

A Study on Job Satisfaction among Engineers with Master's Degree in Construction Management in Kathmandu Valley

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Abstract

This study comprises of the assessment of level of job satisfaction of the engineers who hold a master's degree in construction management in Kathmandu Valley by means of the Minnesota Satisfaction Questionnaire. The study population includes three engineering colleges in Kathmandu Valley. They are Nepal Engineering College (NEC), Institute of Engineering (IOE), Lumbini International Academy of Science and Technology (LIASST). 70 sample responses were received as primary data. Cronbach's alpha was calculated by using SPSS and found to be 0.939. Engineers with master's degree in construction management are highly satisfied with their job due to relation with co-workers with mean value of 3.94. This suggests that their colleagues' supportive behavior positively influences their work progress. In contrast, engineers are highly dissatisfied with the 'Remuneration - My pay scale vs Job description' as their value is below the acceptable level i.e. 2.74.

Keywords: Job Satisfaction, Dissatisfaction, Minnesota Satisfaction Questionnaire.

1. Introduction

Nepal has been experiencing significant growth in infrastructure development projects, including transportation, energy, and urban development. Assessing the job satisfaction of engineers in these sectors is crucial to understand the impact of their educational background on their satisfaction levels and to identify potential areas for improvement.

Human resources are the backbone of any organization, and managing them well can increase employee productivity, motivation, and retention. They directly or indirectly contribute to achieving organizational goals and thus increase the importance of human resources. In other words, the management of human resources is concerned with employee engagement at all levels.

Employees are now regarded as valuable assets essential for the organization's continued viability. Consequently, the level of job satisfaction among employees serves as a significant gauge of their sentiments towards their work and can predict work behaviors like organizational citizenship, absenteeism, and turnover, ultimately contributing to the organization's enhanced success. Conversely, when employees experience low levels of satisfaction, it can result in diminished commitment to their work and increased turnover rates within the organization. They may physically withdraw or become emotionally and mentally disengaged from their roles. As a result, low job satisfaction not only amplifies the intention to leave but also diminishes the employee's overall contribution to the organization (Crawford, 2004).

When employees join organizations, they bring with them a set of desires, needs, and ambitions known as job expectations. Among these, job satisfaction holds the utmost importance as it reflects employees' overall assessment of and attitude towards their job and the organization. Job satisfaction implies that individuals' value and appreciate their work, fostering a positive mindset that drives them to strive for organizational goals and maintain strong commitment to the organization.

Conversely, organizations with high levels of organizational commitment tend to experience improved performance, reduced absenteeism, and minimal delays from their employees. Particularly in public and

developmental sectors such as local level governments, organizations greatly benefit from employees who go above and beyond their regular duties for the best interests of the organization.

Cullinan (as cited in Luddy, 2005) states that poor salaries are not the only reason as to why organizations are experiencing employee satisfaction concerns, Cullinan determined that other work factors such as the environment and poor management are also shown to contribute towards lower levels of job satisfaction. This dissatisfaction often leads to specialized, scarcely skilled, or professional employees seeking alternative employment.

Using the Balanced Worth procedure to evaluate the effect of educational attainment on job satisfaction, we have encountered the same result over and over: more educated workers report to be more satisfied with their working conditions. Throughout our analysis, we have basically found monotonicity in the relationship between education and job satisfaction with very few exceptions which, in our view, do not deserve much attention given the low value of the BWV differential in such cases. (Pita, 2021)

1.1 Statement of Problem

While numerous studies have explored the relationship between educational attainment and job satisfaction, limited research has focused specifically on the effects of a master's degree in construction management on job satisfaction within the engineering profession. This knowledge gap prevents us from comprehensively understanding the benefits and potential drawbacks of pursuing an advanced degree in this field.

The problem to be addressed in this study is to investigate and compare the impact of a master's degree in construction management on job satisfaction among engineers. By conducting a comparative study, we can analyze the experiences and perceptions of engineers with a master's degree in construction management, identifying any disparities in job satisfaction levels, career advancement opportunities, salary prospects, and overall professional fulfillment.

1.2 Research Objective

To assess the level of job satisfaction among engineers with a master's degree in construction management in Kathmandu Valley.

2 Methodologies

2.1 Research Design and Approach

Its objective is to investigate the job satisfaction and organizational commitment of engineers who hold a master's degree in construction management. The study carries significant importance for the following reasons:

- It provides valuable insights for engineers considering a master's degree, helping them understand the potential benefits and career outcomes associated with advanced education in Construction Management.
- The findings offer guidance to educational institutions offering Construction Management programs, enabling them to tailor their curriculum and training to meet the specific needs of engineers, enhancing their career prospects and job satisfaction.
- Employers and construction companies can utilize the study's findings to develop effective talent management strategies, create opportunities for career growth, and enhance job satisfaction among engineers.
- Policymakers can utilize the research to shape
- educational policies and initiatives that promote advanced education and professional development in the construction industry, leading to improved job satisfaction and career outcomes.

