



# Factors Affecting Job Satisfaction of Civil Engineers Working in Private Organizations in Kathmandu Valley

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**ABSTRACT**– The satisfaction of employees in their jobs holds a substantial influence on the overall success and effectiveness of an organization. This study is focused on evaluating the factors that directly affect the job satisfaction of civil engineers employed in private organizations in Kathmandu Valley. To gather primary data, structured questionnaires were distributed utilizing the summation job factors method. 120 questionnaires were collected and subsequently employed for detailed data analysis using SPSS 25. To ensure the reliability of the collected data, the internal consistency of the construct variables was assessed using Cronbach's alpha. All computed alpha values for the constructs surpassed the threshold of 0.8, indicating a high level of consistency. Data were analyzed using mean, standard deviation, frequency, percentage, and multiple linear regression. The findings revealed a high level of job satisfaction with a mean score of 3.4. Specifically, factors such as the role of supervisors, payment/salary, working conditions, empowerment and leadership, and relationships with co-workers played significant roles in influencing job satisfaction. However, the job itself and promotion opportunities were not identified as significant factors. The coefficient of determination ( $R^2$ ) was calculated to be 0.872, signifying that these independent variables collectively explain a substantial 87.2% of the variation in job satisfaction among civil engineers working in private organizations in Kathmandu Valley. In light of these findings, private organizations and relevant authorities must prioritize enhancing the core responsibilities tied directly to the job, as well as providing ample opportunities for career advancement.

**KEYWORDS**–*Civil Engineers, Job Satisfaction, Kathmandu Valley, Multiple Linear Regression, Private Organization*

## 1. INTRODUCTION

Job satisfaction, defined by Robbins, Coulter, and Vohra (2013), is an employee's overall attitude towards their job. This crucial aspect of one's professional life significantly impacts both individual well-being and organizational productivity, as highlighted by (Judge et al., 2001). Satisfied employees exhibit positive attributes, while job dissatisfaction can lead to consequences like increased absenteeism and turnover. Enhancing job satisfaction is paramount for organizations, directly influencing their

overall performance. Strategies to bolster job satisfaction may include employee surveys, performance management systems, training and development opportunities, a positive work environment, and attentiveness to employee feedback, as suggested by (Inayat and Jahanzeb Khan, 2021).

Kathmandu Valley is currently experiencing a major phase of infrastructure expansion, poised to drive overall economic progress. This surge in development has created numerous job opportunities for civil engineers. However, concerning reports indicate a deficiency in the quality and



sustainability of the constructed infrastructure. Simultaneously, the Nepal government has allocated a substantial portion, approximately 60 percent, of its budget towards development endeavours, with over seventy percent of this allocation directed toward infrastructure projects. To meet the government's objectives, civil engineers must be equipped with a heightened level of satisfaction to effectively execute these projects (Paudel et al., 2020). Civil Engineers are often referred to as the cornerstone of infrastructure development. They play a vital role in every phase of a project, from planning and designing to execution. Engineers analyse construction costs, considering government regulations and potential environmental risks. They also conduct experiments to determine the foundation requirements for a project. Civil engineers can be employed by government agencies at different levels or work in the private sector for consulting or construction companies (Paudel et al., 2020).

During their job, civil engineers face diverse challenges, including varying work environments, terrains, and cultural contexts. These demands often come with tight deadlines and a heavy workload. Issues such as uneven task assignments, subpar working conditions, ineffective leadership, and unfriendly management approaches have contributed to dissatisfaction among civil engineers (Rankings, 2019).

After completing their studies, Nepali civil engineers often prefer working for the government over private companies. This is because the government offers more projects, like roads and buildings. They also provide job security, benefits, and a pension plan, which may not be available in private companies (Chapagain, 2021). Additionally, in Nepali society, working for the

government is seen as a prestigious and respected job. However, private companies should aim to create better working conditions to attract skilled engineers and increase productivity. Factors like job security, compensation, the work environment, and opportunities for career growth are crucial for civil engineers to be satisfied with their jobs. A good quality of work life is also important because how you feel at work can affect your personal life. So, by improving the workplace, organizations can be more effective, make their employees happier and more motivated, and achieve better results, ultimately leading to more success and profitability (D'MelloMonteiro and Pinto, 2018).

