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Rewards, Satisfaction and Economic Trends under Nonlinear Assumption

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Abstract

The purpose of this study to investigate the impact of rewards on job satisfaction and whether economic trends moderate the relationship of job satisfaction and rewards or not. Furthermore, this study also investigates whether the relationship between job satisfaction and reward is linear or nonlinear and whether the relationship diminishes or improves with predictor inclusion. Data collection was done through online and self-administered questionnaires by adopting cluster sampling technique from higher education institutions of Pakistan. Results based on 2160 responses suggest that economic trends moderate the relationship of job satisfaction and reward while assuming the economic trends as perceived rewards. The logit model was adopted to probabilistic relationship between job satisfaction and reward in moderation with economics trends. The moderations magnify the impact of rewards on job satisfaction. The job satisfaction is more sensitive to extrinsic reward as compared to intrinsic reward. The relationship of job satisfaction and reward is nonlinear for both extrinsic and intrinsic reward suggesting the diminishing relationship of job satisfaction and rewards. This study has pivotal implication for the higher education sector as it helps the sector to align the rewards with economic and trends and can normalize the reward after assessing the nonlinear stricture of relationship.

Keywords*:* Intrinsic Rewards, Extrinsic Rewards, Job Satisfaction, Economic Trends, Logit Model.

JEL Classification Code: J11, J28, J33, M52, O15.

1. Introduction

In educational organizations (i.e. Schools, colleges, universities), faculty members are the key source to achieve organizational objectives and their job satisfaction effects their teaching and learning (Mabaso & Dlamini, 2017). Job satisfaction in the professional life of Higher Education Institution's (HEIs) faculty members is an essential element in making their profession attractive to them and contributes to their success at work (Bentley, Coates, Dobson, Goedegebuure, & Meek, 2012). It is a positive emotional state resulting from the appraisal of one's job (Locke & Dunnette, 1976). Facing a turbulent environment, where higher education institutions (HEIs) are in a process of transformation, faculty members find themselves ensnared between conflicting career and organizational goals (Rostan & Hohle, 2014). The core objective of HEIs is to educate students and to pursue exceptional research activities with an emphasis on basic and applied commercial needs (Rostan & Hohle, 2014). For accomplishing these targets, the academicians require freedom and decision-making power to prioritize their efforts. Therefore, the actual academic work is affected by individual and professional satisfaction of the academician (Chamorro-Premuzic, 2013).

The job satisfaction of faculty and academician is dependent of various perspectives but primarily dependent on intrinsic and extrinsic reward. Rewards are one of the key elements of any organization's policies and practices. Employee rewards can refer to all forms of financial returns and tangible services and benefits that employees receive as part of an employment relationship (Milkovich, Newman, & Milkovich, 2002). Employee's reward system includes processes of designing and implementing strategies to reward employees fairly with the goal to attract, motivate

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and retain those employees who would facilitate the realization of organizational goals (Dulebohn & Werling, 2007). An employee reward can be broadly categorized as intrinsic or extrinsic reward depending mainly on the source of origin. Intrinsic reward comes from the job itself and includes job involvement, autonomy, and growth opportunities. Extrinsic reward comes from a source outside the job, mainly by management and includes financial reward, promotions, and benefits (Mahaney & Lederer, 2006; Robbins & Coulter, 2012). Within the organization, rewards are often used as a source of reinforcing desirable employee behaviors and attitudes (e.g. commitment, satisfaction and performance) and for reducing undesirable employee's behaviors and attitudes e.g. turnover intention and absenteeism (Dulebohn & Werling, 2007; Williams, Brower, Ford, Williams, & Carraher, 2008).

The relationship between rewards and job satisfaction is primarily explored by Lawler and Porter (1966). They developed the model for elucidating the relationship between job satisfaction and rewards with moderation of perceived reward. Their model suggests that rewards have impact on job satisfaction and perceived reward moderates the relationship between job satisfaction and reward system. Further studies explained the relationship between job satisfaction and rewards such as (Aletraris, 2010; Hofmans, De Gieter, & Pepermans, 2013). However, these studies missed out the effect of economic trends (proxy by salary growth in past and expectations). Moreover, prior studies (Hofmans et al., 2013; Sell & Cleal, 2011) are based on assumption that there is a linear relationship between job satisfaction and reward while ignoring the non-linear relationship.

The present study explains the relationship between job satisfaction and reward in moderation with economic trends and also testifies that whether the relationship between JS and reward is linear or non-linear. The logit model is used for the estimation as the JS is objectified in binary manner for the clear understanding of probabilistic expected relationship. In this study the model of Lawler III and Porter (1966) is adapted for explaining the relationship between JS and intrinsic and extrinsic reward. The moderating variable in (Lawler III & Porter, 1966) model is perceived rewards. In this study the proxy for perceived reward is economic trends i.e. past economic trends and future economic which are calculated through salary growth in past (PET) and future growth expectation (FET). Research has observed that salary is one rather complex factor among others. Salary is a conditional motive that can serve as a satisfaction factor to a certain amount (Chamorro-Premuzic, 2013). The non-linear testing is based on polynomial pattern. This study identifies factors that help foster JS among faculty members of HEIs and provide a guideline to university management in designing policies that will help them attract and retain productive faculty. Moreover, in an economic situation where Pakistani currency depreciated almost 31% in 2018 (Haris, 2018) and salary stagnation in public sector organizations (A. Khan, 2018) witness negative salary growth rate (ILO, 2018). So, this study will help inform the policy makers of the HEIs regarding how past and future economic trends should be considered for faculty reward designing for their JS.

