

Employment Satisfaction at Higher Education Institutions of Lahore Pakistan

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ABSTRACT

The aim of this study is to explore Employment Satisfaction at higher education institutions of Lahore Pakistan. Lahore city being capital of Punjab province and 2nd largest metropolis of Pakistan is famous for its higher educational institutions. Therefore a pertinent questionnaire research on 145 educators has been carried out to expose the insightful portrait of Pakistan's academia. At national level, the study is unique of its nature because it involves modeling of numeric and non-numeric factors which can affect employment satisfaction. The data was analyzed using Multinomial Logistic Regression models. It has been challenging to predict measurement of satisfaction behavior on a quantitative scale. Results indicate higher satisfaction in private universities, which is caused by work environment, affiliation with the institution and remuneration. Interestingly, significant factors which may increase/decrease satisfaction for public sector faculty are health and medical facilities, training and development programs and policies of institution.

Key words:

Multinomial logistic regression, Employment satisfaction, Education, Higher Education, Lahore and Pakistan

1. INTRODUCTION

Higher education always plays a vital role in the development of a state. Higher education in Pakistan is equally flourishing in both public and private sectors under the guiding principles of Higher Education Commission of Pakistan [1]. In stipulations of employment both sectors have their merits and shortcomings. Keeping this fact in mind, the institutions of both sectors are included in the research. [2]

The primary focus of paper is on the satisfaction level of the employees of higher education institutions under certain indicators. An attempt has been made to find out those indicators or elements which can enhance the satisfaction level of faculty members. To formulate research hypothesis and questionnaire, several past studies have been reviewed and some of them are presented in the following paragraphs.

Dua [3] assessed Job stress through 21 job-related questions from 1,028 staff members of the University of New England and reported that workplace conditions, work load, less promotion opportunities and job-insecurity are the factors affecting their satisfaction with university.

Lacy and Sheehan [4] examined features of academic personnel's satisfaction with their job across the eight countries Australia, Germany, Hong Kong, Israel, Mexico, Sweden, UK and USA). Job satisfactions were strongly higher for the Australian data, and found the affect of work environment on job satisfaction. Results showed that factors related to work

environment in which academics work, including university environment, morale, sense of community, and relationships with academic colleagues, are the greatest predictors of job satisfaction. Whereas in another study [5] statistical test of differences conclude that the significant factors affecting satisfaction are: management position, characterized by seniority in age, designation, and experience.

Volkwein and Parmley [2] examined the employment satisfaction in public and private sector. They found that the hypothesized public and private sector differences are restricted only to satisfaction with extrinsic rewards, and even these differences vanish when all related variables are controlled for using regression analysis. In both public and private sectors, job satisfaction is most significantly linked with work environments, teamwork and small levels of interpersonal difference.

Ward and Peter [6] used ordered Probit analysis to examine the data of 900 faculty members of five Scottish universities. Gender remained non-significant, whereas salary of respondent and academic work place is affecting job satisfaction.

Titus and Hickson [7] not only found how satisfied UK academic staff with their basic duties of teaching and research, but also their satisfaction with salary. A binomial logit analysis on a survey data was used and yields a strong positive relationship between salary satisfaction and gender, indicating that women academics are more satisfied than the men employees. Satisfaction was negatively affected with increase of age and work experience in higher education. Salary satisfaction was positively associated with the designation. Another study [8] reviews the literature on studies related about the relationship of job satisfaction and age, gender, designation and experience.

Sesanga and Garrett [9] carried out a research in Uganda which identifies the factors contributing considerably to the satisfaction or dissatisfaction of academic staff of higher education institutions. A sample of 182 respondents from two universities in Uganda determined most significant factors affecting employment satisfaction: behavior of colleagues, supervision, salary, authority, research, promotion, and work place.

After reviewing extensive literature, five broad headings for the questionnaire were finalized along with questions for each section:

1. Work environment (*8 questions*)
2. Policies of institution (*11 questions*)
3. Health & medical facilities (*8 questions*)
4. Training & development opportunities (*12 questions*)
5. Family benefits (*5 questions*)

2. METHOD

Universe

Universe under study includes only sixteen higher education institutions of Lahore Pakistan which are recognized by Higher Education Commission of Pakistan (HEC). Medical colleges, engineering universities and fine arts institutions are not considered in the universe.

