

International Journal of Statistics and Applied Mathematics

ISSN: 2456-1452
Maths 2019; 4(4): 43-49
© 2019 Stats & Maths
www.mathsjournal.com
Received: 19-05-2019
Accepted: 21-06-2019

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Multiple regression model fitted for job satisfaction of employees working in saving and cooperative organization

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Abstract

The research study aims to identify the significant factors affecting job satisfaction of employees working in saving and cooperative organization in Nepalgunj sub-metropolitan city of Bank District, Nepal; with the help of multiple linear regression model. This study has applied a cross-sectional and descriptive statistical research designs entirely based on primary data. A representative sample of size 161 was collected by using a structured questionnaire to each employee. F-ratio's have been calculated to test the overall significance of the coefficients of fitted multiple regression model (i.e. to test the goodness of fit of the multiple regression model). The fitted multiple linear regression model has shown that the factors pay facilities, working environment, training courses, encouragement factors and motivation factors have significant impact on job satisfaction of the employees under the study. The findings reveal that all the significant variables have positive impact on job satisfaction. Although, the variables like supervision, relationship with co-employees and carrier development opportunities are not significant in the final model but it is important variable and is significant while correlating with job satisfaction.

Keywords: Job satisfaction, f-ratio, multiple linear regression

1. Introduction

The dictionary meaning of job satisfaction is feeling of fulfillment or enjoyment that a person derives from their job. Job satisfaction can be defined in various ways it is simply how content individual is with his or her job. In other words, whether or not they like the job or individual aspects or facets of jobs, such as nature of work or supervision.

Job satisfaction is a multi-dimensional attitude; it is made up of attitude towards pay, promotion, relationship with co-workers, supervision, work conditions, benefits, contingent rewards, nature of work, communication, participation, performance evaluation system of the company etc. (Cascio, 2002) [4]. Employee job satisfaction is one of the significant aspects of organizational effectiveness. Generally, it is an employee general attitude toward the job. Moreover, a job satisfaction is the extent to which a person is gratified or fulfilled by his or her work (Chapagai, 2011) [5]. The level of job satisfaction of the employees in the organization play vital role for the retention and attraction of the competent human capital in the organization. A satisfied worker tends to be less absent from his or her job, contribute for the benefit of the company and would like to stay in the organization (Adhikari, 2009) [2]. On the other hand, a dissatisfied worker has negative attitudes and prefers to remain absent too often, always remains unhappy with the supervisor, tries to leave the company once an opportunity is available, and remains in stress (Adhikari, 2009) [2]. Therefore, it is very essential for the organization to create a job satisfied environment within it.

Job satisfaction - or lack of it - hinges on a productive, accomplishing relationship between staff and management; indeed, the success of any organization depends on staff members who enjoy their jobs and feel rewarded by their efforts. The results showed significant positive association of employee empowerment, workplace environment, job loyalty and job performance with job satisfaction. Furthermore, there is a significant negative relationship between job satisfaction and turnover intention. The findings also demonstrate that there is no significant relation of turnover intention with employee empowerment and job performance (Javed M., *et al.*, 2014) [7]. The organizational culture gets more importance than spiritual leadership in satisfying the employees.

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This means that, spiritual leadership does not have as much considerable effect as the cultural dimensions on employee satisfaction (Aydin, 2009) [3]. The employees under organization are more or less satisfied with the job. The organization should consider on the salary, relationship of employees and supervisors, grievance handling and give more opportunity for the new employees (Raja, 2013) [12]. The Satisfaction of human resource finds close links to highly motivated employees. Motivated employees then develop loyalty or commitment to the organization resulting to greater productivity and lower turnover rates (Mulugeta, 2018) [10]. The findings of this study emphasized that each of the work life balance policies on its own is a predictor of job satisfaction. The result explored that managers in banks should improve the work life balance policies offered to employees in order to increase their job satisfaction, to improve staff commitment and productivity (Maurya V.N., et al., 2015)[9]. The results indicate a positive relationship between working environment and employee job satisfaction. The study concludes with some brief prospects that the businesses need to realize the importance of good working environment for maximizing the level of job satisfaction (Abdul R., et al., 2015)[11]. The Results reveal statistically significant differences in pay, promotion, fringe benefits, contingent rewards, supervision, co-workers and nature of work subscales (Zirwatul R., et al., 2014) [13]. ‘Job security’ is the most significant factor of job satisfaction to the employees of commercial banks in Nepal. Level of job satisfaction does not differ significantly between male and female employees. However, there are significant differences in level of job satisfaction among various age groups of employees (Pathak H., 2015)[11].

