2 are below 26 years. Only 15% of workers in Auto 1 are 25 years and below while

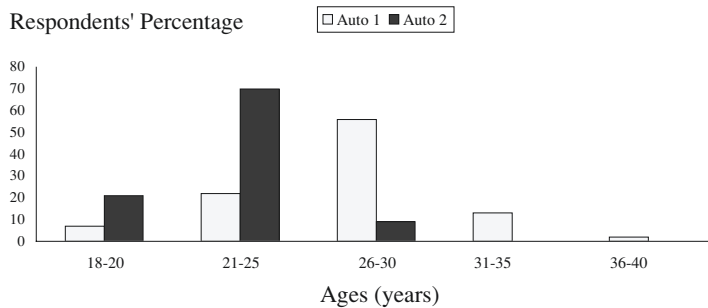


Fig. 1. Age factor.

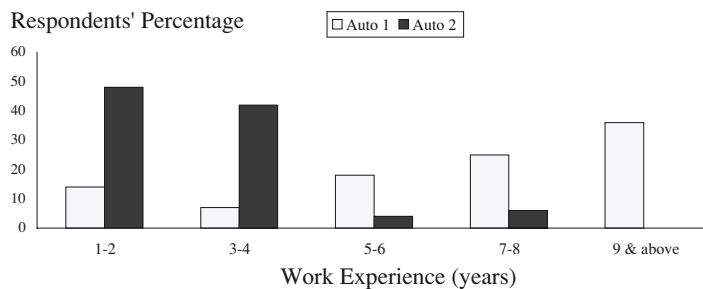


Fig. 2. Work experience factor.

10% of the workers in Auto 2 are 26 years and above.

As for work experience, 85% of the workers in Auto 1 have work experience of five years and above. Another 15% have work experience less than five years. Conversely, 90% of the workers in Auto 2 have work experience of 4 years and below. Only 10% have work experience of between five to eight years. Respondents in Auto2 are younger and less experienced than respondents in Auto1.

Job factors data

The summary of responses for job satisfaction and job factors in the two companies are illustrated in Figure 3 to Figure 8. Most factors are statistically normally distributed except for task significance which is negatively skewed. The five-point Likert-type scale ranging from 1 = very little through 3 = moderate and to 5 = very much are presented in each figure.

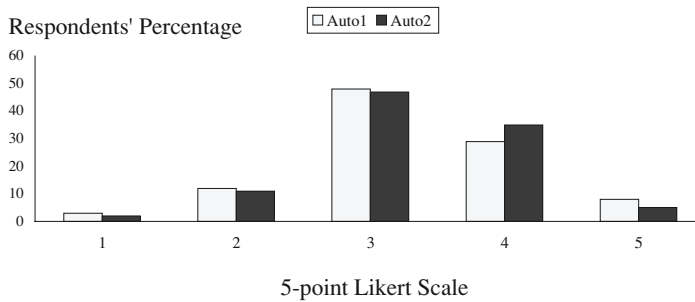


Fig. 3. Job satisfaction factor.

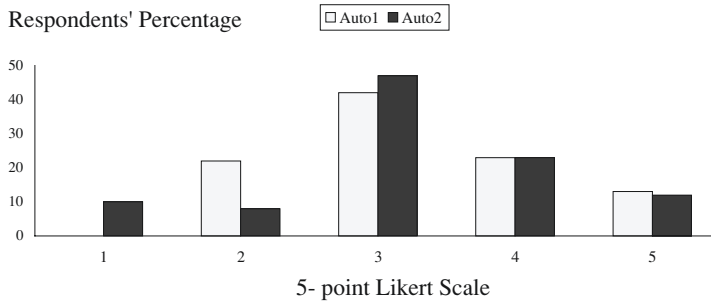


Fig. 4. Skill variety factor.

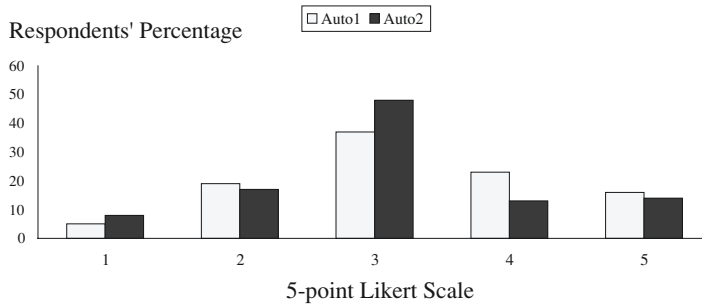


Fig. 5. Task identity factor.