Various studies have been conducted worldwide, and in Nepal, regarding job satisfaction. Studies on job satisfaction among civil engineers in the construction sector of Nepal have been conducted (Dodanwala and Shrestha, 2021). Job satisfaction of civil engineers working in the hydropower sector in consulting firms has also been studied (Thapa and Shrestha, 2018). However, there has been no study regarding the job satisfaction of civil engineers working in private companies in Kathmandu Valley. The existing knowledge on job satisfaction among civil engineers in private organizations in Nepal is notably limited. Previous studies have predominantly focused on either the public or private sector, often within specific engineering domains like construction, hydropower, and government projects.

Private organizations in Kathmandu Valley have been largely overlooked in terms of research development, despite their pivotal role in the nation's economy and infrastructure. This study specifically targets civil engineers employed in private



organizations within Kathmandu Valley. Its primary objective is to assess their level of job satisfaction and investigate the various influencing factors. By utilizing the multiple linear regression approaches, can effectively analyse the intricate relationship between variables such as the role of supervisors, payment/salary, working conditions, relationships with co-workers, empowerment, professional development opportunities, and interpersonal relationships (Hair et al., 2019). This statistical technique enables us to discern the relative impact of each of these factors on the job satisfaction of civil engineers in private organizations. This research is crucial for filling the existing gap in understanding the factors affecting job satisfaction in this specific context.

## **2. MATERIALS AND METHODS**

### **2.1 Study Area**

The study was conducted in Kathmandu Valley, which includes the districts of Kathmandu, Bhaktapur, and Lalitpur.

### **2.2 Study Population, Sample Size, and Sampling Technique**

This study was focused on civil engineers employed in private organizations within Kathmandu Valley. Since the precise count of civil engineers working in private organizations within Kathmandu Valley was not available. As a result, 120 civil engineers were purposively selected for interviews to gather data for the study.

### **2.3 Questionnaire Design**

The primary tool employed for this study was a specifically designed questionnaire aimed at gathering essential data to fulfil analysis requirements and meet objective of the study. The questionnaire encompassed two sections. The initial section collected demographic and professional details from respondents, including age, gender, marital

status, job experience, job location, organizational affiliation, and academic qualifications. The second section, based on the Summation Job Factors Method (hereafter, SJFM), drew from a comprehensive framework for assessing job satisfaction as detailed by (Abdulla, 2009). This segment evaluated seven key factors related to job satisfaction: the job itself, payment/salary, promotion opportunities, role of supervisor, working conditions, and empowerment and leadership. Each factor comprised six sub-questions, and respondents used a Likert 5-point scale to rate their satisfaction level (1 indicating high dissatisfaction and 5 indicating high satisfaction).

### **2.4 Reliability of Research Instrument**

The questionnaire's reliability in measuring job satisfaction via SJFM was assessed using Cronbach's alpha, a metric indicating internal consistency. This statistic gauges how well a set of items in a questionnaire or test aligns with a common underlying construct. Generally, a Cronbach's alpha coefficient exceeding 0.7 is deemed acceptable values surpassing 0.8 are considered good, and those above 0.9 are deemed excellent indicators of internal consistency (Tavakol and Dennick, 2011). All the obtained alpha values for the assessed constructs demonstrated either a good or excellent level of internal consistency (Table 1).

### **2.5 Data Analysis**

Initially, the primary data was inputted into MS Excel, and subsequently, it was converted into SPSS version 25 format to facilitate in-depth analysis. A combination of descriptive and inferential statistics was

**Table 1. Reliability of instrument**

S. N.	Job-Related Variables	Cronbach's Alpha	No. of Items	Internal Consistency
1	Job Itself	0.843	6	Good
2	Payment/Salary	0.886	6	Good
3	Promotion Opportunities	0.816	6	Good
4	Role of Supervisor	0.870	6	Good
5	Working Condition	0.832	6	Good
6	Role of Co-Worker	0.922	6	Excellent
7	Empowerment and Leadership	0.856	6	Good
8	Job Satisfaction	0.883	6	Good

employed. Initially, the primary data was inputted into MS Excel, and subsequently, it was converted into SPSS version 25 format to facilitate in-depth analysis. A combination of descriptive and inferential statistics was employed to comprehensively examine the data. The demographic and professional experience details of the respondents, along with their job satisfaction scores, were summarized using descriptive statistical measures such as mean, standard deviation, frequency, and percentage. Similarly, the study utilized multiple linear regression, an inferential statistical method, to identify and understand the key factors affecting job satisfaction. This technique allowed for a more in-depth analysis of the relationships between various variables and their impact on job satisfaction.