Sampling Plan

A sample of 145 educators was selected from six HEC recognized universities using a two stage cluster sampling technique. On the first stage universities were chosen and on the second stage proportionate sample of individuals was selected from each institution.

Table 1: The Sample Breakup of six selected institutions

Institution	Size of faculty	10% of size of faculty	Successful Interviews
PU	550	55	54
GCU	202	20	20
LCWU	298	30	26
LUMS	152	15	15
FCC	199	20	21
UCP	30	3	9
TOTAL			145

Questionnaire

A robust questionnaire of 50+ questions was designed after reviewing relevant literature. It was also evaluated by academicians, psychologists and research practitioners. A pilot of 5 interviews was used for modifications and improvements in questionnaire. After capturing demographic information respondents were requested to complete five broad sections. The response of most questions was recorded on five point Likert scale. The categories of scale were: Highly satisfied, Satisfied, Just OK, Dissatisfied and Highly dissatisfied. Some examples of 50+ questions are given below:

1. Type of employment (Permanent or contractual)
2. Monthly remuneration
3. Life insurance benefits
4. Work environment is cooperative
5. Education assistance for children
6. Subject trainings
7. Medical facilities for spouse & kids
8. Learning opportunities are available
9. Office timings etc.

Data Collection

Considering the power failure problem and lack of email usage in some professors of higher age group, it was decided to choose face to face interview method. The participants were motivated to take part in the survey by freely voicing out their opinion and they were also told that their opinion is vital to complete this research which would benefit the society at large. Some of them were provided ample time to fill questionnaire and the completed one was collected on second visit.

3. ANALYSIS

Reliability

The researcher has entered and analyzed data in SPSS. After data cleaning and validation, reliability of questionnaire was examined with the use of Cronbach's alpha statistic. Value of Cronbach's alpha remained 0.955 for 54 items which exhibit that the questionnaire data is reliable for analysis and can be used for insights and reporting. Nunnally (1978) has indicated that the 0.7 value of the Cronbach's alpha is an acceptable reliability coefficient. Reliability of complete questionnaire was further verified by Guttman split-half coefficient. The value of coefficient of Guttman Split-half was reported as 0.871, which seconds Cronbach's alpha result.

Multinomial Logistic Regression Modeling

Many researchers have been using this technique during the analysis of their research data. Bauer [18] used multinomial logistic regression to research on "Sexual Behavior and Drug Use among Asian and Latino Adolescents". Alderson et al [19] applied multinomial logistic regression for their research study "Social status and cultural consumption in the United States". Schemp et al [20] used multinomial logistic regression models in their research study "Maternal age and parity-associated risks of preterm birth: differences by race/ethnicity".

Agresti [10], Hosmer and Lemeshow [11] have explained the situations to use logistic regression modeling. It is used when the response variable is categorical and has two or more categories. If response variable is categorical and has two categories, a Binary or Binomial logistic regression is used, while multinomial logistic regression is applied in case of more than two categories of response variable. In this study the question treated as response variable was: "Overall how do you rate your employment satisfaction today?" with five possible categories; Highly satisfied, Satisfied, Just OK, Dissatisfied and Highly dissatisfied. On the other hand predictors include mixture of both continuous and categorical variables.

The Model: To treat the response variable which is typically dichotomous in logistic regression, we say that the response variable can take the value 1 with a probability of success (π), or a value 0 with probability of failure ($1 - \pi$). Such variables are known as Bernoulli variables. While the applications of logistic regression have been extended to cases where the response variable is of more than two categories, known as multinomial or polytomous, Tabachnick and Fidell (1996) used the term polychotomous.

The predictor variables in logistic regression can take any form continuous or qualitative. That's why logistic regression has no assumption about the distribution of the predictor variables. They do not boast to be normally distributed, linearly related or of equal variance within each group. The relationship between the predictors and response variable is not a linear function in logistic regression, instead, the logistic regression function is used, which is the logit transformation of π :

$$\pi = \frac{\exp(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_i X_i)}{1 + \exp(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_i X_i)} \quad \text{Eq. (1)}$$

Where β_0 is constant of equation and β s are the coefficients of independent variables. For the interpretation purpose it can also be expressed as:

$$\log it[\pi(x_i)] = \log\left[\frac{\pi(x)}{1-\pi(x)}\right] = \beta_0 + \beta_1 x_1 + \dots + \beta_i \quad \text{Eq. (2)}$$

The results of first attempt to apply multinomial logistic regression model could not remain successful because it cannot pass statistical requirements of logistic regression: model was in-significant, invalid values of odd ratios, strange values of regression coefficients and very small values of Pseudo R-squares etc.