The motive behind this study is based on HEI's growth in Pakistan. In past 10 years Pakistan higher education sector has shown one of the highest growth rate in the world (Alasuutari & Qadir, 2013) while striving to eradicate the brain drain due to job dissatisafction through national and international scholarships, teachers training, increased salary packages, revised teacher's reward programs, and more (Rasheed, Aslam, & Sarwar, 2010). Such circumstances brings the focus to study the relationship between JS and reward in moderaton with economic trends proxied with salary growth.

The further section of the paper explains theoretical framing followed by theoretical framework, methdology and sample. Afterwards the genrlized model will be discused in conccurent to the estimation model. Subsequently analysis will be discussed and concluded in the last section.

2. Theoretical Framing

2.1. Intrinsic and Extrinsic Rewards and Job Satisfaction

Reward is a significant variable in determining employee's JS (Vroom, 1982). Rewards are categorized as extrinsic if they are received for performance or as an outcome of a job. It includes salary and FB, promotion or advancement opportunities within the organization, and workplace conditions (Lu, While, & Barriball, 2005). Extrinsic rewards (ER) are also critical factors that determine JS (Robbins & Coulter, 2012). Salary is an important job attribute that results in greater JS (Jurgensen, 1978). Some research even concluded that salary is the only significant predictor of JS (Sell & Cleal, 2011). Employees feel disrespected if their pay falls below an expected or the reference level that embodies workers notion of fairness (Bewley, 2009). Promotion is another form of ER that is also considered as a reward (Deckop, Jurkiewicz, & Giacalone, 2010). Workplace policies regarding availability of promotion and financial incentives, such as salary and bonus cash incentives, effect JS (Kosteas, 2011). A preferred job assignment also serves to enhance JS and, therefore, should be considered while

assigning job assignments (Ercikti, Vito, Walsh, & Higgins, 2011).

Fringe benefits stand as an important piece of employee rewards (Artz, 2010) that are positively related to JS (Uppal, 2005). Pensions often act as a predominant proxy for FB that can help add to JS (Heywood & Wei, 2006). Paid vacation and sick pay have also been observed as positive estimators of JS (Donohue & Heywood, 2004). Correspondingly, we hypothesize that ER will have a positive correlation with JS.

Hypothesis 1: Extrinsic Reward (Salary, Bonuses, Promotion, FB and PA) is positively associated with employee job satisfaction.

Intrinsic rewards (IR) increase employee's self-esteem and feeling of accomplishment (Honig-Haftel & Martin, 1993). Examples of IR include recognition, autonomy, job involvement and challenging work (Özutku, 2012). They also include status, praise from superiors and co-workers, growth opportunities, and feelings of self-esteem (Mahaney & Lederer, 2006). Employees are competent and successful at work when they believe in their own skills or autonomy that they can achieve organization goals (Liao & Lee, 2009). Many psychologist refers to it as choice and freedom (Ryan & Deci, 2006). Autonomy, task assignment, and the ability to make decisions are all trust factors that impact JS (Welsh, 2015). In view of the research observations, we hypothesize a positive relation between IR (Autonomy, job involvement and growth opportunities) and JS.

Hypothesis 2: Intrinsic Reward (Autonomy, job involvement and growth opportunities) is positively associated with employee job satisfaction.

Faculty members of HEIs are generally believed to prefer IR over ER (Siddique, Aslam, Khan, & Fatima, 2011). Money and titles are of less importance for faculty members while non-monetary rewards are rather more valuable for them (Siddique et al., 2011). Faculty of HEIs feel more JS when they have opportunity to learn new skills and knowledge, sense of being appreciated by colleagues and subordinates, and professional autonomy (McKeachie, 1997). In view of existing research, we hypothesize that IR will be more related to JS compared to ER. According to Maslow Hierarchy of need theory individual attitudes are based on their needs, if there is a deficiency in what they need than they will adopt certain behaviors that will lead then to acquire their expected needs (Maslow, 1943). Employee's physiological and safety needs can be fulfilled by ER whereas psychologists agree that social, esteem and self-actualization needs require more IRs (Flippo, 1982).

Hypothesis 3: Intrinsic rewards are a better predictor of job satisfaction than extrinsic rewards.

2.2. Economic Trends, Rewards, and Job Satisfaction

Economic trends have an impact on JS (Schultz, 2009). The content theorists (Alderfer, 1969; Herzberg, 1964; Maslow, 1943; McClelland, 1978) propose that behaviors are directed towards a particular target or objective. For example, expectancy theory states that employees look at the various alternatives and choose the alternative that lead to desirable rewards. Employees mainly follow a path of economic maximization (Vroom, 1982). According to equity theory (Adams, 1963), employees consider that they are treated fairly if the ratio of inputs to outcomes is perceived to be equivalent to other comparable employees. The employee's perception of fairness is more crucial to worker satisfaction than the actual amounts received (Zainalipour, Fini, & Mirkamali, 2010).