Job satisfaction is very important because most of the people spend a major portion of their life at working place. Moreover, job satisfaction has its impact on the general life of the employees also, because a satisfied employee is a contented and happy human being. Today in this growing world people are at different kinds of job which includes Savings and Credit Cooperative organization even.

In Nepal, even there are 13578 SACCOS established yet which has provided employment opportunities to 35447 employees www.deoc.gov.np/downloadfile/Coop data 2074). Every employees have their own feeling about their job and this proposed research work intends to analyze job satisfaction through selected parameters of cooperatives in Nepalgunj sub metropolitan city, Banke. The employees are the most precious and important asset of any organization, hence employee job satisfaction has now become one of the top priority issues in every the industry (Kumari & Pandey, 2011) [8]. So the issue is: What are the most significant factors of influencing job satisfaction that are highly perceived by employees particularly in the context of cooperatives in Nepalgunj Sub-metropolitan city?

1.1 Objectives

The general objective of the study is to assess the job satisfaction status of employees and identify the significant factors that influence the job satisfaction of the employees working in saving and cooperative organizations in Nepalgunj sub- metropolitan city, Banke; Nepal.

The specific objectives of the study are as follows:

- i. To identify the factors associated with job satisfaction level of employees in saving and cooperative organizations in Nepalgunj sub metropolitan city.
- ii. To examine the relationships between job satisfaction and different socio- economic, demographic factors.

1.2 Limitations of study

The study confined only on the basis of data collected through employees working in offices of selected Savings and Credit Cooperative organizations of Nepalgunj sub-metropolitan city, Banke. The findings of this study may not be generalized.

2. Materials and Methods

2.1 Research design

A cross-sectional and descriptive statistical research designs have been used for the research to identify and analyse various factors influencing on employees’ job satisfaction working in saving and credit cooperative organization in Nepalgunj Sub-metropolitan city of Banke District, Nepal.

2.2 Population and sample

Target population for this study is the total number of employees who are working in Savings and Credit Cooperative organization of Nepalgunj sub-metropolitan city of Banke District, Nepal. The population frame was obtained from the record of each office and the sample size for every organization was determined by proportionate allocation and finally sampling units were selected by using simple random sampling without replacement technique. The representative sample of size 161 was collected by using a structured questionnaire to each respondent.

2.3 Data analysis tools and techniques

Different statistical computational /analytical tools such as Ms-Excell, SPSS version 21 were used throughout the entire computation and analysis process. In this study regression analysis, along with t-test, F-test and Adjusted R², VIF are used to analyse the data.

2.4 Multivariate Regression Analysis

The data consist of n observations on a dependent or response variable Y and p predictor or explanatory variables, X₁, X₂, X₃, , X_p. The relationship between Y and X₁, X₂, X₃, , X_p, is formulated by multiple linear regression model as

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \dots + \beta_pX_p + \epsilon$$

For this model let Y represents the job satisfaction and Xi’s are the different predictors of job satisfaction. β₀, β₁, β₂, β_p, are constants referred to as the regression coefficients of explanatory variables and ε is a random disturbance or error (residual).

3. Results and Discussions

Table 1: Gender-wise distribution of employees and Comparison of job satisfaction with gender

| Gender | Frequency | % | t-value (p-value) |
|--------|-----------|------|-------------------|
| Male | 60 | 37.3 | -0.707 (0.481) |
| Female | 101 | 62.7 | |
| Total | 161 | 100 | |

Table 1 shows that male employees are equal 37.3% of the study participants while female employees are equal 62.7% of the study’s participants. As p-value = 0.481 > 0.05, the independent t-test reveals that there is no significant difference in job satisfaction among male and female.

3.1 Descriptive Information of Independent Variables:
The demographic, socioeconomic characteristics of the

respondents such as education level, designation, salary, age group and working tenure are in the following table.