Hence it was decided to see the outlying observations. Logistic regression does not offer full diagnostics for multiple responses as compared to the binary response. Therefore the graphical representations of predicted probabilities and the residuals are used to omit the outlying observations from the data.

In figure No. 1 the residuals are plotted to see the influence of observations on the model. The observation number 4, 56 and 133 are dissimilar and distant from all other observations. This exhibits a high probability of error on these three points. The observations 4, 56 and 133 were omitted and the residual plot was regenerated. Figure No. 2 shows the residual plot after omitting the observations of high errors. Similarly, the predicted probabilities were plotted to see the influential observations. One observation was omitted when found influential. The omitted observation had least probability for prediction i.e. 0.3366 whereas other observations had greater than 0.5 probability of prediction, even most of them were close to one.

Large number of variables was also reduced by summing scores in each section of questionnaire. Finally, the following 19 predictors were used in multinomial logistic regression model: designation of educator, education of educator, experience of educator, overall satisfaction with health & medical facilities, overall satisfaction with work environment, overall satisfaction with recreation and family benefits, overall satisfaction with training & development Programs, overall satisfaction with policies of institution, institution size, affiliation (experience in current institution), sum of scores for health and medical facilities, sum of scores for work environment, sum of scores for recreation and family benefits, sum of scores for training and development programs and sum of scores for policies of institution, tenure of appointment (contracts), age and salary of the educator.

Finally, the fitted models for both public and private sectors passed the following statistical requirements:

- -2log likelihood model fitting criteria approved by effect selection Chi-Square test (sig<0.05 for all entered models)
- Chi-Square likelihood ratio test (sig=0.000)
- Chi-Square goodness of fit (sig=1.000)
- Pseudo R-Square (Cox & Snell, Nagelkerke and McFadden were more than 0.700)
- Asymptotic correlation matrix (missing values are observed to check redundant parameters)
- Asymptotic covariance matrix (zeros are observed to check redundant parameters)

Fig 1: Residuals before exclusion of outlying observations

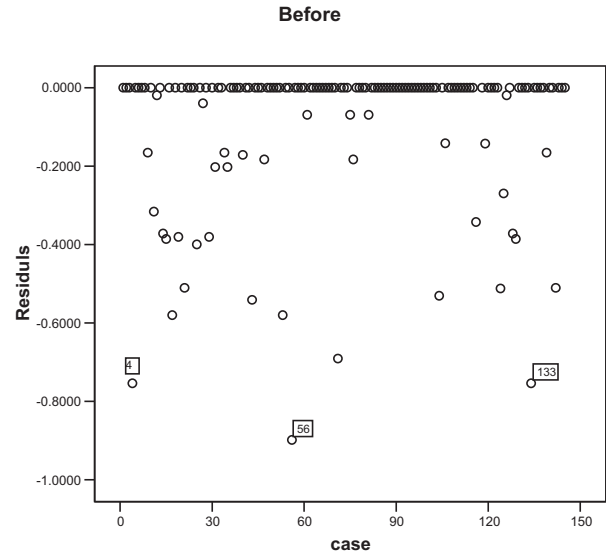
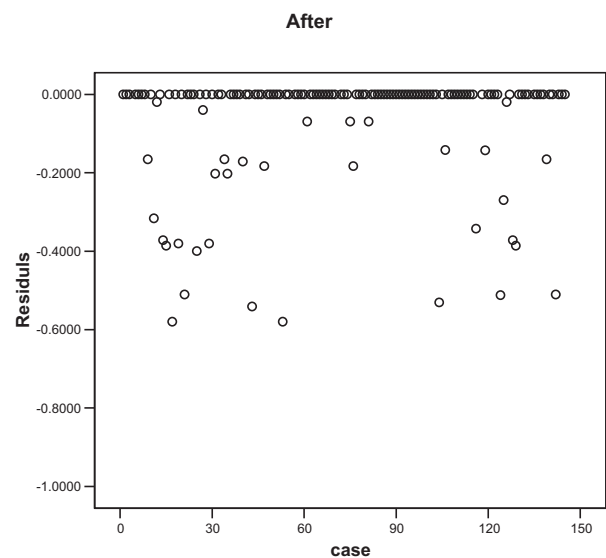


