Case study on job satisfaction of subcontractors: Marine project

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1. Introduction

Every now and then we hear the developments taking place in Construction sectors. New techniques will be invented, or the new designs come into picture. But there are items which cannot be done without the involvement of humans. Engineers are the head to guide their workers in a way the project outcome is just the way they expected. Every management give importance to engineers, fulfill their needs and provide the required facilities, few companies fail to satisfy the labors who is very important to complete their project. Job satisfaction can be affected in many ways, Job satisfaction concept was developed in many ways by many different researchers and practitioners. One of the definitions in organizational research is that of Dugguh and Ayaga (2014) and Lock (1976), who defined job satisfaction as “a pleasurable or positive emotional state resulting from the appraisal of one’s job or job experiences” can also be defined as how content an individual is with his or her job, whether he or she likes the job or not. In this thesis an attempt is made to study the job satisfaction of subcontractor’s workers working for a Marine Project.

Relationship between job satisfaction and employee performance in organizations with particular reference to Nigeria was traced by Dugguh and Ayaga (2014).

Literature review was done related to theories of job satisfaction such as affective events, two-factor, equity and job characteristics and found number of factors like achievement, recognition, responsibility, payment, work conditions and so on, have positive influence on employee performance in organizations. Technicians and front office staffs were considered for the study by Datta and Datta (2013). They found high amount of satisfaction in front office staffs with the organization as a Staff and were also highly satisfied with technical tools when compared with technicians and they concluded saying regular meetings on how to improve productivity is must with the employees which helps to boost the organization productivity level and it is also required to full fill the employee needs. Daryanto (2014) conducted a study in Indonesia on Mechanical Engineering Teachers. After the Analysis, they found job transfer to a different location, peer assistance and continuous educational training to refresh and elevate teacher’s knowledge, skills, ability, and experience can increase teacher’s satisfaction. Job Satisfaction may Vary based on Age group, Sex, Experience, Marital Status or any other demographic variable. To find if age affects the job Satisfaction Chileshe and Haupt (2010) undertook a survey on construction workers within the Western Cape Province. And they found aged workers to be slightly more satisfied with their jobs compared to less aged workers. According to Ortiz et al. (2015), women in engineering academia should have the proper tools, working conditions, and effective mentoring to successfully achieve promotion and tenure. Payment, benefits and job security are most important to women as identified by Dabke et al. (2008) even though they are satisfied with their work. Salary, work autonomy, and task significance
are the very important factor that gives job satisfaction for the project managers according to Ling and Loo (2013). Park et al. (2008) in their study examined the need for cognition at both the individual level and team levels. Paper tests a cross-level model which predicts that the effect of individual need for cognition on individual’s job satisfaction is moderated by team need for cognition.

**Objectives**

1. To study the factors affecting job satisfaction by literature review.
2. Analyzing the factors affecting job satisfaction in Marine Project.
3. Finding how job satisfaction factors vary with company, Experience and Marital status.

**2. Methodology**

For Data sampling Questionnaires were framed after literature review; Pilot study was carried using project manager, Project Engineer, Planning manager and Foremen (head of workers). which was distributed among workers of subcontractors. Data Collection of each worker was personally questioned and asked to tick on the circles as per their satisfaction and importance on the questionnaire sheet provided to them. Data were collected on 5 point Likert scale. Data Analysis was done using Cranach’s alpha Correlation between the factors were tested using spearman’s correlation. Significance of each factors were tested using non parametric chi-square test, significance factor below 0.05 is considered for Ranking. Ranking was given according to RII (Relative Importance Index). Job satisfaction between subcontractors were obtained by comparing the means on significant factors resulted from hypothesis testing.

**3. Result and analysis**

**3.1. Reliability analysis using Cronbach’s alpha**

Reliability analysis result for Importance was 0.8 and for Satisfaction was 0.83, indicating good internal consistency of the questionnaires.

**3.2. Relative importance index**

Top important factors shown in this test were protective equipment (rank1), understanding of family responsibility by management (rank 1), feedback from coworker (rank 2) and good friendly coworkers (rank 2), opportunities for promotion, experience and wages (rank 3).

Top satisfied factors were role clarity (rank1), personal protective equipment (rank 2) and good friendly coworkers, experience and availability of information to carry out work (rank 3).

**3.3. Analysis result based on Spearman’s Correlation**

Spearman’s Correlation (2 Tailed) test was performed to check correlation between the factors. Strong correlation ($r=0.69$, $p=0.00$) was found for effectiveness in technical supervision & self-protective equipment for performance of job. Wages seemed highly correlated with well and good hygienic facilities provided in company ($r=0.58$, $p=0.00$) conflicts resolving capability had high correlation with feedback from coworker ($r=0.53$, $p=0.00$). Self-Knowledge increases with good helpful co-workers around ($r=0.52$, $p=0.000$).