Table 2: Descriptive information of categorical variables

| | Categories | Frequency | % | F-value (P-value) |
|------------------------|----------------------|-----------|------|-------------------|
| Designation | Manager | 33 | 20.5 | 1.206 (0.311) |
| | Accountant | 37 | 23 | |
| | Cashier | 41 | 25.5 | |
| | Assistant accountant | 27 | 16.8 | |
| | Office assistant | 23 | 14.3 | |
| | Total | 161 | 100 | |
| Education Level | SLC | 20 | 12.4 | 1.103 (0.335) |
| | Plus 2 | 75 | 46.6 | |
| | Bachelor/Masters | 66 | 46.6 | |
| | Total | 161 | 100 | |
| Salary | Upto to 10000 | 75 | 46.6 | 1.130 (0.326) |
| | 10001-15000 | 51 | 31.7 | |
| | More than 15000 | 35 | 21.7 | |
| | Total | 161 | 100 | |
| Age group of employees | 18-25 | 51 | 31.7 | 2.228 (0.087) |
| | 26-30 | 38 | 23.6 | |
| | 31-35 | 29 | 18 | |
| | 36 and above | 43 | 26.7 | |
| | Total | 161 | 100 | |
| Working tenure | Upto 1 year | 38 | 23.6 | 3.049 (0.030) |
| | 1.1- 3 years | 39 | 24.2 | |
| | 3.1-6 years | 39 | 24.2 | |
| | 6 and above | 45 | 28.0 | |
| | Total | 161 | 100 | |

From the above table 2, it can be seen that 20.5% (33) of the employees were manager, 23% (37) of the employees were accountant, 25.5% (41) were cashier, 16.8% (27) were account assistant and 14.3%(23) were office assistant Concerning with the education of the employees 12.4% (20) were SLC passed, 46.6% (75) were plus 2 and 41% (66) were graduates and post graduate employees.75 (46.6%) employees had up to Rs. 10000. Similarly, 51 (31.7%) employees had salary ranging from 10001-15000 and only 35 (21.7%) employees had salary more than 15001. It was found that maximum of the employees 51(31.7%) were up to age 25 years, 38 (23.6%) belonged to 26-30 years age group similarly 29 (18%) belonged to the age group 31-35 and 43 (26.7%) were 36 and above. Among all the employees 38 (23.6%) had experience of working up to 1 year, similarly 39 (24.2%) had experience of working 1.1-3 years, again 39

(24.2%) employees had working experience of 3.1-6 years and 45 (28%) employees had experience of working above 6 years in the same office.

Since, p-value ($p > 0.05$) reveals that there is no significant difference in job satisfaction among the employees with the different job positions. The F-value and p-value ($p > 0.05$) reveals that there is no significant difference in job satisfaction among employees with different academic qualification. Similarly, the F-value and p-value ($p > 0.05$) shows that there is no significant difference in the job satisfaction among employees of different salary ranges. The F-value and p-value ($p > 0.05$) reveals that there is no significant difference in job satisfaction among employees of different age groups. The F-value and p-value ($p < 0.05$) reveals that there is significant difference in job satisfaction among the employees with different working tenure.

Table 3: Coefficient of correlation between different variables for job satisfaction (i.e. Pearson’s correlation coefficients)

| | X ₁ | X ₂ | X ₃ | X ₄ | X ₅ | X ₆ | X ₇ | X ₈ | X ₉ |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| X ₁ | | | | | | | | | |
| X ₂ | 0.211** | | | | | | | | |
| X ₃ | 0.212** | 0.167* | | | | | | | |
| X ₄ | 0.199* | 0.340** | 0.505** | | | | | | |
| X ₅ | 0.235** | 0.101 | 0.068 | 0.187* | | | | | |
| X ₆ | 0.307** | 0.278** | 0.211** | 0.331** | 0.471* | | | | |
| X ₇ | 0.330** | 0.280** | 0.066 | 0.262** | 0.462** | 0.337** | | | |
| X ₈ | 0.174* | 0.125 | 0.139 | 0.368** | 0.111 | 0.239** | 0.111 | | |
| X ₉ | 0.499** | 0.295** | 0.264** | 0.468** | 0.452** | 0.465** | 0.562** | 0.371** | |

** and *means the correlation coefficient is significant at 0.01 level (2-tailed test) and 0.05 level (2-tailed test) respectively.