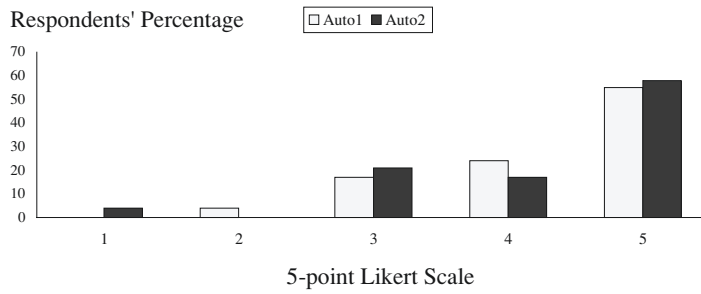


Fig. 6. Task significance factor.

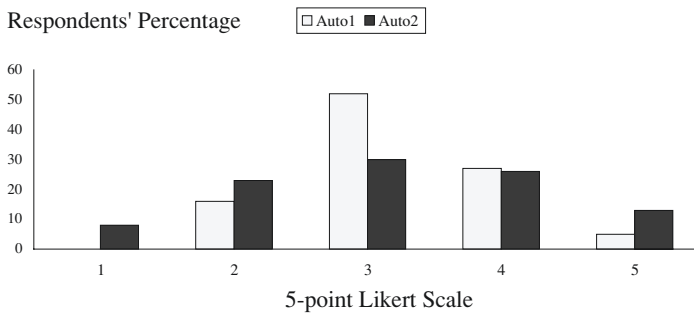


Fig. 7. Autonomy factor.

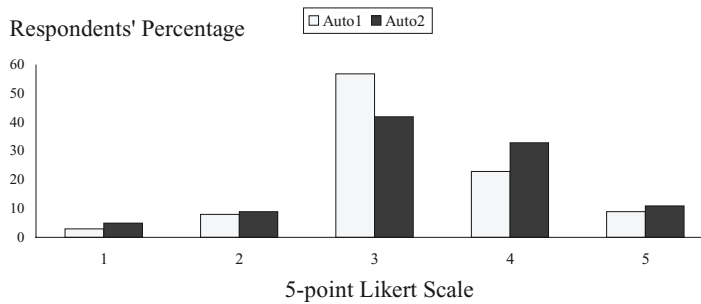


Fig. 8. Feedback factor.

Normality plots were examined for all factors using normality probability plot and detrended normal plot. This was taken into account prior to using any transformation and later analyzed statistically. Obviously, respondents from both companies reported maximum score at moderate level of Likert-type scale for job satisfaction, skill variety, task identity, autonomy and feedback factors. On the other hand, only the task significance factor shows maximum score at high level of Likert-type scale for both companies.

Reliabilities measures

The reliabilities analysis is presented in Table 1. Reliabilities measures for 6 items tested are high in both companies. Out of the 12 reliabilities measures, eight had reliabilities above 0.7. The rest had reliabilities measures around 0.6. The analysis indicated that most of the questions are reliable.

Table 1. Reliability measures using Cronbach's α for tested factors.

Tested factors	α Auto1	α Auto2
Skill variety	0.77	0.79
Task identity	0.76	0.69
Task significance	0.61	0.63
Autonomy	0.72	0.69
Feedback	0.86	0.88
Job satisfaction	0.89	0.82

Correlation of job satisfaction

The correlations of job satisfaction with job factors are presented in Figure 9.

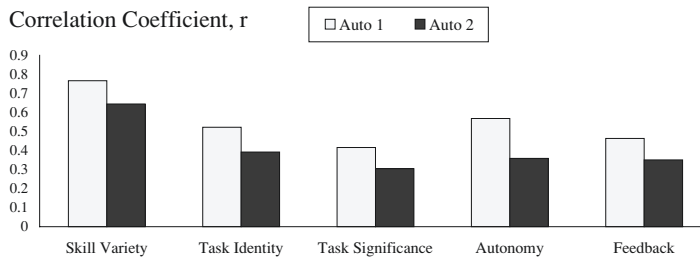


Fig. 9. Correlations of job satisfaction with five job factors. Correlation is significant at the 0.01 level (1-tailed).

DISCUSSION

The results of the present study showed that there is a significant positive correlation between job satisfaction and job factors tested. This is in agreement with empirical studies by Hackman and Oldham (1974) and Umstod et al. (1976) stating that the five job factors are significantly correlated to job satisfaction measures.

Obviously the graphs indicate that the correlation of job satisfaction with all job factors is higher in Auto 1 than in Auto 2. It can be implied that older, married and more experienced workers are highly satisfied with their job in comparison with the young, single and less experienced.

Age is one of the factors affecting job satisfaction. Studies in five different countries have proven that older workers are more satisfied than their younger counterparts (Kaya, 1995). The results also support the findings by Janson and Martin (1983) and Mwangi and McCaslin (1994) that older employees have higher job satisfaction. Lee and Wilbur (1985) suggested that job satisfaction increases with age. One explanation for this is that older employees are better able to adjust their expectations to the returns the work can provide (DeSantis and Durst, 1996).