The approaches that were used in this study are qualitative research approaches as the collected data were presented and analyzed with proportion. To measure the degree of job satisfaction a quantitative approach

was used.

2.1 Study Area, Study Population, Sample Size

The study area covers all engineering colleges having Construction Management Program in Kathmandu Valley as a population from which sample is collected for the study.

The research focuses on a study population of engineering colleges that offer Master's Degree in Construction Management program in Kathmandu Valley. The respondents for the study were selected from among engineers who have already completed master's degree in construction management. In the Kathmandu Valley, there are three engineering colleges that have Construction Management programs, distributed among three universities. Among these, Nepal Engineering College (NEC) is affiliated with Pokhara University, Institute of Engineering (IOE) is affiliated with Tribhuvan University and Lumbini International Academy of Science and Technology (LIASST) is affiliated with Lumbini Buddhist University

The sample size has been determined using a simple random sampling method. A simple random sample is a randomly selected subset of a population. In this sampling method, each member of the population has an exactly equal chance of being selected. (Thomas, 2023)

Table 1: Population and Sample Size

S.N.	Respondent Types	No. of Graduates	Sample Size	No. of Responses	Response Percentages
1.	Pokhara University (NEC)	926	43	45	64.29%
2.	Tribhuvan University (IOE)	256	12	13	18.57%
3.	Lumbini Buddhist University (LIASST)	200	9	12	17.14%
	Total	1382	64	70	100%

2.2 Primary and Secondary Data Collection

Primary data provides more actual figures and is more precise. The following methods were used to collect the primary data:

Questionnaires: A set of questionnaires were prepared to measure the Job Satisfaction of the engineers with the master's degree in construction management based on questionnaire in the previous study that was done to measure the level of job satisfaction of civil engineers working in consulting, construction and government sector of Nepal and distributed to the limited civil engineers who have already completed master's degree in construction management in the Kathmandu Valley. This set of questionnaires being tested and used for assessment of job satisfaction signifies the validity of the questionnaires.

To check the validity of the questionnaire, a pre-test was conducted for engineers with master's degree in construction management and revised according to the suggestion given by the respondent. After the Pre-test, a questionnaire was distributed to all the graduates in Construction Management from NEC, IOE and LIASST. The questionnaire is attached in the Appendix. It consists of both open and closed ended question and have 4 sections: Demographic of the Respondents, Minnesota Satisfaction Questionnaire, Construction Management program alignment with practical job opportunities questionnaires and questionnaires related to factors that can mitigate or prevent job dissatisfaction among engineers with a master's degree in construction management. Respondents have to response in five-point Likert type scale ranging from very dissatisfied (1) to very satisfied (5). At the end of the questionnaire, space was provided for respondents to make comments. Google form methods and hard copies distribution method were applied for the collection of data.

Journal articles, textbooks, websites, social media, news, etc. were used for the collection of secondary data. Reports and publications regarding the study were studied to gather ideas about the research problem, issues, and other ideas related to the research works.

3. Research Matrix

The research matrix for the study has been developed and depicted in table 2 below.

Table 2: Research Matrix

S.N.	Objectives	Data Required	Data Analysis	Outcomes
1.	To assess the level of job satisfaction among engineers with a master's degree in construction management in Kathmandu Valley.	The Minnesota satisfaction questionnaire filled up by the respondents.	Mean score and SD, and Descriptive statistics such as percentage, charts. Hypothesis testing.	Understanding the overall job satisfaction level among engineers with a master's degree in construction management.

4. Results and Discussions

4.1 Demographic Analysis of the Respondents

The data was collected in accordance with the research objectives to gather general information about the respondents. Subsequently, the collected data has been thoroughly analyzed and documented, providing an overview of the findings for all participants.

Gender of Respondents: The gender distribution of the respondents showed that 81% of them were male and remaining 19% were female. It shows that majority of engineers with master's degree in construction management were male.

Age Group of respondents: A large portion of the participants are relatively young. About 27% of them fall in the age range of 26 to 30, while 39% are between 31 and 35 years old, around 14%, falls within the 36-40 age category. Lastly, about 20% of the participants are above the age of 40.

Education Status of respondents: Most respondents, about 98%, were master's degree holders and only 2% each were Ph.D degree holders.

University: 64% of the respondents completed their master's degree from NEC, Pokhara University, 19% from IOE, Tribhuvan University, and 17% from LIAST, Lumbini Buddhist University.