### 3. RESULTS AND DISCUSSIONS

#### 3.1 Demographic and Professional Experience of Respondents

**Table 2. Demographic and professional experience of respondents**

Variables	Categories	Frequency	Percentage
Working organization	Consulting Firms	70	58.3
	Construction Company	50	41.7
Gender	Male	92	76.7
	Female	28	23.3
Age Group	< 25 years	33	27.5
	25 to 35 years	68	56.7
	36 to 50 years	12	10.0
	>50 years	7	5.8
Marital Status	Married	60	50.0
	Unmarried	60	50.0
Academic Qualification	Bachelor's Degree	71	59.2
	Masters' Degree	49	40.8
Years of Experience in Current Organization	<1 year	42	35.0
	1 to 4 years	40	33.3
	5 to 10 years	30	25.0
	>10 years	8	6.7
Total Years of Experience	<1 year	24	20.0
	1 to 4 years	34	28.3
	4 to 10 years	42	35.0
	>10 years	20	16.7
Job Location	Office Based	56	43.7
	Site Based	14	11.7



	Both Office and Site Based	50	41.7
Total		120	100.0

Table 2 provides a comprehensive overview of the demographic and professional characteristics of the 120 respondents participating in the study. In terms of employment, a notable majority of participants were affiliated with consulting firms (58.3%), while the remainder were associated with construction companies (41.7%). Regarding gender distribution, a higher percentage of male respondents (76.7%) was observed in comparison to female participants (23.3%). The age groups of respondents were well-represented, with the majority falling within 25 to 35 years (56.7%), followed by those under 25 years (27.5%). A smaller proportion of individuals were between 36 to 50 years old (10.0%), and only 5.8% were over 50 years old. Marital status was evenly divided between married and unmarried, with each accounting for 50% of the sample. Education-wise, a significant number of participants held Bachelor's degrees (59.2%), while the remaining 40.8% possessed Master's degrees. In terms of professional experience within their current organization, the largest group had 1 year or less of experience (35.0%), followed closely by those with 1 to 4 years (33.3%). Participants with 5 to 10 years of experience accounted for 25.0%, and individuals with over 10 years of experience constituted the smallest group (6.7%). When considering total years of experience, the distribution was fairly even across the categories, with 20.0% having less than 1 year, 28.3% with 1 to 4 years, 35.0% with 4 to 10 years, and 16.7% with over 10 years of experience. Finally, in terms of job location, the majority of respondents indicated an office-based work

setting (43.7%), while a smaller proportion were either site-based (11.7%) or reported working in both office and site-based settings (41.7%).

**Table 3. Frequency distribution of job satisfaction of job-related variables (%)**

S.N.	Job-Related Variable	Job Satisfaction				
		Highly Dissatisfied	Dissatisfied	Neutral	Satisfied	Highly Satisfied
1	Job itself	0.8	9.3	31.7	48.3	10.0
2	Payment/Salary	12.5	21.7	37.5	22.5	7.0
3	Promotion Opportunities	1.7	20.0	43.3	31.7	3.3
4	Role of Supervisor	0.8	7.5	19.2	58.3	14.2
5	Working condition	0.8	12.5	40.8	37.5	8.3
6	Role of Co-Workers	0.8	3.3	17.5	63.3	15.0
7	Empowerment and Leadership	0.8	15.8	40.0	35.8	7.5