**3.4. Analysis result based on hypothesis testing**

For hypothesis test, the factors identified do not have any significance on job satisfaction- $H_0$ (Null Hypothesis).

The factors identified do have significance on job satisfaction- $H_a$ (Alternate Hypothesis): Test was conducted using SPSS 20. The mean Values for importance and satisfaction and corresponding paired t test values are shown in Table 1, items with significant differences at the 0.05 level were ranked and the rankings are shown in the Table 1. Understanding of family responsibilities, Co-Workers Feedback, Leadership, Experience, Opportunities for promotion, Role clarity, Wages topped on the other hand Level of job difficulty, Work pressure, once knowledge and leniency in working hours seemed less important.

Workers were satisfied with Role Clarity, Leadership, Experience, Separate and Hygienic Sanitary Facilities on sites. Less satisfied with wages, leniency in working hours, Opportunities for promotion and Work pressure. Importance in wages and Opportunities for promotion was high but satisfaction level was low, so management has to give importance on these factors.

**3.5. Analysis by comparing mean values**

Mean Values based on Company, experience, and Marital Status of 2 Companies is compared to identify the variation in factors. Only the factors significant at 0.05 from hypothesis test were chosen. Separate and hygienic sanitary facilitates on job sites, Understanding of family Responsibilities by supervisor and/or Management, Friendly and helpful co-workers, Opportunities for Promotion seemed more important to them but less satisfaction (Table 2).

**4. Conclusion**

Construction Industry is rising day by day; huge improvement is seen in the field of construction from past few years. Development in construction Industry leads to development of the country. Study on Human behavior is complex, because of variation in the mind set. This variation of mind set may vary from one individual to another, and it is very important for the management to understand the
mind sets of every individual in order to deal with them and achieve the organization goal.

### 5. Limitations

Labors were hesitated to answer about few factors that they were not actually satisfied with. So, few factors have got high ranking than they actually deserve. Labors were not familiar with other languages than their mother tongue, thus their capability of understanding on each factor may vary. Study was conducted only based on labors working for same company so better result would have obtained if there was a comparison on labors working for different companies.

### 6. Future works

In this study only labors working for same company were considered, in future a study on job satisfaction can be made by comparing labors working for different companies. In the study the comparisons are made based on demographic variables, in future comparisons can be made based on the work involved. It was a study conducted on a same region; future scope can be by comparing the states of mind based on various regions. A study can be made on how the job satisfaction varies between the Engineers and labors of same company, different companies, and labors belonging to different places.
Table 2: Satisfaction and dissatisfaction based on demographic variable

| Sl. No | Company Factors | A   | B   | A   | B   | A   | B   |
|--------|-----------------|-----|-----|-----|-----|-----|-----|
| 1      | Role Clarity    | 4.2778 | 4.3333 | 4.2778 | 4.3333 |
| 2      | Leadership      | 4.1667 | 4.2222 | 4.1667 | 4.2222 |
| 3      | Experience      | 4.1667 | 4.1111 | 4.1667 | 4.1111 |
| 4      | Wages           | 4.0000 | 4.0000 | 4.0000 | 4.0000 |
| 5      | Work pressure   | 4.0000 | 4.0556 | 4.0000 | 4.0556 |
| 6      | Good helpful co-worker's | 4.4444 | 4.2778 | 4.4444 | 4.2778 |
| 7      | Opportunities for promotion | 4.5000 | 3.9444 | 4.5000 | 3.9444 |
| 8      | Self-ability to execute work | 3.8889 | 3.9444 | 3.8889 | 3.9444 |
| 9      | Personal protective equipment for job performance | 4.2778 | 4.2222 | 4.2778 | 4.2222 |
| 10     | Separate and hygienic sanitary facilities on job sites | 4.2222 | 4.0000 | 4.2222 | 4.0000 |
| 11     | co-workers feedback | 4.4444 | 4.0556 | 4.4444 | 4.0556 |
| 12     | Understanding of family responsibilities by supervisor | 4.2778 | 4.0000 | 4.2778 | 4.0000 |