Mabaso and Dlamini (2017) stated that ER and IR play an important role in influencing employee's JS. With the increase in economics crisis or economic downturn, living cost of the employees raise which results in employees looking for high income jobs. In addition to that if employees feel internal or external inequity in their reward their job dissatisfaction will increase (M. S. Khan et al., 2014). Employees who anticipate better chances of making additional money on their present occupation, even in the future, are comparatively more satisfied with their present salaries than those who have little future expectations (Terpstra & Honoree, 2004). Economic trends, both past and future, can be referred to as the reference points that guide our salary and raise expectations.

According to purchasing power parity theory economic trends and reward are indirectly linked (Donoso, 2014). When purchasing power of employees declines, they seek more reward to fulfill their needs. The moderation of past economic trends and future economic trends are included based on the binary nature of the variable, to identify the economic trends. The purchasing power parity depicts the economic trends of the economy in which the workforce exists. Dietl, Franck, and Nüesch (2006) identified that the changes in economic trends are analogous to the salary structure as it efficiently depicts the economic structure. Also Quirk and Fort (1997) explained that salaries are the view picture of the economic trends. Based on these studies, this paper undertakes the salary as proxy of past and future economic trends, to explain the interaction effect of economic trends on the relationship of employee rewards. A dummy variable was used for quantification of the economic

trends reflecting the impacts of both economic upturns and economic downturns. Moreover, we used a dummy variable to represent future economic trends where the FET impact has also seen through dummy variable. This variable identifies a new technique of quantification of the economic trends and their impact on the reward. FET and PET are moderating variable that has an impact on the relation between reward and satisfaction and has a key role in reward-JS relationship. Accordingly, we hypothesize for a moderating role of economic trends in the relationship between reward and JS.

Hypothesis 4*:* Past and future economic trends moderate the relationship between HEIs faculty reward (Extrinsic and Intrinsic) and job satisfaction.

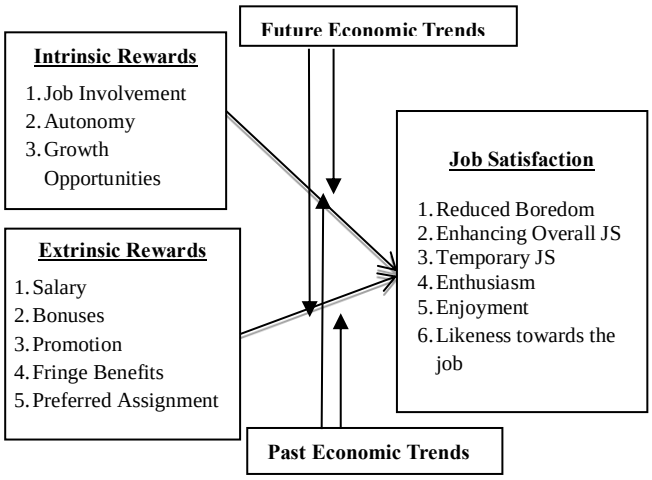

Figure 1: Research Model

3. Methodology

3.1. Sample and Procedure

The targeted population is about 10,000 faculty members distributed among 167 universities of Pakistan. Keeping in view the nature of this population, cluster sampling was seen appropriate for sampling. Almost 1800 questionnaires were sent through research associates in four major cities. Questionnaires were distributed and collected on the same day so the response rate was 95%. 1000 questionnaire were sent through email in other two provincial capitals (Quetta and Karachi) of Pakistan.

Respondents were given the time of three days to respond and after 2 days they were sending one reminder and the response rate was 45%. The respondents were 2160 faculty members (1320 men, 840 women) working in higher education institutions of Pakistan. The age of the faculty members was collected in 8 different ranges each having 5-year gap. In higher education institutions of Pakistan, faculty members are only allowed to teach undergraduate and graduate courses if they have at least 18 years of qualification. Moreover, government and institutions are emphasizing in enhancing qualification of their faculty members having MS or M.Phil degree, so, all the respondents are either having Ph.D. (46.25%) or are registered in Ph.D. programs (53.75%). We distributed our questionnaire to the employees of HEC faculty working in approved higher education institutions.

3.2. Measures

3.2.1. Job satisfaction

Job satisfaction was measured by Aryee, Fields, and Luk (1999) scale designed to measure specific aspects of an employee's satisfaction with his or her job. It was six items measure with Cronbach alpha (α = .84). Exploratory factor analysis revealed 62% of the variance measured by this scale. This variable is re valued using dichotomous scale of binary nature.

3.2.2. Employee Reward

IR was measured by 16 items from the scales of Ganzach (1998) for autonomy and Campion, Papper, and Medsker (1996) for job involvement and growth opportunities. Exploratory factor analysis revealed 58% of the variance (α=0.88). ER was measured with the De Beer (1987) scale for salary, bonus, promotion, FB and PA. We used 28 items that gave Cronbach alpha value of .92 and exploratory factor analysis revealed 59% of the variance.

3.2.3. Economic Trends

For measuring PET and FET, we took salary as a proxy for reward (all financial benefits) as a dummy variable. We used PET and FET (Past and future percentage raise in salary) as a moderating variable in ER–JS and IR– JS relationship. When growth in ER is equal to or more than the median score then the value is equal to 1 otherwise 0. This applied to both FET and PET.

