Motivation and Job Satisfaction: A Case Study of an Automobile Parts Manufacturing Plant

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Abstract - Work motivation is the most crucial factor affecting human performance in carrying out task activities. High-level of motivation can be obtained through increased job satisfaction. The objective of this study was to investigate job motivational potential level and job satisfaction among workers of automobile parts manufacturing plant, assess the association between job satisfaction and motivation and also determine how motivation dimensions will be related to job satisfaction fields. Totally 150 workers completed the questionnaires measuring their motivation and job satisfaction. Motivation was measured by Job Characteristics Questionnaire, designed, and job satisfaction was measured with a questionnaire adapted from Herzberg’s theory. The results revealed that 83.3% of workers have low MPS (motivating potential score) and MPS value for the remaining participant considerate moderate. 15.3%, 68.7% and 16% of respondents had low, moderate and high job satisfaction, respectively. The employees’ motivations and its all dimensions are related significantly to their job satisfaction and its all fields. Considering the effect of all dimension of motivation potential score on job satisfaction, the survey revealed that Skill variety was ranked first among the five main job characteristics, followed by Task identity and Task significance. The results are in agreement with the literature which focuses attention to management and policy makers implementing effective interventions to improve MPS and job satisfaction. Further research should be performed to find other factors influencing motivation and job satisfaction in under study company.

Keywords - Motivation, Job Satisfaction, Automobile parts manufacturing plant

1. Introduction

Improvement of performance for each organization depends on a variety of factors. Work motivation is the most crucial factor affecting human performance in carrying out task activities, and high-level of motivation can be obtained through increased job satisfaction (Ritz, 2009) (Roos, 2009) (Keshkatan A, Khraji M, & Yoosefi S, 2006). Motivation encourages and inspires employee to do their best work in achieving organizational goal. Nowadays, there are many incentives which can also serve as employee motivation factors such as salary and job security that are not the only motivating factors (Jo & Lee, 2012) (Child, 2012) (Tella A, Ayeni CO, & Popoola SO, 2007).


Herzberg in his two-factor theory (Herzberg, Snyderman, & Mausner, 1966) (also known as Herzberg’s motivation-hygiene theory) (Tan & Waheed, 2011) introduced the two factors namely “Motivators” and “Hygiene”, which result in job satisfaction at work place (Golshan, Kaswuri, Aghashahi, Amin, & Wan Ismail, 2011). Herzberg stated that, the presence of motivators (e.g. advancement, and possibility of growth) causes satisfaction and positive attitudes and the absence of hygiene factors (e.g. work conditions and personal life) leads to dissatisfaction and negative attitudes (Ahmed, et al., 2010).

Job enrichment, as a managerial activity and motivation technique to improve performance and increase the work motivation and satisfaction, give employees increased responsibility and opportunities to feel a sense of achievement in their jobs (Hackman JR, Oldham GR, Janson R, & Purdy K, 1975; Pride, Hughes, & Kapoor, 2012) (Mulili & Wong, 2011). The theoretical basis for job enrichment lays on the work done by Hackman and Oldham (1975) (Hackman JR, et al., 1975), in which the Job Characteristics Model is pro-
posed (GRANT AM, 2007). According to the model, work motivation and satisfaction are related to job characteristics including skill variety, task identity, task significance, autonomy, and job-based feedback (Oldham & Hackman, 2010).

The above five core dimensions can be combined to form a single index as Motivating Potential Score (MPS) for a job (Yaverbaum & Culpan, 2011). MPS can be used to assess the capacity of a job to motivate, so the high motivation potential level suggests the high the motivation and job satisfaction, and jobs with low MPS may be considered for redesign to increase motivation level (Loher BT, Noe RA, Moeller NL, & Fitzgerald MP, 1985) (Moorhead G & Griffin RW, 2013).

Researchers have focused on various aspects of work motivation and satisfaction. Hood and Smith concluded that the manager’s attention to work life quality of their staff can provide the basic needs and promote the productivity and satisfaction and also facilitate their permanent development (Hood JN & Smith HL, 1994). Werther believed that employee’s participation or involvement in work-related activities lead to an increased sense of responsibility and, in some cases, they feel they are in charge of decision making and it can affect their motivation (Werther WJ, 1982). In order to achieving the highest level of motivation, Robbins and Cenzo suggested that it is necessary managers offer more flexibility, and pay more attention to employees’ different needs and goals that in work environment have been ignored (Robbins SP, De Cenzo DA, & Coulter MK, 2011).