Field of Work: The frequency distribution of field of work in the study population has been presented in the figure below.

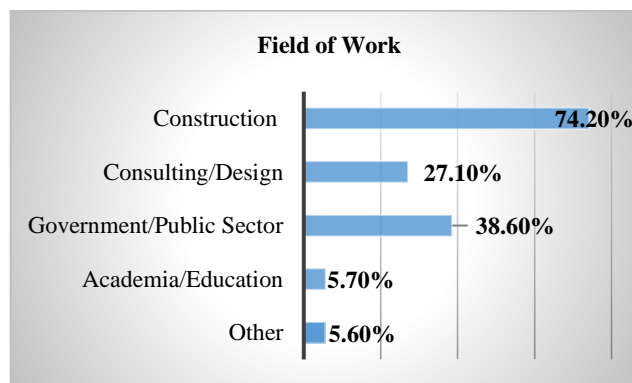


Figure 1: Respondent's Field of Work

The figure shows that the Construction Sector employs the largest group, at 74.20%. Government sector represents 38.6%, Consulting/Design 27.1%, and Academia/Education 5.7%. The "Other" category accounts for the remaining 5.6%, covering various diverse professions.

Job Nature: The main nature of jobs was found to be site-oriented, representing 58.6% of the respondents, and office-oriented, representing 75.70% of the participants.

Distance from Home to Workplace: The data shows that 13% of respondents live very near to their workplace, 24% live near (within 30 minutes), 26% at a moderate distance (between 30 minutes to 1 hour drive), 6% far away (more than 1 hour drive), and 31% very far, necessitating long-distance travel or relocation.

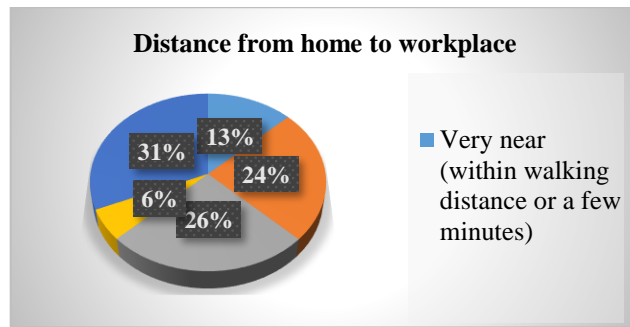


Figure 2: Distance from Home to Workplace

Designation of the Job: The frequency distribution of designation of job in the study population showed that 27.65% of the participants hold senior-level positions, while 42.55% are in supervisory roles. Additionally, 29.79% of the respondents are classified as being at the officer level.

Work Experiences: The frequency distribution of work experience showed that most respondents, 55%, have more than 5 years of experience in their current organization. Approximately 27% have 2 to 5 years of experience, 13% have 1 to 2 years of experience, and 5% are relatively new with less than 1 year of experience.

4.2 Degree of Job Satisfaction of Engineers with master’s degree in construction management

The opinions of the participants were evaluated using the Minnesota Satisfaction Questionnaire, consisting of a total of 19 questions concerning job satisfaction. Respondents were required to rate their satisfaction on a scale of 1 to 5, with 1 indicating high dissatisfaction, 2 for dissatisfaction, 3 for neutrality, 4 for satisfaction, and 5 for high satisfaction.

The mean scores for each variable were computed using a weighted average approach, determined by the formula:

$$\text{Mean score} = \frac{\sum \text{frequency} * \text{score}}{\sum \text{frequency}}$$

Likewise, the standard deviation for each variable was also calculated.

Table 3 presents the calculated mean scores and standard deviations for all respondents across different facets of job satisfaction.

Table 3: Job Satisfaction Table- Combined Score

S N	Factors	N	Min	Max	Mean	SD
1	Ability Utilization- The opportunity to do something that uses my skills	70	1	5	3.54	0.811
2	Achievement- The job makes me feel that I have achieved something	70	1	5	3.50	0.959
3	Activity- Being able to keep busy all the time	70	1	5	3.54	1.003
4	Advancement - The chances of getting promotion	70	1	5	3.23	1.024
5	Authority- Chance to take a lead and own decision	70	1	5	3.59	1.014
6	Organization's policies and practices- The existing administrative / bureaucratic policies and practices of the organization	70	1	5	3.06	0.915
7	Remuneration - My pay scale vs Job description	70	1	5	2.74	1.059
8	Relation with co-workers- Behavior of co-workers towards me	70	1	5	3.94	0.720
9	Creativity- The chance to try my own methods of doing the Job	70	1	5	3.39	0.982
10	Independence- The chance to work alone on the Job	70	1	5	3.20	0.910
11	Moral Values- Being able to do things that I don't feel guilty about	70	1	5	3.44	0.927
12	Recognition- The praise I get for doing Job	70	1	5	3.44	1.002
13	Responsibility- The freedom to use my own judgement	70	1	5	3.23	1.010
14	Security- The way my job provides for steady employment	70	1	5	3.27	1.166
15	Social Service- The chance to do things for other people	70	1	5	3.36	1.064
16	Social Status- The chance to be known in the community	70	1	5	3.50	1.073
17	Supervision by the Boss- the way my boss treats his or her employees	70	1	5	3.41	0.825
18	Variety- The Chance to do different things time and again	70	1	5	3.14	1.026
19	Working conditions- The working environment and conditions around you	70	1	5	3.37	0.966