3.3. Generalized Model

The logit model is adopted to probabilistic relationship between JS and reward in moderation with economics trends.

3.3.1. Logit Model

In this study, model is estimated thorough the multinomial logit model proposed by Chamberlain (1979) to examine the effect of rewards on JS in moderation with economic trend.

Logit model has been proposed by Chamberlain (1979) which was later studied by (Heckman, 1987) (Guilkey & Murphy, 1993). It is tool of econometrics which is applied on microeconomics using panel data where the dependent variable is estimated by a dichotomous response.

The logit method, also referred to as linear probability models, are a combination of multiple regression and discriminant analysis (Hosmer Jr, Lemeshow, & Sturdivant, 2013). These techniques are similar to multiple regression analysis in that one or more exploratory variables are used to predict single dependent variable. The difference is that the dependent variable in the logit model is categorical while it is metric in the regression analysis. Linear probability model (logit) are distinguished from the discriminant analysis primarily in that they accommodate all types of exploratory variables (metric and non-metric) and do not require the assumption of multivariate normality. Once the dependent variable is correctly specified and the appropriate estimation technique employed, then the basic procedures of the logit are similar to multiple regression analysis (Agresti, 2018; Hagle & Mitchell, 1992).

3.3.2. Intrinsic Reward and Job Satisfaction Model Specification

The logit models are developed based on linear probability models. The linear probability model (LPM) is based on above theoretical framework.

$$P_i(JS) = \alpha_i + \beta_1(IR) + \beta_2(PET) + \beta_3(FET) \quad (1)$$

For moderation impact the LPM is like:

$$P_i(JS) = \alpha_i + \beta_1(IR) + \beta_2(IR)(PET) + \beta_3(IR)(FET) \quad (2)$$

Where JS is job satisfaction in binary term (i.e. greater than neutral are satisfied and less than neutral are dissatisfied), IR is intrinsic reward, PET is past economic trends, FET is future economic trend, and ER is extrinsic reward.

$P_i(JS) = E(JS_i = 1 \mid IV_i)$ means respondents are satisfied. On this basis the probability of satisfied responses is as under

$$P_i(JS) = \frac{1}{e^{-(\alpha_i+\beta_1(IR)+\beta_2(PET)+\beta_3(FET))}} \quad (3)$$

Or it can be represented as

$$P_i(JS) = \frac{e^{(\alpha_i+\beta_1(IR)+\beta_2(PET)+\beta_3(FET))}}{1+e^{(\alpha_i+\beta_1(IR)+\beta_2(PET)+\beta_3(FET))}} \quad (4)$$

For moderation Impact of PET and FET n relationship of JS and IR the logit model is represented as

$$P_i(JS) = \frac{1}{e^{-(\alpha_i+\beta_1(IR)+\beta_2(IR)(PET)+\beta_3(IR)(FET))}} \quad (5)$$

Or it can be represented as

$$P_i(JS) = \frac{e^{(\alpha_i+\beta_1(IR)+\beta_2(IR)(PET)+\beta_3(IR)(FET))}}{1+e^{(\alpha_i+\beta_1(IR)+\beta_2(IR)(PET)+\beta_3(IR)(FET))}} \quad (6)$$

And the probability of dissatisfied respondents is$(1 - P_i)$. For which the probability is

$$P_i(JS) = \frac{1}{e^{(\alpha_i+\beta_1(IR)+\beta_2(IR)(PET)+\beta_3(IR)(FET))}} \quad (7)$$

The ratio of $P_i/1 - P_i$ is known as Odd Ratio, which is given as

$$\frac{P_i(JS)}{1-P_i(JS)} = e^{(\alpha_i+\beta_1(IC)+\beta_2(IC)(PET)+\beta_3(IC)(FET))} \quad (8)$$

Consider the following equation. If β_3 and β_4. The PET and FET have moderation impact on relationship of JS and IR. The equation for IR with PET and FET is:

$$P_i(JS) = \alpha_i + \beta_1(IR) + \beta_2(IR)(PET) + \beta_3(IR)(FET) \quad (9)$$

Taking derivative with respect to IR

$$\frac{\delta(P_i(JS)}{\delta(IR)} = \beta_1 + \beta_2(PET) + \beta_3(FET) \quad (10)$$

If β2 and β1 is significant then PET has moderation impact and if β1 and β3 are significant then FET has moderation impact and if all are significant then PET and FET both has moderation impact on relationship of JS and IR.