Job satisfaction plays an important role in the success of any organization and the positive participation of employee in work. It is effective on performance, organizational liability, physical/mental health, learning new job skill, and motivation (Thakor MV & Joshi AW, 2005). Satisfied employees have high internal work motivation, do high quality work performance and to take less absences (Bhambra AS, Chaturvedi BK, & Wolfe RE, 2011).

Motivation and job satisfaction are managerial issues, which take a great deal of time, energy and money in any organization. Job rotation, promotion, job enrichment, and job characteristics redesign are some of the known approaches to increase motivation and job satisfaction among employees (Bhambra AS, et al., 2011; Ebrahimpour H, khalihi H, Habibian S, & Saadatmand M, 2011).

Iran, a country tremendously rich in natural resources such as oil and gas, and numerous manufacturing and petro-chemical industries, serves as strategic and economic importance role in Persian Gulf and West Asia. Nevertheless, there is a great deal of potential in the Iranian educated and young workforce, they usually present low productivity. They seem unmotivated and disappointed to do their job effectively (Tajaddini, Mujtaba, & Bandenezh, 2010) (Namazie & Frame, 2007). So, the present study was aimed at investigating job motivational potential level and job satisfaction among workers of automobile parts manufacturing plant. This paper is also an attempt that focuses on how motivation and satisfaction can impact each other. The research presented here studies the factors affecting the mentioned issues.

So, the present work aimed to determine:

1. How much is job motivational potential level and job satisfaction among workers of automobile parts manufacturing plant?
2. Is there any significant association between job satisfaction and motivation?
And also
3. How can job motivation dimensions be related to job satisfaction fields?

2. Subjects and Methods

The present study was conducted in an automobile parts manufacturing plant in 2012 (%95 confidence level, 0.8 test power, and %25 absolute error). 150 men were assigned using cluster random sampling to participate in this survey. Research environment of understudy plant was Foundry unit which included four parts: Melting, Finishing, Aluminum and CNC. All data collected through Job Characteristics Questionnaire, designed by Hackman and Oldham and Job Satisfaction Questionnaire, based on Herzberg’s theory.

The former include 15 questions, scored according to Likert 5 point scale ranging from “Completely Incorrect = 1” to “Completely Correct = 5”, and it is used to calculate “Motivating Potential Score (MPS)” (Casey & Robbins, 2011) (Hackman & Oldham, 1976) (Carpenter, 2013; Faraji O, Pourreza A, Hosseini M, Arab M, & Akbari F, 2008; Zabihi, Khazadeh, Alipoor, & Malek, 2012) (Raeissi, 2012).

The questionnaire encompasses the five subscales: Skill variety (SV), Task identity (TI), Task significance (TS), Autonomy (AU), and Job-based Feedback (FB) (Oldham & Hackman, 2010), each subscale contains three questions.

Skill variety is “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 talents of the person” (Hackman & Oldham, 1976) (Casey & Robbins, 2011). Task identity is “the degree to which the job requires completion of a "whole" and identifiable piece of work; that is, doing a job from beginning to end with a visible outcome” (Hackman & Oldham, 1976) (Casey & Robbins, 2011). Task significance is “the degree to which the job has a substantial impact on the lives or work of other people, whether in the immediate organization or in the external environment” (Hackman & Oldham, 1976) (Casey & Robbins, 2011). Autonomy is “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” (Hackman & Oldham, 1976) (Casey & Robbins, 2011). Feedback from the job is “the degree to which carrying out the work activities required by the job results in the individual's obtaining direct and clear information about the effectiveness of performance” (Hackman & Oldham, 1976) (Casey & Robbins, 2011).
MPS can be calculated by (Raeissi, 2012; Yaverbaum & Culpan, 2011):

\[
MPS = \frac{SV + TI + TS}{3} \times AU \times FB
\]

Questions 2, 4, 6, 7, 10, and 15 are reversely scored.

As seen in above formula, the combination of job characteristic (Skill variety, Task identity, Task significance) has the same weight as Autonomy and Feedback, so AU and FB are given more importance in determining a job's Motivating Potential Score (Jain NK, Organisational Behaviour) (Griffith RW & Hom PW, 2001).

Maximum and minimum possible MPS scores are 125 and 1 respectively. MPS scores are interpreted as follow: scores below 50 was considered low, 50 to 87.5 as moderate, and greater than 87.5 high MPS. Scoring for all five core job characteristics was the same as MPS calculation method and there were three levels of low, moderate, and high MPS for each job characteristics (Faraji O, et al., 2008).