Discussions:

Table 3 shows that the engineers with master's degree in construction management are highly satisfied with their job due to relation with co-workers with mean value of 3.94. This suggests that their colleagues' supportive behavior positively influences their work progress. The histogram of this highly satisfying job factor has been depicted in figure 3 below.

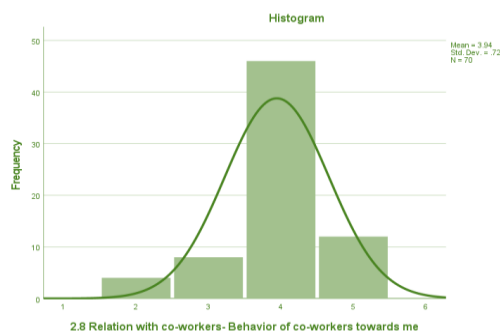


Figure 3: Histogram of Highly Satisfied Job Factor of Respondents

In contrast, engineers are highly dissatisfied with the 'Remuneration - My pay scale vs Job description' as their value is below the acceptable level i.e. 2.74. The histogram of highly dissatisfied job factors has been depicted in figure 4 below.

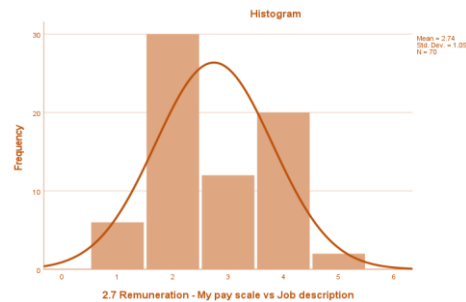


Figure 4: Histogram of Highly Dissatisfied Job Factor of Respondents

Besides most acceptable and most unacceptable job satisfaction factors, all other factors above the acceptable level and below acceptable level for engineers are presented here below:

Factors above acceptable level

- Relation with co-workers- Behavior of co-workers towards me
- Authority- Chance to take a lead and own decision
- Ability Utilization- The opportunity to do something that uses my skills
- Activity- Being able to keep busy all the time
- Achievement- The job makes me feel that I have achieved something
- Social Status- The chance to be known in the community

Factors Below acceptable level

- Remuneration - My pay scale vs Job description
- Organization's policies and practices- The existing administrative / bureaucratic policies and practices of the organization
- Variety- The Chance to do different things time and again
- Independence- The chance to work alone on the Job
- Advancement - The chances of getting promotion
- Responsibility- The freedom to use my own judgment
- Security- The way my job provides for steady employment
- Social Service- The chance to do things for other people
- Working conditions- The working environment and conditions around you
- Creativity- The chance to try my own methods of doing the Job
- Supervision by the Boss- the way my boss treats his or her employees
- Moral Values- Being able to do things that I don't feel guilty about
- Recognition- The praise I get for doing Job

The factors which are below the acceptable level show the dissatisfaction of engineers. Since the number of factors below the acceptable level are more than factors above acceptable level, it can be observed that the engineers are highly dissatisfied with their job.

4.3 Comparative Analysis between Job Satisfaction of Engineers

- The mean value and standard deviation for each job satisfaction factor individually given by the engineers with the master's degree in construction management hereof NEC, IOE and LIAST has been presented in table 4 below.