3.3.3. Extrinsic Reward and Job Satisfaction Model Specification

The logit models are developed based on linear probability models. The linear probability model (LPM) is based on above theoretical framework.

$$P_i(JS) = \alpha_i + \beta_1(ER) + \beta_2(PET) + \beta_3(FET) \quad (11)$$

For moderation impact ER the LPM is like

$$P_i(JS) = \alpha_i + \beta_1(ER) + \beta_2(ER)(PET) + \beta_3(ER)(FET) \quad (12)$$

Where $P_i(JS) = E(JS_i = 1 \mid IV_i)$ means respondents are satisfied. On this basis the probability of satisfied responses is as under

$$P_i(JS) = \frac{1}{e^{-(\alpha_i+\beta_1(ER)+\beta_2(PET)+\beta_3(FET))}} \quad (13)$$

Or it can be represented as

$$P_i(JS) = \frac{e^{(\alpha_i+\beta_1(ER)+\beta_2(PET)+\beta_3(FET))}}{1+e^{(\alpha_i+\beta_1(ER)+\beta_2(PET)+\beta_3(FET))}} \quad (14)$$

For moderation Impact of PET and FET n relationship of JS and ER the logit model is represented as

$$P_i(JS) = \frac{1}{e^{-(\alpha_i+\beta_1(ER)+\beta_2(ER)(PET)+\beta_3(ER)(FET))}} \quad (15)$$

Or it can be represented as

$$P_i(JS) = \frac{e^{(\alpha_i+\beta_1(ER)+\beta_2(ER)(PET)+\beta_3(ER)(FET))}}{1+e^{(\alpha_i+\beta_1(ER)+\beta_2(ER)(PET)+\beta_3(ER)(FET))}} \quad (16)$$

And the probability of dissatisfied respondents is$(1 - P_i)$. For which the probability is

$$P_i(JS) = \frac{1}{e^{(\alpha_i+\beta_1(ER)+\beta_2(ER)(PET)+\beta_3(ER)(FET))}} \quad (17)$$

The ratio of $P_i/1 - P_i$ is known as Odd Ratio, which is given as

$$\frac{P_i(JS)}{1-P_i(JS)} = e^{(\alpha_i+\beta_1(ER)+\beta_2(ER)(PET)+\beta_3(ER)(FET))} \quad (18)$$

Consider the following equation. If β_3 and β_4. The PET and FET have moderation impact on relationship of JS and ER. The equation for ER with PET and FET is:

$$P_i(JS) = \alpha_i + \beta_1(ER) + \beta_2(ER)(PET) + \beta_3(ER)(FET)$$

Taking derivative with respect to EC

$$\frac{\delta(P_i(JS)}{\delta(ER)} = \beta_1 + \beta_2(PET) + \beta_3(FET)$$

If β_2 and $\beta1$ is significant then PET has moderation impact and if β_1 and β_3 are significant then FET has moderation impact and if all are significant then PET and FET both has moderation impact on relationship of JS and ER.

3.3.4. Non-Linear Specification

In order to understand the non-liner specification, the polynomial model based on ER and it is developed as,

$$JS_i = \alpha + \beta_1 IR + \beta_2 IR^2 + \mu \quad (19)$$
$$JS_i = \alpha + \beta_1 ER + \beta_2 ER^2 + \mu$$

In the above equation the JS is the job satisfaction measure based on Likert scale. In nonlinear model the value of JS is discrete rather than binary in nature.

Taking derivative with respect to IR and converting in to static equation

$$\frac{\delta JS}{\delta IR} = \beta_1 + 2\beta_2 IR = 0 \quad (20)$$
$$IR = -\frac{\beta_1}{2\beta_2}$$

Taking second derivative

$$\frac{\delta JS}{\delta IR^2} = 2\beta_2 \quad (21)$$

The second derivative suggests the minimum or maximum point. Take the derivative of equation with respect to ER.

$$\frac{\delta JS}{\delta ER} = \beta_1 + 2\beta_2(ER) = 0 \quad (22)$$

$$ER = -\frac{\beta_1}{2\beta_2} \quad (23)$$

Taking second derivative

$$\frac{\delta JS}{\delta IR^2} = 2\beta_2 \quad (24)$$

The second derivative suggests the minimum or maximum point.

3.4. Sampling

The population of the target respondent is almost 10,000 faculty member that are distributed among 198 universities of Pakistan. Keeping in view the nature of Population and awareness of higher education “Cluster Sampling” is appropriate one as in different areas of Pakistan the awareness regarding higher education is different so for this study the universities that exist in the areas that have greater awareness regarding higher education is selected for the analysis. Sample that has been selected from the population is 2160 employees from 64 clusters (universities). The sample size is representative as sample size is 20% of the whole population.

4. Results

The data collected from the respondents are being estimated and tested using different models and test. The reliability of the data is tested with Cronbach Alpha then descriptive will be examined and after that logit model

results are estimated and analyzed in accordance with the objectives along with odd ratios calculation.

4.1. Reliability Statistics

According to Sekaran (2003), the closer the reliability coefficient Cronbach Alpha gets to 1.0, the better is the reliability. In general, reliability less than 0.60 are considered to be poor and as far as our reliability coefficients are concerned. The Cronbach alpha lies near to 0.8 i.e. 78.7, which shows greater reliability of data and proper distribution of data. Reliability coefficients that are over 0.80 and 0.90 are good and very good. The reliability tests of our construct happened to be in the acceptable to good and very good ranges.

4.2. Descriptive Statistics

The descriptive of the data shows the characteristics and central tendency of the variables and also provides the overview of direction of data. Results of Table 1 show descriptive statistics. The JS variable in this statistic is based on Likert scale. The mean of all variable is above 3 showing that the mean of responses is above neutral. There is least difference in mean and median. The standard deviation is less than unity showing the variation is less than single option. The JS and IR are negatively skewed and ER is positively skewed.