Job Satisfaction Questionnaire, based on by Herzberg's two factor theory, comprises 20 questions in a five-point Likert item (1: Strongly Disagree to 5: Strongly Agree). In fact, worker 'attitude toward their work was assessed by this tool (Lundberg, Gudmundson, & Andersson, 2009) (Richard, 2012). The questionnaire covers five areas as job satisfier factors: the Job itself, Advancement, Recognition, Achievement, and Responsibility (each aspect consists of four questions).

In Job itself, “the actual job performance is related to job satisfaction” (Cano & Castillo, 2004; Herzberg, Mausner, & Snyderman, 1959). Advancement is “designated an actual change in job status” (Herzberg, et al., 1959) (Cano & Castillo, 2004). Recognition “acts of notice, praise, or blame supplied by one or more superior, peer, colleague, management person, client, and/or the general public” (Herzberg, et al., 1959) (Cano & Castillo, 2004). Achievement is “accomplishment of endeavors including instances wherein failures were incurred” (Herzberg, et al., 1959) (Cano & Castillo, 2004). In Responsibility, “satisfaction is derived from being given control of personal work or the work of others and/or new job responsibilities” (Herzberg, et al., 1959) (Cano & Castillo, 2004).

Scores falls below 40 considered "low", 40 to 70 "moderate", greater than 70 "high job satisfaction" (Faraji O, et al., 2008). It is worth adding, validity and reliability of the both questionnaires were confirmed by was tested empirically by using the data obtained from several researches (Gilmore SA & Vyskocil-Czajkowski TL, 1992) (Hyun & Oh, 2011) (Maddox, 1981) (Zabihi, et al., 2012) (Van Saane, Sluiter, Verbeek, & Frings - Dresen, 2003).

In our study independent variables were including: age of the participants, their work experience, educational level, and work hours, physical workload having a second job and which part in company they work; and dependent variables were including: MPS and its all dimensions scores and Job satisfaction and its all fields scores.

### 3. Results

The job motivational potential level and job satisfaction was studied in an automobile parts manufacturing plant. Demographic results show that average age of the participants was 33.87 ± 5.27 years and average work experience was 10.3 ± 5.2 years. 71.3% employee had high school diplomas and higher and 95.3% of them was married. 97.3% of subjects hold a second job and average work hours in a week was 56 hrs. 20.7%, 37.3%, 17.3%, and 24.7% of sample worked in Finishing, CNC, Aluminum, and Melting parts respectively. According to self-reported data, 6% of workers assigned their work activity as light jobs, 11.3% as moderate, 60.7% as heavy, and 22% as very heavy.

The Statistical indices for five dimensions of job characteristics and Motivating Potential Score (MPS) are given in Table 1. As is obvious from Table 1, mean MPS was 36.84 ± 14.68 (i.e. lower than 50) and 125(83.3%) of workers have low MPS and MPS value for the remaining participants considerate moderate MPS.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Average ±SD</th>
<th>Low Value</th>
<th>Moderate Value</th>
<th>High Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
<td>Frequency</td>
</tr>
<tr>
<td>MPS</td>
<td>36.84±14.68</td>
<td>125</td>
<td>83.3</td>
<td>25</td>
</tr>
<tr>
<td>Skill variety (SV)</td>
<td>25.6±21</td>
<td>136</td>
<td>90.7</td>
<td>11</td>
</tr>
<tr>
<td>Task identity (TI)</td>
<td>20.29±18.28</td>
<td>141</td>
<td>94</td>
<td>8</td>
</tr>
<tr>
<td>Task significance (TS)</td>
<td>19.95±14.53</td>
<td>146</td>
<td>97.3</td>
<td>4</td>
</tr>
<tr>
<td>Autonomy (AU)</td>
<td>31.71±26.27</td>
<td>118</td>
<td>78.7</td>
<td>26</td>
</tr>
<tr>
<td>Feedback (FB)</td>
<td>25.33±19.98</td>
<td>137</td>
<td>91.3</td>
<td>11</td>
</tr>
</tbody>
</table>

According data obtained from Job Satisfaction Questionnaire, descriptive statistical data include: mean = 55.94 ± 13.45; low job satisfaction frequency (percentage) =23 (15.3%); moderate job satisfaction frequency (percentage) = 103 (68.7%), and high job satisfaction frequency (percentage) 24 (16%). Mean and standard deviation value for the Job itself, Advancement, recognition, achievement, and responsibility were 9.94 ± 4.26, 10.81 ± 3.77, 11.72 ± 4.32, 12.68±4, and 10.77 ± 2.89 respectively. One-Way ANOVA test was used to measure the difference of motivating potential score and job satisfaction among the mentioned parts. According to the sig. values of 0.016 and 0.047, there was significant difference in
the level of motivating potential score and job satisfaction between employees working in different parts, respectively. Figure 1 shows a comparison between mean MPS and job satisfaction values at understudy units. As can be seen in Figure 1, Melting part has the highest mean and motivating potential score and job satisfaction in Foundry unit.