Table 4: Job Satisfaction Table – Individual score

S. N	Factors	NEC		IOE		LIAST	
		Mean	SD	Mean	SD	Mean	SD
1	Ability Utilization- The opportunity to do something that uses my skills	3.58	0.753	3.77	0.725	3.17	1.030
2	Achievement- The job makes me feel that I have achieved something	3.53	0.894	3.92	0.494	2.92	1.311
3	Activity- Being able to keep busy all the time	3.56	1.078	3.92	0.494	3.08	0.996
4	Advancement - The chances of getting promotion	3.13	0.991	3.85	0.899	2.92	1.084
5	Authority- Chance to take a lead and own decision	3.56	0.967	3.92	0.760	3.33	1.371
6	Organization's policies and practices- The existing administrative / bureaucratic policies and practices of the organization	2.87	0.919	3.38	0.650	3.42	0.996
7	Remuneration - My pay scale vs Job description	2.80	1.100	2.77	0.927	2.50	1.087
8	Relation with co-workers- Behavior of co-workers towards me	3.91	0.701	4.23	0.439	3.75	0.965
9	Creativity- The chance to try my own methods of doing the Job	3.36	0.981	3.62	0.650	3.25	1.288
10	Independence- The chance to work alone on the Job	3.09	0.874	3.54	0.776	3.25	1.138
11	Moral Values- Being able to do things that I don't feel guilty about	3.49	0.944	3.54	0.877	3.17	0.937
12	Recognition- The praise I get for doing Job	3.51	0.920	3.62	0.961	3.00	1.279
13	Responsibility- The freedom to use my own judgement	3.27	0.915	3.54	0.967	2.75	1.288
14	Security- The way my job provides for steady employment	3.29	1.199	3.54	0.877	2.92	1.311
15	Social Service- The chance to do things for other people	3.36	1.069	3.62	0.961	3.08	1.165
16	Social Status- The chance to be known in the community	3.40	1.053	3.85	0.987	3.50	1.243
17	Supervision by the Boss- the way my boss treats his or her employees	3.33	0.826	3.92	0.494	3.17	0.937
18	Variety- The Chance to do different things time and again	3.16	0.952	3.46	0.967	2.75	1.288
19	Working conditions- The working environment and conditions around you	3.31	0.925	3.62	1.121	3.33	0.985

Discussions:

Above table 4 shows that the highly acceptable factor/s for the engineers with master's degree in construction management from NEC, IOE and LIAST is Relation with co-workers- Behavior of co-workers towards me with the mean score of the 3.91, 4.23 and 3.75 respectively.

Similarly, a highly dissatisfied factor for the engineers from NEC, IOE and LIAST is Remuneration - My pay scale vs Job description with the mean score of 2.80, 2.77 and 2.50 respectively.

- II. The RII and corresponding ranks for each job satisfaction factor individually given by the Engineers with the master's degree in construction management of NEC, IOE and LIAST has been presented in table 5 below.

Table 5: Job Satisfaction Table - Individual score (RII and Rank)

S.N.	Factors	NEC		IOE		LIAST	
		RII	Rank	RII	Rank	RII	Rank
1.	Ability Utilization- The opportunity to do something that uses my skills	0.716	2	0.754	8	0.633	8
2.	Achievement- The job makes me feel that I have achieved something	0.707	5	0.785	2	0.583	14
3.	Activity- Being able to keep busy all the time	0.711	3	0.785	2	0.617	11
4.	Advancement - The chances of getting promotion	0.627	16	0.769	6	0.583	14
5.	Authority- Chance to take a lead and own decision	0.711	3	0.785	2	0.667	4
6.	Organization's policies and practices- The existing administrative / bureaucratic policies and practices of the organization	0.573	18	0.677	18	0.683	3
7.	Remuneration - My pay scale vs Job description	0.560	19	0.554	19	0.500	19
8.	Relation with co-workers- Behavior of co-workers towards me	0.782	1	0.846	1	0.750	1
9.	Creativity- The chance to try my own methods of doing the Job	0.671	9	0.723	9	0.650	6
10.	Independence- The chance to work alone on the Job	0.618	17	0.708	13	0.650	6
11.	Moral Values- Being able to do things that I don't feel guilty about	0.698	7	0.708	13	0.633	8
12.	Recognition- The praise I get for doing Job	0.702	6	0.723	9	0.600	13
13.	Responsibility- The freedom to use my own judgement	0.653	14	0.708	13	0.550	17
14.	Security- The way my job provides for steady employment	0.658	13	0.708	13	0.583	14
15.	Social Service- The chance to do things for other people	0.671	9	0.723	9	0.617	11
16.	Social Status- The chance to be known in the community	0.680	8	0.769	6	0.700	2
17.	Supervision by the Boss- the way my boss treats his or her employees	0.667	11	0.785	2	0.633	8

18.	Variety- The Chance to do different things time and again	0.631	15	0.692	17	0.550	17
19.	Working conditions- The working environment and conditions around you	0.662	12	0.723	9	0.667	4

Discussions:

The above table 5 shows that across all three colleges, the factor that received the highest rank in terms of importance was "Relation with co-workers," with an RII of 0.782, 0.846 and 0.750 securing the top rank. This suggests that employees highly value positive interactions and relationships with their colleagues in all three colleges.