The kurtosis is almost normal in all the variables. The Jarque Bera results are significant in case of JS and IR showing the variables are skewed and kurtosis is high but the Jarque Bera significance is mostly because of skewness rather than kurtosis. The ER is insignificant showing the normality of kurtosis and zero skewness. The skewness is because of nonlinearity of variables. The results of descriptive statistics suggest the logistic model that address the nonlinearity and convert the nonlinearity into log odd measures.

Table 1: Descriptive Statistics

	JS	ER	IR
Mean	3.527	3.338	3.554
Median	3.670	3.220	3.670
Maximum	4.670	4.650	4.840
Minimum	1.330	2.060	1.800
Std. Dev.	0.602	0.498	0.590
Skewness	-0.962	0.274	-0.547
Kurtosis	4.322	2.732	2.896
Jarque-Bera	86.929**	5.940	19.290**

** Significance at 1% Level, * Significance at 5% Level
JS is Job satisfaction. IR is intrinsic rewards, ER is extrinsic rewards.

Table 2 shows the results of correlation coefficient. These results identify the chances of multicollinearity. All the variables are strongly correlated specifically IR and ER so both categories of rewards are highly correlated and cannot be estimated in single equation. The segregation of ER and IR in the equations is based on the results of coefficients.

Table 2: Correlation Coefficients

	IR	ER	JS
IR	1		
ER	.659**	1	
JS	.508**	.515**	1

** Significance at 1% Level, * Significance at 5% Level
JS is Job satisfaction. IR is intrinsic rewards, ER is extrinsic rewards.

4.3. Logistic Regression Results

The results of the above model are explained through logistic regression as the dependent variable is converted in to categorical variable to address the non-linearity in the relationship. The logit model is estimated along with moderation results and odd ratios that support the results of logit model.

The Table 3 shows the results of logit model. The model incorporates the two intercept binary variables that are PET and FET. Model 1 represents the relationship of IR and JS. The IR is significant ($p<0.05$) showing that IR increases the likelihood that employee is satisfied. In other words, with the increase in IR the employees will be more satisfied. The coefficient suggests the predicted change in log odd for every one unit increase in predictor. The results are similar to (Morgan, Dill, & Kalleberg, 2013; Pasarón, 2013).

In this case the change log odd ratio is positive for every one unit increase in predictor that is for every one unit increase in IR bring 1.8 unit increase in log odd of JS. The PET is positive and significant ($p<0.05$) showing that salary growth higher than median growth rate in past brings more satisfaction than salary growth lower than median. The FET is also positive and significant ($p<0.05$) in model (1) showing that expected salary growth more than median brings more JS than expected salary growth lower than median.

In Model (2) shows the results JS and ER. The ER is positive and significant ($p<0.05$) showing that ER increase the likelihood of employee being satisfied. The log odd ratio increases by 2.902 by one unit increase in ER. In other words, with the increase in ER the employee will be more satisfied. The results are consistent to (Ajmal, Bashir, Abrar, Khan, & Saqib, 2015; Morgan et al., 2013). The change log odd ratio is positive for every one unit increase in predictor that is for every one unit increase in ER brings 1.8 unit increases in log odd of JS. The PET is positive and

significant (p<0.05) showing that salary growth higher than median in past motivates the employees and employees will be more satisfied as compared to the salary growth lower than median.

Table 3: Job Satisfaction and Rewards with trend Intercepts

Variables	Model (1)	Model (2)
Constant	-7.007 [-6.306]**	-10.071 [-6.241]**
IR	1.892 [5.737]**	------
ER	------	2.902 [5.696]**
PET	2.214 [5.963]**	2.191 [5.955]**
FET	0.927 [2.129]*	1.379 [3.371]**
McFadden R-Square	0.369	0.388
Cox and Snell R-Square	0.283	0.296
Negelkerke R-Square	0.477	0.498
Sum of Square Resid	33.69647	31.206
Loglikelihood	-108.9895	-105.61
LR Statistics	127.6868**	134.44**

** Significance at 1% Level; * Significance at 5% Level

Model (1): $\mathbf{P_i(JS)} = \frac{e^{(\alpha_i+\beta_1(IR)+\beta_2(PET)+\beta_3(FET))}}{1+e^{(\alpha_i+\beta_1(IR)+\beta_2(PET)+\beta_3(FET))}}$

Model (2): $\mathbf{P_i(JS)} = \frac{e^{(\alpha_i+\beta_1(ER)+\beta_2(PET)+\beta_3(FET))}}{1+e^{(\alpha_i+\beta_1(ER)+\beta_2(PET)+\beta_3(FET))}}$

Job satisfaction (JS) is dependent variable with binary pattern. IR is intrinsic reward, ER is extrinsic reward, PET is past economic trends proxied by past salary growth and FET is Future economic trends proxied by expected salary growth. The method is Method: ML - Binary Logit (Newton-Raphson / Marquardt steps)

The FET is also positive and significant (p<0.05) suggesting that expected salary growth greater then median bring more satisfaction to employee's attitudes then expected salary growth lower than median. The McFadden, Cox and Snell, and Negelkerke all suggest the greater fitness of the model. The significance of LR statistics shows the fitness of the model.