The variable representation is: X₁ = pay facilities, X₂ = supervision, X₃ = Relationship with the co-employees, X₄ = working environment, X₅ = training courses, X₆ = carrier development, X₇ = encouragement factors, X₈ = motivation factors and X₉ = job satisfaction.

The above table shows the correlation matrix. Pearson correlation has been used for the study. Test of significance has been done using two-tailed test. The results exhibit that all 8 variables measuring have significant correlation with job satisfaction. Moreover, all the variables have positive correlation with job satisfaction. The variable job satisfaction

is significant with pay facilities, supervision, Relationship with co-employees, working environment, training courses, carrier development opportunities, encouragement factors and motivation factors at 1% level of significance.

3.2 Significant variables selected

The following is the list of significant variables obtained (i) Pay facilities (ii) Supervision (iii) Relationship with co-employees (iv) Working environment (v) Training courses (vi) Carrier development opportunities (vii) Motivation factors (viii) Encouragement factors.

4. Test of presence of Multicollinearity

Multicollinearity refers to the existence of more than or exact linear relationship among some or all explanatory variables of a regression model. There are several techniques for detecting multicollinearity but in this study, tolerance and variance inflation factor (VIF) have been used.

The tolerance and VIF are the important and reliable tests of multicollinearity because if multicollinearity exists between two or more independents variables it can deteriorate the results of multiple regression (Hair Jr *et al.*, 2010) [6]. Therefore, before running the multiple regression model, the presence of co-linearity among the above listed variable has been examined using variance inflation factors (VIF) and the result is shown in the following table 4.

Table 4: Table of tolerance value and variation inflation factor (VIF)

| Model | Collinearity Statistics | |
|--------------------------------|-------------------------|-------|
| | Tolerance | VIF |
| Pay facilities | 0.810 | 1.234 |
| Supervision | 0.812 | 1.232 |
| Relationship with co-employees | 0.713 | 1.402 |
| Working environment | 0.573 | 1.746 |
| Training courses | 0.663 | 1.509 |
| Carrier development | 0.659 | 1.517 |
| Encouragement factors | 0.679 | 1.474 |
| Motivation factors | 0.853 | 1.197 |

The result suggests that the current study does not have any problem with multicollinearity and this allows for standard interpretation of the regression coefficients.

5. Multiple linear Regression for explaining Job satisfaction of employees

The information about results obtained from the fitted multiple linear regression taking, Job satisfaction as the dependent variable and Pay facilities, Supervision,

Relationship with the co-employees, Working environment, Training courses, Carrier development, Encouragement factors and Motivation factors as the independent variables (predictors).

5.1 Coefficient of Determination (R-square)

The coefficient of determination with standard error of estimates.

Table 5: Model Summary

| Model | R | R-square | Adjusted R Square | Std. Error |
|-------|-------|----------|-------------------|------------|
| | 0.760 | 0.578 | 0.556 | 0.281 |

The results as shown in the above table 5, the adjusted R square value of 0.556 indicates that the independent variables (predictors) such as pay facilities, supervision, relationship with co-employees, working environment, training courses, carrier development, encouragement factors and motivation factors used in this model explained about 55.6% of the total variation in dependent variable job satisfaction of employees under study and the remaining 44.4% is explained by other factors which are not considered in this study. It means that 55.6% of the total variation of the dependent variable job satisfaction of employees can be explained by the regression model including the above independent variables. According to Hair Jr *et al.* (2010) [6], the value of adjusted R square is higher than the benchmark of 0.5 which is sufficiently explainable enough for the regression model.

According to Hair Jr *et al.* (2010) [6], the tolerance values should be higher than 0.1 and the VIF should be lower than 4.0 to avoid multi-collinearity. As it can be seen from the table 4, the collinearity statistics indicate that all tolerance values are greater than the benchmark indicated in the literature, showing that the eight independent variables are not influenced by each other and ensuring the appropriateness of executing the regression analysis. Consequently, the multicollinearity of the regression model is also examined by Variance Inflation Factor (VIF) with the rule of thumb lower than 4.0.