On the other hand, "Remuneration - My pay scale vs. Job description" emerged as the least important factor, ranking lowest in all three colleges with an RII of 0.560, 0.554 and 0.500. This indicates that while pay is a consideration, it is not the primary driver of employee satisfaction. Figure 5 below displays the chart corresponding to the table 5.

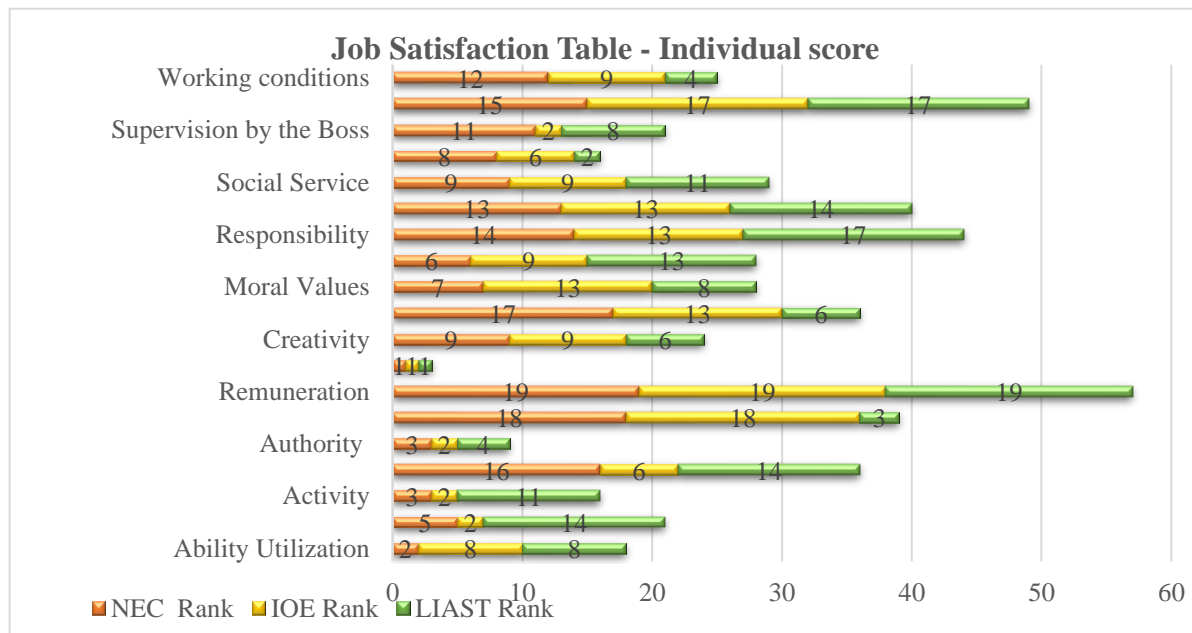


Figure 5: Job Satisfaction Table - Individual score (RII and Rank)

4.4 Hypothesis Testing for First Objective: Similarities and Differences between the Perspectives of Engineers with master’s degree in construction management

Between NEC and IOE

A hypothesis test was carried out to determine the similarities and differences between the perspectives of Engineers with master’s degree in construction management from NEC and IOE regarding the Minnesota Job Satisfaction Questions.

Null Hypothesis: H0: There is no significant difference between the ranks given by the Engineers of NEC and IOE with master’s degree in construction management in Minnesota Job Satisfaction Questions.

Alternative Hypothesis: H1: There is significant difference between the ranks given by the Engineers of NEC and IOE with master’s degree in construction management in Minnesota Job Satisfaction Questions.

Table 6: Hypothesis Testing (NEC and IOE)

Field	w	Chi-Square	P-value	Decision
Factors	0.404	14.53	0.69	Accept: Ho

Discussions:

Since the p-values (Sig.) is more than $\alpha = 0.05$, (α is the level of significance) the null hypothesis, H₀, is accepted and the alternative hypothesis, H₁, is rejected. Thus, it can be said that there is no significant difference between the ranks given by the Engineers of NEC and IOE with master's degree in construction management in Minnesota Job Satisfaction Questions. Therefore, the viewpoint of engineers towards the factors of Minnesota job satisfaction is not different.

Between IOE and LIAST

A hypothesis test was carried out to determine the similarities and differences between the perspectives of Engineers with master's degree in construction management from IOE and LIAST regarding the Minnesota Job Satisfaction Questions.

Null Hypothesis: H₀: There is no significant difference between the ranks given by the Engineers of IOE and LIAST with master's degree in construction management in Minnesota Job Satisfaction Questions.