The data in Table 3 presents a comprehensive view of job-related variables and their corresponding satisfaction levels among the 120 respondents. Notably, the majority of participants expressed a high level of satisfaction with their current job, with a significant 48.3% reporting being highly satisfied, while an additional 31.7% fell into the 'neutral' category. This indicates an overall contentment with the nature of their work. In contrast, payment and salary emerged as an area with more mixed





sentiments. Specifically, 37.5% of respondents held a neutral stance, while 22.5% reported satisfaction and a notable 12.5% expressed dissatisfaction. Promotion opportunities also garnered diverse responses, with 43.3% remaining neutral, 31.7% being satisfied, and 20.0% expressing dissatisfaction. The role of supervisors received predominantly positive feedback, with 58.3% reporting satisfaction and an additional 14.2% indicating a high level of satisfaction. This suggests effective supervision and positive working relationships. Similarly, the role of co-workers was well-received, with 63.3% expressing satisfaction and an additional 15.0% reporting a high level of satisfaction. The conditions of the workplace were generally viewed favorably, as 37.5% reported satisfaction and 40.8% remained in the 'neutral' category. Lastly, empowerment and leadership within the organizations received favorable ratings, with 35.8% expressing satisfaction and 7.5% reporting a high level of satisfaction. Overall, the data indicates that respondents are generally content with their current job roles, with areas like supervisor relationships and co-worker dynamics receiving particularly positive feedback.

### 3.2 Measure of Level of Job Satisfaction

**Table 4. Measure of level of Job satisfaction and its variables**

Variable	Mean	Standard Deviation (SD)
Job Itself	3.5	0.7
Promotion Opportunities	3.1	0.7
Role of Supervisor	3.7	0.7
Payment /Salary	2.8	0.9
Working condition	3.3	0.7
Role of Co-Workers	3.8	0.6

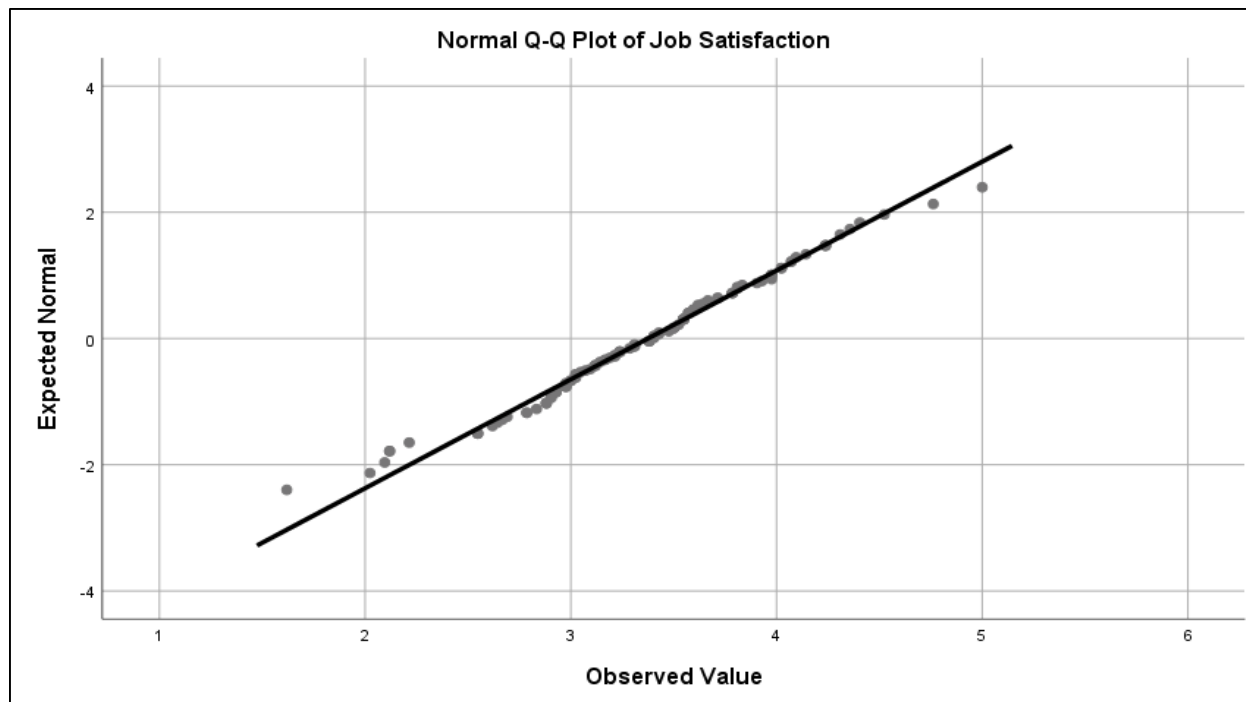
Empowerment and Leadership	3.3	0.7
Job Satisfaction	3.4	0.6