From the table 4, it is clear that the tolerance of eight independent variables ranges between 0.573 and 0.853 are substantially greater than 0.1 and VIF ranges from 1.197 to 1.746 are lower than 4. Therefore, it concludes that there is no multicollinearity exists among the independent variables in the observed data set.

5.2 Analysis of Variance (ANOVA)

Table 6: Overall test of significance (ANOVA Table)

| | Sum of square | d.f. | Mean sum of square | F | sig. |
|------------|---------------|------|--------------------|--------|-------|
| Regression | 16.467 | 8 | 2.058 | 25.998 | 0.000 |
| Residual | 12.034 | 152 | 0.079 | | |
| Total | 28.501 | 160 | | | |

Analysis of variance (ANOVA) has been used to assess the statistical significance of the result. From table 6, since P-value = 0.00 < 0.05. Thus, there are significant differences in between the factors affecting job satisfaction of the employees.

The table 6 illustrates the ANOVA analysis, which provides the statistic test for the overall model fit regarding the F statistic (Hair Jr *et al.*, 2010) [6]. As it can be seen in the table 6, the value of F statistic 25.998 is highly significant with p-value = 0.00 < 0.05, which means that there is a linear relationship between the dependent variable (Overall job

satisfaction) and the independent variables such as pay facilities (salary), supervision, relationship with co-employees, working environment, training courses, carrier development, encouragement factors and motivation factors. In other words, any given change in one of the independent variables will always produce a corresponding change in the dependent variable (job satisfaction), thus all independent variables were confirmed by the analysis to have strong impact on dependent variable.

5.3 Regression model

Table 7: Multivariate regression coefficients with Job satisfaction as dependent variable

| | Unstandardized Coefficients | | t | p-value | 95% Confidence Interval for β | |
|--------------------------------|-----------------------------|------------|-------|---------|-------------------------------------|-------------|
| | β | Std. Error | | | Lower Bound | Upper Bound |
| Constant | 0.417 | 0.277 | 1.508 | 0.134 | -0.129 | 0.964 |
| Pay facilities | 0.161 | 0.037 | 4.355 | 0.000 | 0.088 | 0.234 |
| Supervision | 0.017 | 0.042 | 0.395 | 0.694 | -0.066 | 0.099 |
| Relationship with co-employees | 0.030 | 0.052 | 0.580 | 0.563 | -0.072 | 0.132 |
| Working environment | 0.158 | 0.059 | 2.699 | 0.008 | 0.042 | 0.274 |
| Training courses | 0.069 | 0.030 | 2.284 | 0.024 | 0.009 | 0.129 |
| Carrier development | 0.052 | 0.034 | 1.520 | 0.130 | -0.016 | 0.120 |
| Encouragement factors | 0.185 | 0.040 | 4.663 | 0.000 | 0.107 | 0.264 |
| Motivation factors | 0.168 | 0.055 | 3.065 | 0.003 | 0.060 | 0.277 |

As it can be seen from Table 6, the R^2 was statistically significant, with $F = 25.998$ and $P\text{-value} = 0.00 < 0.05$, Using the values of the coefficients (β) from the regression coefficients Table 7. The estimated multiple linear regression equation is as follows:

$$\hat{Y} = 0.417 + 0.161X_1 + 0.017X_2 + 0.030 X_3+ 0.158X_4 + 0.069X_5 + 0.052 X_6+ 0.185X_7 + 0.168X_8 \dots \dots \dots (i)$$

For this model let Y represents the job satisfaction. X_1 represents pay facilities, Supervision (X_2), relationship with co-employees (X_3), working environment (X_4), training courses(X_5), Carrier development (X_6), encouragement factors (X_7) and X_8 represents motivation factors.