Fig 2: Residuals after exclusion of outlying observations



4. FINDINGS FROM MULTINOMIAL LOGISTIC REGRESSION

Public Sector

As the classification table of model output in table 2 shows that model has predicted 96% cases correctly. The factors which effect employment satisfaction of public sector educators are:

- Score for health & medical facilities (*sum_a*)
- Score for training and development programs (*sum_d*)
- Score for policies of institution (*sum_e*)
- Overall satisfaction with health & medical facilities (*ah*)

The final logit model is obtained as:

$$Y^* = \beta_0 + \beta_1(\text{sum_a}) + \beta_2(\text{sum_d}) + \beta_3(\text{sum_e}) + \beta_4(\text{ah}) \quad \dots \text{Eq. (3)}$$

Table 2: Classification table for Public Institutions

Observed	Predicted					
	Highly Dissatisfied	Dissatisfied	Just OK	Satisfied	Highly Satisfied	Percent Correct
Highly Dissatisfied	2	0	0	0	0	100%
Dissatisfied	0	8	0	0	0	100%
Just OK	0	0	59	2	0	97%
Satisfied	0	0	2	19	0	91%
Highly Satisfied	0	0	0	0	6	100%
Overall Percentage	2%	8%	63%	21%	6%	96%

The fitted data model can produce several predictions. For instance if a public sector employee is dissatisfied with overall health and medical facilities and his score for health and medical facilities is 12, score for training and development programs is 13, score for policies of institutions is 19. The prediction about overall satisfaction of employee would be ‘Highly dissatisfied’ with a probability of 0.999.

Similarly if a public sector employee is dissatisfied with overall health and medical facilities and his score for training and development programs is 53, score for health and medical facilities is 19, score for policies of institutions is 43. The prediction about overall satisfaction of employee with the institution would be ‘Satisfied’ with a probability of 0.9300.

Private Sector

As the classification table of model output in table 3 shows that model has predicted 76% cases correctly. The factors which effect employment satisfaction of private sector educators are:

- Scores for work environment (*sum_b*)
- Affiliation (experience with current institution) and
- Monthly salary

The final logit model is obtained as:

$$Y'' = \beta_0 + \beta_1(\text{sum}_b) + \beta_2(\text{affiliation}) + \beta_3(\text{salary}) \quad \text{..Eq. (4)}$$

The above model can produce several predictions. For instance if a private sector employee drawing monthly salary of PKR 47,000 and his affiliation with current institution is 4 years and his score for work environment is 35. The prediction about overall satisfaction of employee would be ‘Satisfied’ with a probability of 0.8333.

Similarly if a private sector employee drawing monthly salary of PKR 31,000 and his affiliation with current institution is 1 year and his score for work environment is 12. The prediction about overall satisfaction of employee would be ‘Highly dissatisfied’ with a probability of 0.9999.

Table 3: Classification table for Private Institutions

Observed	Predicted					
	Highly Dissatisfied	Dissatisfied	Just OK	Satisfied	Highly Satisfied	Percent Correct
Highly Dissatisfied	2	0	0	0	0	100%
Dissatisfied	0	4	0	0	0	100%
Just OK	0	0	13	3	0	82%
Satisfied	0	0	3	11	3	65%
Highly Satisfied	0	0	0	2	3	60%
Overall Percentage	4 %	9%	38%	36%	13%	76%

5. RESULTS

Entire Sample

Out of total 145 respondents 49 (34%) are satisfied, 16 (11%) are dissatisfied and 80 (55%) are neither satisfied nor dissatisfied. The average satisfaction remained 3.28 out of 5. Result is different from a previous study of United States where the average satisfaction of employees was reported 4.13 out of 5 [12]

Public and Private Sectors

The employees of private sectors reported a higher satisfaction 49% as compared to public sector where 27% employees are satisfied. In private sector the factors which contribute significantly for increasing satisfaction are work environment, affiliation with the institution and monthly salary. Salary and workplace affect significantly on employment satisfaction in Scotland [6]. Work environment contribute significantly to increase the satisfaction in turkey [13]. Salary contributes significantly to increase the satisfaction in Singapore [14].