Table 4 provides a comprehensive overview of the job satisfaction levels among civil engineers in private organizations working in Kathmandu Valley. On average, respondents reported a high level of job satisfaction (Mean= 3.4, SD= 0.6). Specifically, they expressed satisfaction with their specific job roles (Mean = 3.5, SD = 0.7), the role of their supervisors (Mean = 3.7, SD = 0.7), and their relationships with co-workers (Mean = 3.8, SD = 0.6). Additionally, respondents viewed the working conditions (Mean = 3.3, SD = 0.7) and empowerment and leadership (Mean = 3.3, SD = 0.7) aspects with positivity. However, factors related to promotion opportunities (Mean = 3.1, SD = 0.7) and payment/salary (Mean = 2.8, SD = 0.9) received comparatively lower satisfaction scores. In summary, this data suggests that civil engineers in private organizations generally experience high job satisfaction.

### 3.3. Multiple Linear Regression Technique to Explain Job Satisfaction

A multiple regression analysis was conducted to assess the influence of various job-related factors on job satisfaction. The dependent variable was job satisfaction, while the job-related variables included the nature of work, pay/salary, promotions, workgroup, supervision, working conditions, and professional development. The analysis aimed to determine the significance and direction of the relationships between these factors and job satisfaction. The results would provide insights into which factors play a significant role in influencing job satisfaction. Before executing the multiple linear regression analysis, a series of crucial assumptions and checks were conducted. These encompassed tests for normality,

collinearity, autocorrelation, and the significance of the regression model.



**Figure 1. Q-Q Plot of Job Satisfaction**

### 3.3.1 Normality Test

Job satisfaction was assessed using a 5-item Likert scale, incorporating six distinct items. From these assessments, the mean job satisfaction score was derived and subsequently employed as the dependent

**Table 5: Tests of Normality**

Variable	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Job satisfaction	0.064	120	0.200	0.991	120	0.622

variable in the regression analysis. Subsequently, a normality test was conducted on this dependent variable, job satisfaction. To achieve this, both a Q-Q plot and a Kolmogorov-Smirnov (K-S) test were performed for validation.

#### 3.3.1.1 Q-Q Plot

Firstly, a Q-Q plot was used to visually examine the distribution of job satisfaction. Points on the Normal Q-Q plot indicate the univariate normality of the dataset. All the data points fall on the 45-degree reference which indicates that job satisfaction scores closely follow a normal distribution (Das and Imon, 2016) as shown in Figure 1.

#### 3.3.1.2 Kolmogorov Smirnov Test

To test the normality of the dependent variable (job satisfaction) was performed using Kolmogorov-Smirnov test.



Table 5 showcases the results of the K-S test used to evaluate the normality of the dataset concerning job satisfaction (Lilliefors, 1967). The test yielded a statistic of 0.064 with 120 degrees of freedom, resulting in a significance level (p-value) of 0.200. With a p-value exceeding the conventional threshold of 0.05, there is insufficient evidence to reject the null hypothesis (Tsui and Weerahandi, 1989). This implies that the data does not significantly deviate from a normal distribution according to the K-S test. Therefore, based on this analysis, it can be reasonably concluded that the assumption of normality for the variable "Job satisfaction" is supported.

### 3.3.2 Testing of Autocorrelations of the Independent Variable

Once the normality of the dependent variable was verified, further examinations were carried out to evaluate autocorrelation and multicollinearity among the independent variables before executing the regression analysis. This is generally considered desirable in regression analysis because it indicates that the residuals are independent and do not exhibit a systematic pattern. The Durbin-Watson statistic will always have a value ranging between 0 and 4. A value of 2.0 indicates there is no autocorrelation detected in the sample. Values from 0 to less than 2 point to positive autocorrelation and values from 2 to 4 mean negative autocorrelation (SitorusNjotoprajitno and Hadianto, 2023). The Durbin-Watson statistic value is found to be 2.010; it suggests no autocorrelation in the residuals (Table 6).