Sl. No | Experience (years) | <5 | 5 to 15 | >15 |
|--------|-------------------|----|----------|-----|
| 1      | Role Clarity      | 4.0000 | 4.3333 | 4.2632 | 4.2632 | 4.2000 | 4.6000 |
| 2      | Leadership        | 4.1667 | 4.1111 | 4.1053 | 4.1579 | 4.4000 | 4.2000 |
| 3      | Experience        | 4.1667 | 4.0000 | 4.0526 | 4.2105 | 4.6000 | 4.4000 |
| 4      | Wages             | 4.0000 | 3.7778 | 4.1053 | 4.0000 | 4.8000 | 3.4000 |
| 5      | Work pressure     | 3.6667 | 3.3333 | 3.4737 | 3.7895 | 4.6000 | 3.8000 |
| 6      | Good helpful co-worker's | 4.1667 | 4.2778 | 4.1053 | 4.2105 | 5.0000 | 4.0000 |
| 7      | Opportunities for promotion | 4.3333 | 3.8333 | 4.0526 | 3.6316 | 4.2000 | 4.0000 |
| 8      | Self-ability to execute work | 3.7778 | 4.0556 | 4.3579 | 4.0526 | 3.6000 | 4.4000 |
| 9      | Personal protective equipment for job performance | 4.2778 | 4.2778 | 4.1579 | 4.0526 | 5.0000 | 4.4000 |
| 10     | Separate and hygienic sanitary facilities on job sites | 4.1667 | 4.1111 | 4.1579 | 4.0000 | 4.0000 | 4.4000 |
| 11     | co-workers feedback | 4.3889 | 4.0556 | 4.1053 | 3.8947 | 4.4000 | 4.6000 |
| 12     | Understanding of family responsibilities by supervisor | 4.0556 | 4.1667 | 4.4211 | 4.0000 | 4.6000 | 3.8000 |

| Sl. No | Marital Status | Unmarried | Married |
|--------|----------------|-----------|---------|
| 1      | Role Clarity   | 4.1538 | 4.3846 | 4.1379 | 4.3103 |
| 2      | Leadership     | 4.0000 | 4.1538 | 4.2414 | 4.1379 |
| 3      | Experience     | 3.9231 | 4.0769 | 4.2759 | 4.1724 |
| 4      | Wages          | 3.8462 | 3.2308 | 4.2759 | 4.1034 |
| 5      | Work pressure  | 3.2308 | 3.6923 | 3.8966 | 3.8621 |
| 6      | Good helpful co-worker's | 4.0769 | 4.3846 | 4.3103 | 4.1379 |
| 7      | Opportunities for promotion | 4.3077 | 3.6154 | 4.1379 | 3.8276 |
| 8      | Self-ability to execute work | 3.5385 | 4.1538 | 3.7241 | 4.0690 |
| 9      | Personal protective equipment for job performance | 4.5385 | 4.2308 | 4.2069 | 4.1724 |
| 10     | Separate and hygienic sanitary facilities on job sites | 4.3846 | 4.0000 | 4.0345 | 4.1379 |
| 11     | co-workers feedback | 4.3077 | 4.0000 | 4.2414 | 4.0690 |
| 12     | Understanding of family responsibilities by supervisor | 4.0769 | 3.9231 | 4.3793 | 4.1034 |

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References

Chãves N and Haupt TC (2010). The effect of age on the job satisfaction of construction workers. Journal of Engineering Design and Technology, 8(1), pp.107-118.
Dabke S, Salem O, Genaidy A and Daraiseh N (2008). Job satisfaction of women in construction trades. Journal of Construction Engineering and Management, 134(3): 205-216.
Daryanto E (2014). Individual Characteristics, Job Characteristics, and Career Development: A Study on Vocational School Teachers’ Satisfaction in Indonesia. American Journal of Educational Research, 2(8): 698-702.
Datta PP and Datta D (2013). A study on motivation and satisfaction of employees in corporate hospitals in Kolkata, India. National Journal of Medical Research, 3(1): 56-59.

Duggah SI and Ayaga D (2014). Job satisfaction theories: Traceability to employee performance in organizations. Journal of Business and Management, 16(5): 11-18.

Ling FYY and Loo CM (2013). Characteristics of jobs and jobholders that affect job satisfaction and work performance of project managers. Journal of Management in Engineering, 31(3): 04014039. https://doi.org/10.1061/(ASCE)ME.1943-5479.0000247

Locke EA (1976). The nature and causes of job satisfaction. In Dunnett MD (Eds), Handbook of Industrial and Organizational psychology: 1297-1349. Rand McNally, Chicago, USA.

Ortiz AY, Nicholls GM, and Leonard KM (2014). Career Stage Analysis of Women Civil Engineering Faculty Perceptions of Job Satisfaction. Journal of Professional Issues in Engineering Education and Practice, 141(3): 04014013. https://doi.org/10.1061/(ASCE)EI.1943-5541.0000231

Park HS, Baker C and Lee DW (2008). Need for cognition, task complexity, and job satisfaction. Journal of Management in Engineering, 24(2): 111-117.