On the basis of beta coefficients (regression coefficients) from table 7. Where; Constant (intercept), $\beta_0 = 0.417$ represents when the value of the independent variables are zero, the job satisfaction would take the value 0.417. $\beta_1 = 0.161$ indicates that one unit increase in the pay facilities results in 0.161 units increase in the Job satisfaction and t value = 4.355 with ($P\text{-value} = 0.00 < 0.05$) is also significant. So, alternative hypothesis is accepted which states that there is positive relationship between pay facilities and job satisfaction. The 95% confidence interval which is 0.088 to 0.234. Again the model shows $\beta_2 = 0.017$; one unit increase in the supervision results in 0.017 units increase in the Job satisfaction and since, t value = 0.395 with ($P\text{-value} = 0.694 > 0.05$) is insignificant which states that there is no significant relationship between supervision and job satisfaction and also the 95% confidence interval is -0.066 to 0.099. Likewise, coefficient $\beta_3 = 0.030$; one unit increase in relationship with co-employees results in 0.030 units increase in the Job satisfaction and t value = 0.580 with ($P\text{-value} = 0.563 > 0.05$) is also insignificant which states that there is no significant relationship between relationship with co-employees and job satisfaction. The 95% confidence interval is -0.072 to 0.132.

For working environment, $\beta_4 = 0.158$; one unit increase in the working environment results in 0.158 units increase in the Job satisfaction. In other words, if the working environment is one times better than before then the level of job satisfaction is increased by 0.158 (15.8%.) and t value = 2.699 with ($P\text{-value} = 0.008 < 0.05$) is significant which means that there is positive relationship between working environment and job satisfaction. The 95% confidence interval is 0.042 to 0.274.

Similarly, the regression coefficient for training courses, $\beta_5 = 0.069$; one unit increase in the training courses results 0.069 units increase in the Job satisfaction and t value = 2.284 with ($P\text{-value} = 0.024 < 0.05$) is significant which means that there is positive relationship between the training courses and job satisfaction. The 95% confidence interval is 0.009 to 0.129.

For carrier development, $\beta_6 = 0.052$; one unit increase in carrier development results in 0.052 units increase in the Job satisfaction and t value = 1.520 with ($P\text{-value} = 0.130 > 0.05$) is insignificant. The null hypothesis is accepted which states that there is no significant relationship between carrier development and job satisfaction. The 95% confidence interval is -0.016 to 0.120

For encouragement factors, the regression coefficient $\beta_7 = 0.185$ indicates one unit increase in encouragement factors results in 0.185 units increase in the Job satisfaction and t value = 4.663 with ($P\text{-value} = 0.000 < 0.05$) is highly significant which states that there is positive relationship between encouragement factors and job satisfaction. The 95% confidence interval is 0.107 to 0.264.

Finally, for motivation factors on the basis of beta coefficient $\beta_8 = 0.168$; the model shows that one unit increase in motivation factors results 0.168 units increase in the Job satisfaction and t value = 3.065 with ($P\text{-value} = 0.003 < 0.05$) is significant. So, alternative hypothesis is accepted which means that there is positive relationship between motivation factors and job satisfaction and also the 95% confidence interval is 0.060 to 0.277.

From the above table 7, it can be seen that the variables pay facilities, working environment, training courses, encouragement factors and motivation factors have significant impact on job satisfaction of the employees at 5% level of significance. Other than (Except) Supervision, relationship with co-employees and Carrier development since, all other p-values for calculated t-statistics for each of the model coefficients are seen to be less than 0.05 which indicate that all of the model coefficients are significant at 5% level of significance.

Thus, after taking only significant independent variables (predictors) pay facilities, working environment, training courses, encouragement factors and motivation factors for dependent variable job satisfaction, the estimated multiple linear regression equation (i) becomes:

$$\hat{Y} = 0.417 + 0.16X_1 + 0.158X_4 + 0.069X_5 + 0.185X_7 + 0.168X_8$$

6. Model adequacy (Residual analysis)

It includes the information how the job satisfaction level is adequately explained by the fitted model.

6.1 Test of Normality of residuals

A graphical tool for assessing normality is the normal probability plot, a percentile - percentile plot (P-P Plot) or the cumulative probability plots of residuals (P-P plot) of the standardized data against the standard normal distribution. For normal data, the points plotted in the P-P plot should fall

approximately on a straight line, indicating high positive correlation. For the research perspective, we want to show that our data set are normally distributed.

The following figure 1 shows how the residuals are deviate from the normal line.