![Figure 1. Comparison between MPS and job satisfaction values](image)

The relation between MPS and job satisfaction variables and marital status was evaluated using an Independent Sample T-test. The findings did not show any significant correlation between MPS and marital status (P>0.05), and job satisfaction and marital status (P>0.05). The result of Pearson’s test, which we applied to measure statistical relationship between motivating potential score (and all dimensions) and job satisfaction (and all area), implied that there was significant correlation between MPS (and all five dimensions) and job satisfaction (and all five area) (Table 2).

**Table 2. Relationship between Job Characteristics and Job Satisfaction Factors**

<table>
<thead>
<tr>
<th>Variables</th>
<th>MPS</th>
<th>Skill variety</th>
<th>Task identity</th>
<th>Task significance</th>
<th>Autonomy</th>
<th>Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Correlation Coefficient</td>
<td>P-value</td>
<td>Correlation Coefficient</td>
<td>P-value</td>
<td>Correlation Coefficient</td>
<td>P-value</td>
</tr>
<tr>
<td>Job satisfaction</td>
<td>0.422</td>
<td>0.001*</td>
<td>0.223</td>
<td>0.006*</td>
<td>0.201</td>
<td>0.021*</td>
</tr>
<tr>
<td>Job itself</td>
<td>0.573</td>
<td>0.001*</td>
<td>0.323</td>
<td>0.001*</td>
<td>0.307</td>
<td>0.001*</td>
</tr>
<tr>
<td>Advancement</td>
<td>0.540</td>
<td>0.001*</td>
<td>0.349</td>
<td>0.001*</td>
<td>0.304</td>
<td>0.001*</td>
</tr>
<tr>
<td>Recognition</td>
<td>0.362</td>
<td>0.001*</td>
<td>0.206</td>
<td>0.012*</td>
<td>0.201</td>
<td>0.015*</td>
</tr>
<tr>
<td>Achievement</td>
<td>0.358</td>
<td>0.001*</td>
<td>0.169</td>
<td>0.039*</td>
<td>0.181</td>
<td>0.026*</td>
</tr>
<tr>
<td>Responsibility</td>
<td>0.336</td>
<td>0.001*</td>
<td>0.207</td>
<td>0.011*</td>
<td>0.154</td>
<td>0.061*</td>
</tr>
</tbody>
</table>

*The mean difference is significant at the 0.05 level.

Results of regression analysis and final model of influence of MPS’s dimensions on job satisfaction are presented in Table 3. The findings in Table 3 reveal that Skill variety has the greatest effect on job satisfaction and Task identity and Task significance are in next ranking.
Table 3. Results of regression analysis and final model of influence of MPS’s dimensions on job satisfaction

<table>
<thead>
<tr>
<th>Model</th>
<th>Non-standard coef.</th>
<th>Standard coef.</th>
<th>t</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Standard Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>Fixed coef.</td>
<td>42.225</td>
<td>1.817</td>
<td>23.239</td>
<td>0.000</td>
</tr>
<tr>
<td>Skill variety</td>
<td>0.214</td>
<td>0.050</td>
<td>0.336</td>
<td>4.295</td>
</tr>
<tr>
<td>Task identity</td>
<td>0.177</td>
<td>0.065</td>
<td>0.241</td>
<td>2.741</td>
</tr>
<tr>
<td>Task significance</td>
<td>0.161</td>
<td>0.069</td>
<td>0.174</td>
<td>2.346</td>
</tr>
<tr>
<td>Autonomy</td>
<td>0.038</td>
<td>0.041</td>
<td>0.074</td>
<td>0.936</td>
</tr>
<tr>
<td>Feedback</td>
<td>0.009</td>
<td>0.050</td>
<td>0.013</td>
<td>0.170</td>
</tr>
</tbody>
</table>