Table 4 shows the results of Odd ratio. The odd ratio attempts to quantify the association of JS and reward. If odd ratio is greater than unity then presence of reward raises the odds of JS. The odd ratio depicts that for every one unit increase in reward the odd of JS changes by certain factor. The model (1) odd ratio shows IR odd ratio of 6.616, which suggest that the odd of JS would increase by 6.616 times for every unit increase in IR. Likewise, in model (2) the odd ratio of IR suggests that the odd of JS increases by 18.221 times for every unit increase in ER.

These results suggest that JS is more sensitive to ER then IR. These results are consistent to (Bozeman & Gaughan, 2011; Morgan et al., 2013). The PET and FET has also Odd ration greater than unity showing the increased factor for JS. The economic trends in term of salary growth always bring JS.

Table 4: Odd Ratio

Variables	Model (1)	Model (2)
	Exponential β	**Exponential β**
IR	6.616	------
ER	------	18.221
PET	9.149	8.962
FET	2.53	3.979
Omnibus Test of Model Coefficient		
Chi Square	127.618**	134.438**
Hosmer-Lemeshow Test		
Chi Square	10.865	9.21

** Significance at 1% Level; * Significance at 5% Level
Job satisfaction (JS) is dependent variable with binary pattern. IR is intrinsic reward, ER is extrinsic reward, PET is past economic trends proxied by past salary growth and FET is future economic trends proxied by expected salary growth.

Table 5 shows the results of logit with moderation of PET and FET. Model (1) shows the results of ER and JS with moderation. The ER is positive and significant (p<0.05) which shows that with the increase in ER the employees are more likely to be satisfied. In other words, the log odd of JS increases for every unit increase in ER. The interaction term of ER and PET is positive ad significant (p<0.05) which suggest that if ER increases with above median past salary growth then employees are more likely to be satisfied then employees with lower then median salary growth. Similarly, the interaction term of FET and ER is positive ad significant (p<0.05) suggesting that if ER increases with the above median expected salary growth then employees are likely to be more satisfied.

Model (2) shows the results of JS and IR with moderation. The IR is positive and significant (p<0.05) which suggest that with the increase in IR the employees are more likely to be satisfied. The interaction term of IR and PET is positive and significant (p<0.05) which elucidate that if IR increases with upper median salary growth then employees are more satisfied. The results are consistent with (Aletraris, 2010; Spagnoli, Caetano, & Santos, 2012).

The interaction term of IR and FET is positive and significant p<0.05) which means that if IR increases with above median expected salary growth then employees are more likely to be satisfied. McFadden R-Square, Negelkerke, and Cox and Snell all depicts significant coefficient showing fitness of the model. The LR statistics shows fitness of the model.

Table 5: Job Satisfaction and Reward with Trend Moderation

Variables	Model (1)	Model (2)
Constant	-7.615 [-4.939]**	-5.071 [-4.757]**
IR	------	1.26 [3.511]**
ER	2.119 [4.12]**	------
IR*PET	------	0.71 [6.36]**
IR*FET	------	0.314 [2.28]*
ER*PET	0.681 [5.733]**	------
ER*FET	0.458 [3.456]**	------
McFadden R-Square	0.38	0.383
Cox and Snell R-Square	0.285	0.288
Negelkerke R-Square	0.479	0.485
Sum of Square Resid	31.746	33.021
Loglikelihood	-107.045	-106.636
LR Statistics	131.575**	132.39**

** Significance at 1% Level; * Significance at 5% Level

Model (1): $\mathbf{P_i(JS)} = \frac{\mathbf{e}^{(\alpha_i+\beta_1(\mathbf{IR})+\beta_2(\mathbf{IR})(\mathbf{PET})+\beta_3(\mathbf{IR})(\mathbf{FET}))}}{\mathbf{1+e}^{(\alpha_i+\beta_1(\mathbf{IR})+\beta_2(\mathbf{IR})(\mathbf{PET})+\beta_3(\mathbf{IR})(\mathbf{FET}))}}$

Model (2): $\mathbf{P_i(JS)} = \frac{\mathbf{e}^{(\alpha_i+\beta_1(\mathbf{ER})+\beta_2(\mathbf{ER})(\mathbf{PET})+\beta_3(\mathbf{ER})(\mathbf{FET}))}}{\mathbf{1+e}^{(\alpha_i+\beta_1(\mathbf{ER})+\beta_2(\mathbf{ER})(\mathbf{PET})+\beta_3(\mathbf{ER})(\mathbf{FET}))}}$

Job satisfaction (JS) is dependent variable with binary pattern. IR is intrinsic reward, ER is extrinsic reward, PET is past economic trends proxied by past salary growth and FET is Future economic trends proxied by expected salary growth. The method is Method: ML - Binary Logit (Newton-Raphson/Marquardt steps)

Table 6 shows the Odd ration results. In model (1) the odd ratio of all variables is greater than unity. The odd ratio of ER is 8.703 which suggest that the odds of JS increases by 8.703 times with unit increase in ER. Similarly, in model (2) the odd ratio of all variables is greater than unity. The odd ratio of IR is 3.85 which elucidates that the odd of JS increases by 3.85 times by unit increase in IR. The sensitivity of ER is greater than IR such as aspect is also seen in the previous studies (Bozeman & Gaughan, 2011; Morgan et al., 2013; Pasarón, 2013).