### 3.3.3 Testing of Collinearity

Model Summary					
Model	R	R Square	Adjusted R Square	Standard error estimate	Durbin-Watson
1	0.934	0.872	0.864	0.28733	2.01

The Collinearity Test was done and the variance inflation factor (VIF) index was observed from the regression model. VIF measures the strength of the correlation between the independent variables in regression analysis. This correlation is known as multicollinearity, which can cause

**Table 6: Model summary of the regression analysis**

Model	Collinearity Statistics	
	Tolerance	VIF
Job Itself	0.320	3.126
Payment / Salary	0.312	3.206
Promotion Opportunities	0.305	3.276
Role of Supervisor	0.392	2.554
Working condition	0.401	2.491
Role of Co-Workers	0.512	1.953
Empowerment and Leadership	0.313	3.196

problems for regression models. In general, a VIF above 10 indicates a high correlation and is cause for concern (Salmerón-GómezRodríguez-Sánchez and García-García, 2020). The value of VIF is found to be less than 10. As a result, it was concluded that there were no significant multiple relationships among the independent variables (Table 7).





### 3.3.4 Regression Model

The regression analysis employed the "enter" method to investigate the relationship between Job Satisfaction and independent variables, namely Empowerment and Leadership, Payment/Salary, Role of Co-Workers, Working Conditions, Job Itself, Promotion Opportunities, and Role of Supervisor.

### 3.4.5 Test of Significance of Regression Model

**Table 8. Test of Significance of Regression Model**

ANOVA					
Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	62.753	7	8.965	108.583	.000
Residual	9.247	112	0.083		
Total	72.000	119			

The ANOVA test of significance, as presented in Table 8, assesses the overall significance of the regression model. The table is divided into three key components: the regression model, the residual (error), and the total. In this context, the critical value is the F-statistic, which is a measure of the ratio of the mean squares of the regression to the mean squares of the residuals. Here, the F-statistic is 108.583, and the associated p-value (Sig.) is extremely low at .000, indicating that the regression model is highly statistically significant (HayesGlynn and Huge, 2012). This suggests that the independent variables in the model

collectively have a substantial influence on explaining the variability in the dependent variable. In summary, based on the ANOVA test, the regression model is considered statistically significant, and it is appropriate for further analysis.

### 3.3.6 Coefficient of Determination (R<sup>2</sup>)

The model summary in Table 6 provides important insights into the regression analysis. The coefficient of determination, denoted R<sup>2</sup>, is a measure of how well the independent variables explain the variability in the dependent variable (Nagelkerke, 1991). Here, R<sup>2</sup> is 0.872, signifying that approximately 87.2% of the variability in job satisfaction is accounted for by the independent variables namely empowerment and leadership, payment/salary, the rate of co-workers, working conditions, the job itself, promotion opportunities, and the role of supervisor in the model. The adjusted R<sup>2</sup> considers the number of predictors and any potential overfitting. In this case, the adjusted R<sup>2</sup> is 0.864, which is very close to the R<sup>2</sup> value. This indicates that the inclusion of independent variables in the model has led to a modest improvement in explaining the variability. The standard error estimate provides an estimate of the variability of the dependent variable around the regression line. In this instance, it is approximately 0.28733.

### 3.3.7 Multiple Linear Regression Equation and Interpretation

By using the values of coefficients (β) from Table 9, the estimated multiple linear regression equation is as follows;

$$\text{Job Satisfaction} = -0.636 + 0.224 \times \text{Role of Supervisor} + 0.265 \times \text{Payment/Salary} + 0.189 \times \text{Working Conditions} + 0.170 \times \text{Role of Co-worker} + 0.159 \times \text{Empowerment and Leadership}$$



**Table 9. Multiple linear regression results**

Dependent Variable: Job Satisfaction

Model		Coefficients				95% Confidence Interval for $\beta$	
		Unstandardized Coefficients		T	Sig.	Lower Bound	Upper Bound
		$\beta$	Std. Error				
1	Constant	-0.636	0.183	-3.474	0.001	-0.9982	-0.2731
	Job Itself	0.127	0.069	1.849	0.067	0.009	0.263
	Promotion Opportunities	0.097	0.070	1.390	0.167	0.041	0.235
	Role of Supervisor	0.224	0.073	3.066	0.003	0.079	0.369
	Payment /Salary	0.265	0.048	5.483	0.000	0.169	0.360
	Working condition	0.189	0.058	3.255	0.002	0.074	0.305
	Role of Co-Workers	0.170	0.061	2.812	0.006	0.050	0.290
	Empowerment and Leadership	0.159	0.065	2.424	0.017	0.029	0.288