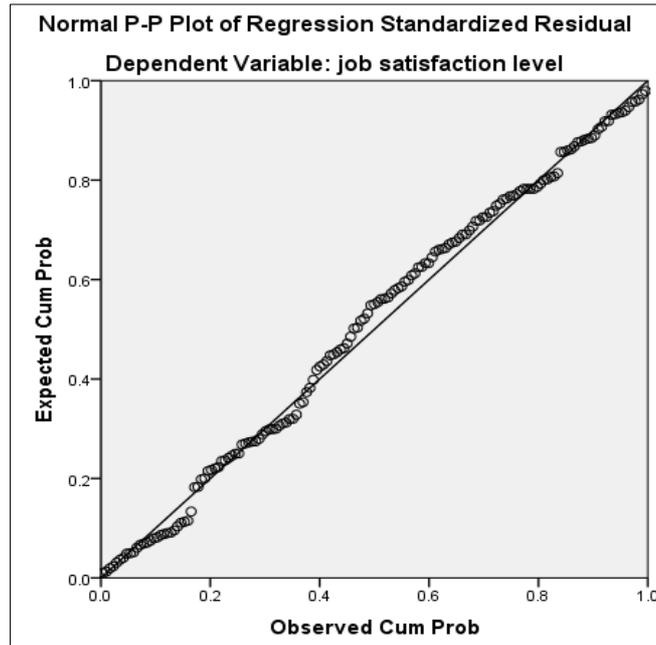


Fig 1: Normal P-P Plot of Regression Standardized Residual.

If the Standardized residuals are normally distributed, the scatters should fall on or tightly close to the normal distribution line. Figure.1 shows that the scatters of the residuals basically fall straightly on the normal distribution line, indicating a normal distribution of residual. From the above graph, it shows that there is no huge deviation of residuals from normal line. Also, it can be seen that the

data set is going through the origin. So, it indicates that the residuals are approximately normally distributed. Hence, it may conclude that the observed data is normally distributed.

6.2 Goodness of fit

The goodness of fit of the estimated model is judged by Shapiro-Wilk test.

Table 8: Test of goodness of fit

| n | Mean | S.D | Shapiro-Wilk | p-value |
|-----|------|------|--------------|---------|
| 161 | 0.00 | 0.97 | 0.059 | 0.200 |

The above table 8 shows that the p-value obtained from the Shapiro-Wilk test is greater than 0.05 (at 5% level of significance) which indicates that the coefficients of residuals are insignificant in overall. So, insignificant value suggests that the estimated model fit is well.

6.3 Test of Homoscedasticity of Residuals

The following figure is the scatter plot of residuals versus predicted values from the fitted model.

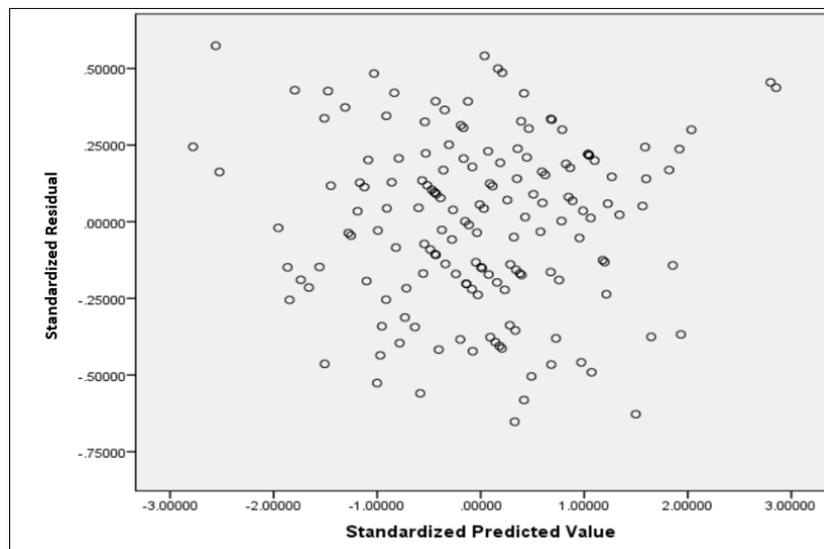


Fig 2: Test of Homoscedasticity of Residuals (Scatter Plot for Homoscedasticity)