Table 7 shows the results of nonlinear models. The purpose of this estimation is to point out the nonlinearity in the relationship of JS and reward. In Table 4 the results of nonlinear model are depicted. In model (1) the IR and second order of IR both are significant (p<0.05) suggesting that the relationship between JS and IR is nonlinear. The first order condition of IR is positively significant showing the positive association of IR with JS. Whereas, the second order condition is negatively significant showing that inverse movement of the variables and depict the nonlinearity of relationship. he second derivative of model (1) is negative showing that with the increase in IR the JS increases but this relationship is getting weaker and weaker over the increase in IR. The marginal change is 5.175 that is almost 5 suggesting that JS will be maximum at 5 units (Likert extreme value) of IR.

Table 6: Odd Ratio

Variables	Model (1)	Model (2)
	Exponential β	Exponential β
IR	-----	3.857
ER	8.703	-----
IR*PET	-----	2.044
IR*FET	-----	1.274
ER*PET	1.992	-----
ER*FET	1.475	-----
Omnibus Test of Model Coefficient		
Chi Square	130.243**	128.252**
Hosmer-Lemeshow Test		
Chi Square	8.069	16.562

** Significance at 1% Level; * Significance at 5% Level
Job satisfaction (JS) is dependent variable with binary pattern. IR is intrinsic reward, ER is extrinsic reward, PET is past economic trends proxied by past salary growth and FET is future economic trends proxied by expected salary growth.

Prior studies (Alkhaliel, 2013; Gregory, Albritton, & Osmonbekov, 2010) assumed linear relationship for estimation which leads to inefficiency of the model. In model (2) the impact of ER and second order of ER is used as regressor to estimate JS. The ER is significant and positive (p<0.05) showing that ER increases JS. However, the second order of Extrinsic reward (ER) is negatively significant (p<0.05) showing the inverse movement of variables depicting linear property of the relationship.

Table 7: Nonlinear and Marginal Results

Variables	Model (1)	Model (2)
Constant	0.054 [0.079]	-0.759 [-0.798]
IR	1.511 [3.685]**	------
ER	------	1.947 [3.456]**
IR²	-0.146 [-2.435]*	------
ER²	------	-0.194 [-2.36]*
R-Square	0.269	0.276
Sum of Square Resid	101.047	100.1
Loglikelihood Ratio	-288.28	-286.488
F Statistics	70.230**	72.69**
Durbin Watson Stat	1.658	1.56
Marginal Effect $\frac{\beta_1}{2\beta_2}$	5.175	5.018

** Significance at 1% Level; * Significance at 5% Level

Model (1): $\boldsymbol{JS_i = \alpha + \beta_1 IR + \beta_2 IR^2 + \mu}$
Model (2): $\boldsymbol{JS_i = \alpha + \beta_1 ER + \beta_2 ER^2 + \mu}$

Job satisfaction (JS) is dependent variable with binary pattern. IR is intrinsic reward, ER is extrinsic reward.

The second derivative of the model (2) is also negative showing that with increase in reward the JS increases but this relationship fades with the further increase in IR. The marginal effect is almost 5 showing that the JS is maximum at ER of 5 unit (Likert extreme value). Prior studies (Bentley et al., 2012; Malik, Danish, & Munir, 2012; Terera & Ngirande, 2014) assumed linear relationship for estimation which leads to inefficiency of the model.

The R-square of model (1) and model (2) is 27% showing that 27% variations in JS is explained by respective reward. The F-stat is significant ($p<0.05$) showing the goodness of fit of model. The Durbin Watson stat shows no autocorrelation among variables. In overall it is seen that the relationship of JS and reward is nonlinear in nature.

5. Conclusion

The purpose of this study is to investigate and describe the relationship existing between JS and employee reward of a sample of universities which are recognized by HEC. This study not only document the impact of IR and ER on JS but also explore the moderating effect of industrial past and future economic trends by using salary as a proxy measure. Moreover, this study also identifies whether the relationship of JS and reward is linear or nonlinear as prior studies (Aletraris, 2010; Bozeman & Gaughan, 2011; Hofmans et al., 2013; Morgan et al., 2013) always assumed linear relationship while ignoring nonlinear pattern which leads to inefficiency of the model. This study also explains the relationship between economic trends (using salary as proxy measure), ER and IR of employees and JS in Higher Education Institutions of Pakistan.

The results of the study show that there is concrete relation between JS and ER and IR. Moreover, the past economic trends and future economic trends moderates the relationship of JS and reward. The PET and FET magnify the impact of IR on JS. The results also identify a robust relationship between ER and JS and relationship magnifies with PET and FET moderation. In other words, PET and FET moderate the relationship of JS and reward. It is also seen that the relationship between JS and reward is nonlinear contrary to studies (Mabaso & Dlamini, 2017; Terera & Ngirande, 2014; Welsh, 2015) and the relationship diminishes with increasing reward.

This study has major implication for future body of knowledge as this study brings new paradigm of nonlinearity among the relationship of JS and reward which paved a new insight for the further research. Moreover, this study has implication to higher education in terms of employee retention as the adjusting the rewards with economic trends may increase JS and may improve employee retention rate in higher education sector.

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