Summary of the Table 9 is as follows; the constant coefficient ( $\beta = -0.636$ ) suggests the anticipated level of job satisfaction among civil engineers in private organizations within Kathmandu Valley when all other independent variables in the model are zero. The 95% Confidence Interval for the constant, spanning from -0.9982 to -0.2731, highlights the range of this expected satisfaction level. Moreover, the p-value of 0.001 indicates that this constant significantly impacts job satisfaction, emphasizing its statistical significance and influence within the model. The coefficient ( $\beta = 0.127$ ) of “Job Itself” implies that higher satisfaction or perceived quality with the job itself corresponds to an increase of 0.127 units in job satisfaction among civil engineers in private organizations within Kathmandu Valley. However, the associated t-value of 1.849 and the p-value of 0.067 suggest that this relationship lacks statistical significance at the conventional alpha level of 0.05. This indicates that while there's a potential positive impact of the job itself on job satisfaction, the evidence for this association isn't sufficiently robust in this particular context to be deemed statistically significant. This finding is aligned with the findings of (Paudel et al., 2020). The positive coefficient ( $\beta = 0.097$ ) of “Promotion Opportunities” suggests a potential influence of promotion opportunities on job satisfaction among civil engineers in private organizations within Kathmandu Valley. However, the lack of statistical significance (t-value = 1.390, p = 0.167) indicates that this relationship, while seemingly positive, doesn't hold up under conventional statistical scrutiny (p-value>0.05). It's essential to consider that job satisfaction is a complex



construct influenced by multiple factors beyond just promotional prospects, such as the quality of the job itself, working conditions, leadership, and salary (Paudel et al., 2020; Thapa & Shrestha, 2018). This lack of significance might indicate that, within this specific context, promotion opportunities might not be a significant factor in determining job satisfaction among civil engineers in private organizations in Kathmandu Valley.

The coefficient ( $\beta = 0.224$ ) for the "Role of Supervisor" implies that improvements or a positive impact in the supervisory role correspond to an increase of 0.224 units in job satisfaction among civil engineers in private organizations within Kathmandu Valley. The associated t-value of 3.066 and the p-value of 0.003 suggest a statistically significant relationship. This signifies that the role of supervisors significantly influences job satisfaction within this context. A supportive and effective supervisory role, which involves guidance, support, and constructive feedback, is crucial in enhancing job satisfaction among employees (JooLim and Kim, 2016). Supervisors who provide clear direction, encourage professional growth, and foster a positive work environment are likely to positively impact job satisfaction among their subordinates (Robbins and Judge, 2017). This alignment with established organizational psychology literature underscores the significance of effective leadership and supervisory roles in influencing job satisfaction among civil engineers.

The coefficient ( $\beta = 0.265$ ,  $p < 0.001$ ) of "Payment/Salary" suggests that for each unit increase in payment/salary, job satisfaction tends to increase by 0.265 units. This is significant, implying that higher payment or

salary positively affects job satisfaction among civil engineers. These results align with (Paudel et al., 2020), which similarly demonstrated that payment/salary significantly and positively influences job satisfaction among civil engineers. This finding aligns with broader perspectives on job satisfaction, highlighting the significance of financial rewards in influencing overall contentment in the workplace (Adams and Freedman, 1976). For civil engineers, competitive compensation not only serves as a means of financial stability but also signifies recognition and value for their expertise and contributions. A higher payment or salary could potentially alleviate financial concerns, increase motivation, and foster a sense of appreciation, contributing significantly to job satisfaction (Maidani, 1991). In the context of Kathmandu Valley's private organizations, where skilled professionals seek recognition and fair compensation for their specialized skills and efforts, this result emphasizes the need for employers to consider competitive pay structures as a crucial component in enhancing job satisfaction.