In public sector, the factors which contribute significantly for increasing satisfaction are related with health and medical facilities, training and development programs and policies of institution. Another overseas study concluded different results; work environment and team work contribute significantly to increase the satisfaction of public sector employees [2]. Public sector employees of Italy differ from private employees with safety and health facilities [15]. Health and welfare benefits contribute significantly to decrease employment satisfaction in Italy [16].

Remuneration

Overall 65% were satisfied among those educators whose monthly remuneration is more than 50 thousand Pakistani rupees, followed by 54% satisfied with a salary between 41 to 50 thousand, 48% with 31 to 40 thousand, 41% with 21 to 30 thousand and 17% with a salary of less than 20 thousand rupees. The average monthly salary of public sector employees is PKR 21,492.13 and for private sector employees is PKR 47,866.67

Insights from other Demographic Details

Gender: Males are more satisfied than females. In 90 male respondents 32 (36%) are satisfied while in 55 females 17 (31%) are satisfied. This second the findings of National Survey of Post-Secondary Faculty in United States where satisfaction of males was reported higher i.e. 85% followed by females 82% [17]. Whereas, in England females are more satisfied [7]

Designation: Assistant professors are more likely to be satisfied as compared to lectures, professors and associate professors. Among assistant professors 53% were satisfied followed by associate professors with 48%, professors 43% and lecturers 20%. This is contrary to: Assistant professors are less satisfied than others [17].

Age: Educator's age has a very strong correlation with educator's experience (Pearson Correlation=0.931 with Sig=0.000). The percentage of satisfied respondents is 50% among those who are more than 60 years of age, followed by 41-50 years of age with 43%, in 51-60 years 39%, in 31-40 39% and 24% in less than 31 years of age. This is contrary to a previous study of United Kingdom, which reports that increase of age and experience decrease satisfaction [7]

Qualification: The percentage of satisfaction among MS degree holders is higher i.e. 86%, followed by 62% who have PhD, 33% M. Phil and 19% MA/MSc.

6. CONCLUSION AND DISCUSSION

Study concludes that more educators raise their thumbs by reporting higher satisfaction for their current institutions. However, perhaps 80 are fence sitters who could not voice their opinion on overall satisfaction. Classification table of multinomial logistic regression classify 5 of them into the satisfied category and interestingly no one of them have been classified into dissatisfied category by the model. This reveals a fact that on the basis of other indicators these 5 respondents are likely to be satisfied which is a good sign for administrators of higher education in Pakistan. Most of the fence sitters may become satisfied after putting little administrative effort for the improvement of limited areas identified by model for each sector.

Using analysis results the overall satisfaction of higher education employees could be increased. For instance private institutions which have not been surveyed in this study could improve satisfaction of their employees by providing them better work environment, competitive salaries and longer tenures of appointments/contracts to improve their affiliation with institution.

The satisfaction level of public sector employees is observed lowers which is linked with relatively lower remuneration. Analysis results has revealed that satisfaction of public sector educators could be improved by providing better salaries, better health and family facilities, introducing new training and development programs and introducing new institution policies. The public sector administrators need to place more efforts as compared to the private sector administrator.

Some demographic information has also revealed insights about common trends in Pakistan's academia. The pleasure of

working in academics is higher for those who hold MS degrees. One of the reasons for higher satisfaction among MS degree holders is foreign qualification and foreign qualified faculty enjoy good designation and better remuneration in Pakistan. Most of the faculty members who are qualified from Pakistan are MA/MSc, M. Phil and PhD because after 2004 some Pakistani universities started introducing BS/MS Programs. Some universities are still following older system of MA/MSc.

It is quite common in Pakistan to offer a higher remuneration to more experienced educator. This is one of the reasons of higher satisfaction among educators of higher age groups. As the experience of faculty member and age exposed a very strong positive correlation. Therefore, it could be assumed that educators of higher age groups are more experience than others. Being more experienced they are enjoying higher remuneration and hence their satisfaction is higher.

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