The residual scatter plots could be used to test the assumption of homoscedasticity. If there is no clear relationship between the residuals and predicted values, the assumption of homoscedasticity should also be met. In this study, by plotting the standardized residuals against the predicted values as shown in figure 2, the scatter plot of residual versus predicted value shows that the errors are uniformly distributed over the entire range of the predicted value and it found that there was no clear relationship between the residuals and the predicted values. Therefore, the results suggest that the assumption of homoscedasticity should be met in the study. It is the indication of absence of heteroscedasticity.

7. Conclusion and Recommendations

7.1 Conclusion

From the results of the study, it can be concluded that the different demographic factor, Socio-economic factor and job related factors have significant influence on job satisfaction of the employees. The fitted multiple linear regression model has shown that the factors pay facilities, working environment, training courses, encouragement factors and motivation factors have significant impact on job satisfaction of the employees under the study.

The finding of the study shows that all the significant variables have positive impact on job satisfaction. Although, the variables like supervision, relationship with co-employees and carrier development opportunities is not significant in the final model but it is important variable and is significant while correlating with job satisfaction.

7.2 Recommendation

From the finding of this study following recommendations can be made:

- Pay facilities of the employees should be decided in accordance to their education level, tenure of work and working hours; this may help in job satisfaction of employees.
- There should not be any discrimination in the working environment in accordance to the education level or job level.
- Different schemes like bonus, selecting employee of the month, promotion etc. should be given to the employees that motivates them to the work.

8. References

1. Abdul R, Raheela M. Impact of Working Environment on Job Satisfaction. 2nd Global Conference on Business, Economics, Management and Tourism, 30-31 October Prague, Czech Republic, 2014.
2. Adhikari DR. Organizational behaviour (3rd ed.). Kathmandu: Buddha Academic, 2009.
3. Aydin B. A Research Analysis on Employee Satisfaction in terms of Organizational Culture and Spiritual Leadership. International Journal of Business and Management, 2009.
4. Aziri B. Job Satisfaction: A Literature Review. Management Research and Practice, 2011; 3(4):77-86
5. Cascio WF. Managing human resource (6th ed.). New Delhi: Tata McGraw-Hill, 2002.
6. Chapagai RR. Impact of employee participation on job satisfaction in Nepalese commercial banks. Journal of management. 2011; 4(1):39-51.
7. Hair Jr, Joseph F, Black JW, Babin BJ, Anderson ER. Multivariate Data Analysis, Seventh Ed., Pearson New

- International Education, Pearson Education Limited. 2010; 1-758.
8. Javed M, Balouch R, Hassan F. Determinants of Job Satisfaction and its Impact on Employee Performance and Turnover Intentions. International Journal of Learning & Development, 2014; 4:2.
9. Kumari G, Pandey KM. Job Satisfaction in Public Sector and Private Sector: A Comparison. International Journal of Innovation, Management and Technology. 2011; 2:3.
10. Maurya VN, Chandra KJ, Bijay S, Charanjeet SA, Avadhesh KM, Diwinder K. An Empirical analysis of work life balance policies and its impact on employee's job satisfaction and performance: Descriptive statistical approach. American Journal of Theoretical and Applied Statistics. 2015; 4(2-1): 33-43
11. Mulugeta G. Employee's Job Satisfaction and Supervisors Performance at Debre Berhan University. American Journal of Theoretical and Applied Statistics. 2018; 7(2):85-91.
12. Pathak HP. Job Satisfaction of Employees in Commercial Banks. The Journal of Nepalese Business Studies. 2015; IX:1. ISSN: 2350-8795.
13. Raja RV, Vijay Anand. A Study on Employee Job Satisfaction with Special Reference to Krishnagiri District Co-operatives Spinning Mills Ltd. International Research Journal of Business and Management-IRJBM. 2013; II:73-79.
14. Zirwatul R, Ibrahim AR, Bakar AA. Job Satisfaction Among Malaysian Employees: An Application of Spector's Job Satisfaction Survey in the South East Asian Context. Journal Pengurusan. 2014; 41:69-79.