The coefficient ( $\beta = 0.189$ ) of "Working Condition" indicates that improvements or positive changes in the working conditions correlate with an increase of 0.189 units in job satisfaction among civil engineers in private organizations within Kathmandu Valley. The associated t-value of 3.255 and the p-value of 0.002 suggest a statistically significant relationship. This emphasizes the crucial impact of work conditions on job satisfaction, echoing established findings (Paudel et al., 2020; Thapa and Shrestha, 2018) and supporting recognized principles in organizational psychology (Locke and Latham, 1990; Hackman and Oldham, 1976). These shared conclusions underscore the



universal acknowledgment of working conditions' pivotal role in shaping job satisfaction, particularly in this context among civil engineers in private organizations within Kathmandu Valley.

The impact of "Role of Co-worker" on job satisfaction among civil engineers in private organizations within Kathmandu Valley is substantiated by the coefficient ( $\beta = 0.170$ ) and its statistical significance ( $t = 2.812, p = 0.006$ ). This finding resonates with studies by SageerRafat and Agarwal (2012), which emphasize the significance of social interactions and team dynamics in fostering job satisfaction. Positive relationships and effective teamwork among colleagues have been consistently linked to higher job satisfaction (Robbins and Judge, 2017), as they create a supportive and harmonious work environment. The alignment of these findings supports the understanding that the quality of relationships among co-workers plays a pivotal role in shaping job satisfaction among civil engineers, emphasizing the importance of fostering collaborative and positive team dynamics in organizational settings.

The coefficient ( $\beta = 0.159$ ) for "Empowerment and Leadership" suggests that a positive influence or enhancement in empowerment and leadership correlates with a 0.159 unit increase in job satisfaction among civil engineers in private organizations within Kathmandu Valley. The associated t-value of 2.424 and the p-value of 0.017 indicate a statistically significant relationship. This implies that empowerment initiatives and effective leadership styles significantly impact job satisfaction. Empowerment practices that involve delegating authority, involving employees in decision-making, and fostering a sense of autonomy are known to positively influence

job satisfaction (Spreitzer, 1996). Additionally, effective leadership styles emphasizing mentorship, support, and encouragement have been found to contribute positively to job satisfaction among employees (Boamah et al., 2018). This finding aligns with established literature, highlighting the crucial role of empowerment strategies and effective leadership in bolstering job satisfaction among civil engineers working in private organizations in Kathmandu Valley.

### 3.3.8 Detection of the Proposed Regression Model Violations

The effectiveness of statistical procedures, such as regression analysis, relies on meeting specific underlying assumptions. Failing to meet these assumptions can jeopardize the model's validity and the resulting conclusions. Thus, it is crucial to rigorously assess these assumptions before making any statistically significant inferences from the developed model. To validate these assumptions, the Breusch-Pagan test was conducted (Neter Wasserman and Kutner, 1983). The Breusch-Pagan test was employed to assess the presence of heteroscedasticity in the regression model. This test examines whether the variance of the error terms remains stable across various levels of the independent variables.

**Table 10: Breusch-Pagan Test for Heteroscedasticity**

ANOVA						
Model	Sum of Squares	Df	Mean Square	F	Sig.	
1	Regression	0.043	7	0.06	1.045	.404





Residual	0.660	11	2	0.00		
Total	0.703	11	9			

According to the results presented in Table 10, the p-value linked to the F-statistic is 0.404, surpassing the standard significance level of 0.05. Since the p-value exceeds 0.05, there is no sufficient evidence to reject the null hypothesis. This implies that there is no compelling indication of heteroscedasticity within the regression model. In essence, the assumption of consistent error variances across different levels of the independent variables holds.

#### 4. CONCLUSION

This study focused on the factors affecting job satisfaction among civil engineers in private organizations in Kathmandu Valley. Through a questionnaire-based approach, the findings unveiled a high level of job satisfaction. Key factors emerged notably the role of supervisor, payment/salary, working conditions, role of co-worker, and empowerment/leadership. However, the job itself and promotion opportunities held lower statistical significance. These factors collectively explain 87.2% of job satisfaction variation. Given these results, it is crucial for private companies and relevant authorities to give top priority to improving fundamental job-related tasks and offering abundant avenues for career progression. Future research should explore longitudinal studies and targeted interventions to further refine these findings and improve overall job satisfaction.

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