Alternative Hypothesis: H₁: There is significant difference between the ranks given by the Engineers of IOE and LIAST with master's degree in construction management in Minnesota Job Satisfaction Questions.

Table 7: Hypothesis Testing (IOE and LIAST)

Field	w	Chi-Square	P-value	Decision
Factors	0.316	11.36	0.88	Accept: Ho

Discussions:

Since the p-values (Sig.) is more than $\alpha = 0.05$, (α is the level of significance) the null hypothesis, H₀, is accepted and the alternative hypothesis, H₁, is rejected. Thus, it can be said that there is no significant difference between the ranks given by the Engineers of IOE and LIAST with master's degree in construction management in Minnesota Job Satisfaction Questions. Therefore, the viewpoint of engineers towards the factors of Minnesota job satisfaction is not different.

Between LIAST and NEC

A hypothesis test was carried out to determine the similarities and differences between the perspectives of Engineers with master's degree in construction management from LIAST and NEC regarding the Minnesota Job Satisfaction Questions.

Null Hypothesis: H₀: There is no significant difference between the ranks given by the Engineers with master's degree in construction management from LIAST and NEC regarding the Minnesota Job Satisfaction Questions.

Alternative Hypothesis: H₁: There is significant difference between the ranks given by the Engineers with master's degree in construction management from LIAST and NEC regarding the Minnesota Job Satisfaction Questions.

Table 8 Hypothesis Testing (LIASST and NEC)

Field	w	Chi-Square	P-value	Decision
Factors	0.326	11.75	0.86	Accept: Ho

Discussions:

Since the p-values (Sig.) is more than $\alpha = 0.05$, (α is the level of significance) the null hypothesis, H0, is accepted and the alternative hypothesis, H1, is rejected. Thus, it can be said that there is no significant difference between the ranks given by the Engineers with master's degree in construction management from LIASST and NEC regarding the Minnesota Job Satisfaction Questions. Therefore, the viewpoint of engineers towards the factors of Minnesota job satisfaction is not different.

4.5 Level of Job Satisfaction

One single question was asked to the respondents to find out their satisfaction level through a question "Are you satisfied with your job?", the answers are tabulated here below in table 9.

Table 9: Job Satisfaction Table – Comparison

Are you satisfied with your job?	Graduates from NEC	Graduates from IOE	Graduates from LIASST
Highly Satisfied	2.2%	15.4%	-
Satisfied	48.9%	61.5%	58.3%
Neutral	33.3%	23.1%	8.3%
Dissatisfied	11.1%	-	25%
Highly Dissatisfied	4.4 %	-	8.3%

Discussions:

In terms of job satisfaction among engineers from three different, the above table shows that engineers from NEC have the highest percentage of individuals who are "Satisfied" with their jobs at 48.9%, followed by graduates from IOE at 61.5%, and LIASST at 58.3%. Engineers from NEC also have a relatively high percentage of those who are "Neutral" at 33.3%. Dissatisfaction is relatively lower among NEC graduates, with 11.1% "Dissatisfied" and 4.4% "Highly Dissatisfied."

Table 10: Level of Job Satisfaction

Variables	Combined		
	WM	SD	CoV
Job Satisfaction by Single Global Rating Method	3.41	0.909	0.27
Job Satisfaction by Summation Job Factors Method	3.36	0.971	0.29

Discussions:

The weighted mean values were ascertained to measure the Level of Job Satisfaction and its variables. Table 4.9 shows that on an average the Job Satisfaction score of Engineers with master's degree in construction management was 3.41 out of 5 with Standard Deviation of 0.909, Coefficient of Variance equals to 0.27. It indicates that on average engineers were satisfied, however the responses were varying by 27%. The job satisfaction was also measured by indirectly as Summation Job Factors Method (mean = 3.36) which indicates that the Level of Satisfaction was little lower than measured by Single Global Rating Method (mean = 3.41).

4.6 Comparison of Job Satisfaction of Engineers with master's degree in construction management with Past Relevant Studies in Nepal

Numerous studies have been conducted both nationally and internationally to explore the job satisfaction levels of engineers across various sectors. Table 4.21 shows comparative value about the percentage of engineers in different fields in Nepal who are satisfied with their work.