The level of job satisfaction is higher the older the workers are. This suggests that the turnover rate among younger workers may be high. The tendency is that the younger workers will consider themselves more mobile and seek greener pastures perhaps in other private sectors. This scenario suggests that eventually Auto 2 will have a shortage of skilled and experienced workers.

The literature dealing with job satisfaction and years of experience has indicated that no relationship was found between job satisfaction and years of experience (Bedeian et al., 1992; O'Rielly and Roberts, 1975). However, research done by Boween et al. (1994), Mwangi and McCaslin (1994), Boltes et al. (1995) and Bertz and Judge (1994) found that overall job satisfaction increased as the years of experience increased.

There is no difference in level of education reported in both companies. Most workers hold SPM certificate (equivalent to “O” levels) in both companies or hold SPM certificate with other skill certificates. However, marital status did highlight the difference. Research done by Boween et al. (1994) stated that older, married and more experienced workers had higher levels of job satisfaction and were more committed to cooperative extension than younger, single and less experienced. In addition, Boween et al. (1994) also suggested that the younger, single and less experienced workers may still be deciding on their career path and thus this may preclude job satisfaction and organizational commitment.

The literature on the relationship between work, marital status and family has shown that there is a spillover effect between both domains. Most of the spillover studies have investigated how work or career satisfaction affects one’s personal life. Benin and Nienstedt (1985) examined how job satisfaction affects marital happiness and global happiness. They found that job satisfaction influenced marital happiness and the effects of job satisfaction and fulfillment interacted with the effects of marital happiness in producing global happiness.

The research on relationships between work satisfaction and marital characteristics in particular is extensive and is primarily located within the literature on marital satisfaction, work identity and satisfaction and dual career couples (Blair, 1998; Ray, 1990; Gaesser and Whitbourne, 1985). These studies suggested that career and family lives are entangled with one another and that to understand strain in one domain it is essential to have information on both facets of an individual’s life (Ludlow and Salvat, 2001). Therefore further research to resolve the above matter is needed.

Figure 9 also indicates a similar pattern for both manufacturing companies involved. This implies that similar industrial concepts and practices have their own pattern. Further study on this matter could resolve and decrease many industrial problems of the same type.

Another outstanding factors emerging in the results are skill variety (Auto 1: $r = 0.768$, Auto 2: $r = 0.673$) that appear to be strongly correlated with job satisfaction in both companies. Generally, more than 80% of respondents agree that they utilized moderate to very much skill. Based on the finding, it seems that workers tend to find skill variety and task identification as outstanding factors that have more impact on job satisfaction than other job factors. Hackman and Oldham (1974, 1976) stated that skill, task identity and task significance are psychological factors contributing to workers experiencing meaningfulness in their work. However, results from our study suggest that skill variety have greater impact on that matter compared to task identity and task significance.

The results on task significance factor indicate a maximum score at high-level of Likert-type scale for both companies. More than 60% of the respondents from both companies have chosen Likert-scale 5 for task significant factor. This is expected for automotive companies as emphasized by Hackman and Oldham (1974) in their report that workers who tightens nuts on aircraft brakes assemblies is more likely to perceive his work as significant than the workers who fills small boxes with paper clips even though the skill levels may be comparable. However, a low correlation with job satisfaction could imply that most workers are uneasy with high responsibilities perception of the products. This statement could answer why skill variety which is a factor related to experiencing meaningfulness at work (Hackman and Oldham, 1974) appears strongly correlated with job satisfaction and ignore task significance factor.

Finally, Das (1999), Hackman and Oldham (1974, 1976) and Umstod et al. (1976) stated that job satisfaction is one of the outputs in work design model that could be determined by job factors. It is obvious from the study that skill variety and task identity are the most significant factors in predicting job satisfaction in work design. Therefore the design of future work should emphasize job enrichment to support those factors. In addition, the emphasis on job enlargement is also important to support other job factors in order to obtain the level of job satisfaction needed.

CONCLUSIONS

A survey was conducted to determine the relationship between job factors and job satisfaction. It was found that the results of the study indicated that there is significant correlation between those factors. The finding supports the literature of Hackman and Oldham (1974, 1975, 1976) and Umstod et al. (1976) stating that the five job factors are significantly related to job satisfaction measures. Furthermore, the results highlight that skill variety and task identity are outstanding factors in the study of job satisfaction. Apart from that, the strength of the correlation is influenced by age, work experience and marital status. In conclusion, job factors are predictors of job satisfaction in work design and the strength of the correlation is influenced by age, work experience and marital status.

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