4. Discussion

The study attempts to investigate the level of motivation and job satisfaction in a field experiment in Iran. Our other objective was to reveal the relationship between employees’ motivation related to job characteristics and their perceived job satisfaction. As our finding implied, there was a positive relationship between motivation and job satisfaction ($P = 0.001$) and Skill variety, a job characteristics, has the most significant correlation with job satisfaction. It can be concluded that jobs that are high in motivating potential can result in high job satisfaction, which is consistent with Hackman et al.’s (1975) (Hackman JR, et al., 1975), Graen and Novak (1982) (Graen, Novak, & Sommerkamp, 1982) and Faraji et al.’s (2008) (Faraji O, et al., 2008). Our results support the hypothesis about the influence of job enrichment on performance and job satisfaction (Oldham & Hackman, 2010; Orpen, 1979). Significant relation between MPS and job satisfaction presents that job enrichment will increase job satisfaction. This result agrees with other studies (Hoole & Vermeulen, 2003) (Iffuedo, 2003) (Ubom & Joshua, 2004) (Ladebo, 2005) regarding effect of MPS and job enrichment on job satisfaction. Low mean of MPS among the participants reveal that their job does not motivate them enough. Kalesi and et al (2005) (Khalesi, Amiresmaeili, & Ghaderi, 2005) reported low MPS among hospital professions in Kerman, Iran. Majidi (1998) (Majidi M, 1998) showed that high MPS among managers in the central office of Jihad Sazandegi Ministry Tehran, Iran and low MPS among it’s clerks.

Contrary with our finding, Tang indicated that teachers of social development school in Hong Kong had high MPS (Tang, 2000) and also High MPS in the Rehabilitation Center of Tehran Welfare was reported by Porhadi et al (2009) (Porhadi, Kamali, Khalesi, & Akbarfahimi, 2009). Porhadi and et al only studied 13 subjects in their research that this inconsistency between our results and them can be due to different sample size and certainly job identity.

We found that there is the significant relationship in all dimension of job characteristics and all area of job satisfaction. Our results suggested that a positive correlation between Feedback and job satisfaction (Dawal STM & Tahaz, 2004), that it can results from presence of organization instructions for employee, hierarchical structures and type of administrative system in our research environment ,however this finding is inconsistent with some researches (Birnbaum, Farh, & Wong, 1986) (Faraji O, et al., 2008).Numerous scholars suggested that Autonomy leads to job satisfaction, decrease occupational stress, and positively related to role breadth and job performance (Morgeson FP, Delaney-Klinger K, & Hemingway MA, 2005) (Karasek Jr, 1979) (Hafizh & Imam).Task significance and job satisfaction can be related to each other resulting from the effect of job on personal life, commitment to society, and individual perception on job (Loher, Noe, Moeller, & Fitzgerald, 1985).

As table 3 implies, Skill variety has the greatest magnitude of effect (the highest size of effect – $B$ in Table 3) on job satisfaction, and Task identity and Task significance come next. This result almost supports Cluse-Tolar’s (2004) study (Cluse-Tolar, 2004) on the impact of job characteristics on a groups of social and human service workers in Ohio , USA. However, our finding is not consist with the result of Faraji et al (2009) (Faraji O, et al., 2008) in which Task identity had the most significant impact on job satisfaction. As the results of Job Satisfaction Questionnaire shows, mean job satisfaction value among the participants was 55.94, which mention the moderate level of job satisfaction. While the Job itself and Responsibility had the lowest effect on job satisfaction , it is mainly reported as a function of job promotion and advancement (Kostas, 2011). The importance of having responsibility in job was also confirmed in other research (Wild, Parsons, & Dietz, 2006).

Among the different understudy parts of Foundry unit, Melting workers had the highest motivating potential score. This might be due to the type of job design in this part and the higher skill variety, autonomy and feedback comparing with other parts. Low mean MPS in Aluminum part implies that there is lack of task variety and poor feedback, and autonomy imposed by job design. It is recommended, that the education planners study the level of MPS in more detail in that part and find the solution to deal with the shortcomings.

The observed positive relation between MPS (and its dimensions) and job satisfaction in this study agrees with that observed in other research (Ubom & Joshua, 2004) (McKenna, 2000) (Michaelowa, 2002) (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000) (Filak & Sheldon, 2003) (DeVaro, Li, & Brookshire, 2007) (Tyler, et al., 2006). Our finding studies emphasize on effect of the motivating potential of the job on
the level of satisfaction that worker have. Therefore, low motivation and poor job satisfaction enhance job burnout and turnover. This work prescribes implementing effective interventions to improve MPS and job satisfaction for the management and policy makers. Considering low MPS and poor job satisfaction in Iranian workers, future survey is recommended to find the reasons and the applicable solutions for reducing these problems.

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