Table 10: Job Satisfaction of Engineers in Previous Studies

S.N.	Research Topic	Author	Percentage of Satisfied Engineers
1	Civil Engineers Working in Irrigation Sector under Government of Nepal	(Paudel, 2019)	69%
2	The Level of Job Satisfaction among Civil Engineers Working in Hydropower Sector in Consulting Firms of Nepal	(Thapa, 2016)	67.96%
3	Employee Job Satisfaction in Engineering and Architectural Consulting Firms	(Sharma, 2002)	50.67%
4	Study on Job Satisfaction and Motivational Level of Civil Engineers working in DRILP-AF Project	(Basnet, 2015)	73.26%
5	The Comparative Study of Job Satisfaction among Civil Engineers Working in Building Sector in Construction Firms of Nepal	(Bhatta, 2018)	47.7%
6	Assessment of Job Satisfaction Local Level Technical Personnel Working at Local Levels of Surkhet District	(Rawat, 2023)	29.67%
7	Job Satisfaction of Civil Engineers Working in Local Level Government in Bagmati Province, Nepal	(Upadhaya, 2023)	26%
8	A Study on Job Satisfaction among Engineers with a master's degree in construction management in Kathmandu Valley	This study	57.2%

Discussion:

Comparing the percentages, it's evident that the job satisfaction level among engineers working in the DRILP-AF Project (73.26%) is the highest, while the Civil Engineers Working in Local Level Government in Bagmati Province (26%) have the lowest job satisfaction.

The Job Satisfaction among Engineers with master's degree in construction management in Kathmandu Valley (57.2%) falls somewhere in the middle, indicating a moderate level of job satisfaction compared to the other studies.

5. Conclusion and Recommendations

5.1 Demographic Analysis of the respondents

The gender distribution of the respondents 81% of them were male and remaining 19% were female. About 27% of them fall in the age range of 26 to 30, while 39% are between 31 and 35 years old, around 14%, falls within the 36-40 age category. Lastly, about 20% of the participants are above the age of 40.

Most respondents, about 98% were master's degree holder and only 2% each were Ph.D. degree holder. 64% of the respondents completed their master's degree from NEC, Pokhara University, 19% from IOE, Tribhuvan University, and 17% from LIAST, Lumbini Buddhist University.

Construction Sector employs the largest group, at 74.20%. Government sector represents 38.6%, Consulting/Design 27.1%, and Academia/Education 5.7%. The "Other" category accounts for the remaining 5.6%, covering various diverse professions.

The main nature of jobs can be categorized as site-oriented, accounting for 58.6% of the respondents, and office-oriented, representing 78.2% of the participants.

27.65% of the respondents hold senior-level positions, while 42.55% are in supervisory roles. Additionally, 29.79% of the respondents are classified as being at the officer level.

5.2 Degree of Job Satisfaction of Engineers with master's degree in construction management

The highly acceptable factor/s for the engineers with master's degree in construction management from NEC, IOE and LIAST is Relation with co-workers- Behavior of co-workers towards me with the mean score of the 3.91, 4.23 and 3.75 respectively.

Similarly, a highly dissatisfied factor for the graduated engineers from NEC, IOE and LIAST is Remuneration - My pay scale vs Job description with the mean score of 2.80, 2.77 and 2.50 respectively.

On an average the Job Satisfaction score of Engineers with master's degree in construction management was 3.41 out of 5 with Standard Deviation of 0.909, Coefficient of Variance equals to 0.27. It indicates that on average engineers were satisfied, however the responses were varying by 27%. The job satisfaction was also measured by *indirectly as Summation Job Factors Method (mean = 3.36) which indicates that the Level of Satisfaction was little lower than measured by Single Global Rating Method (mean = 3.41).*

5.3 Recommendation from study

Based on the research on Job Satisfaction among Engineers with a master's degree in construction management in Kathmandu Valley, study stresses the following recommendations:

- College and University offering M.Sc. Construction Management course needs to establish programmes and take initiatives towards Professional Development Opportunities to enhance their skills and keep them updated on industry trends.
- College and University offering M.Sc. Construction Management needs to design clear and achievable career advancement paths within Construction Management by creating mentorship programs, providing guidance on career progression, and offering opportunities for leadership roles.
- College and University offering M.Sc. Construction Management also have a role to prepare and implement the policies on Work-Life Balance Initiatives.
- Establishing effective communication channels between management and engineers. Communication and Feedback Channels:
- Initiation in the development of a system which consistently provide the recognition and rewarding process
- Conducting periodic surveys to gather feedback from graduated engineers regarding their job satisfaction. Use the insights gained to continually improve policies and practices to better meet the needs and expectations of employees.

5.4 Recommendation for further study

This study has explored and analyzed the level of satisfaction and dissatisfaction of engineers with master's degree in construction management in Kathmandu Valley on a limited scale. There are a lot of fields for further study and research.

- A study can be done on Job Satisfaction among Engineers with master's degrees from various engineering disciplines.

- The study can extend beyond Kathmandu valley to other regions in Nepal or even neighboring countries.
- A comparative study can be conducted between Engineers with dual master's degrees can also be performed.

Conflict of interest

No conflict of interest.

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