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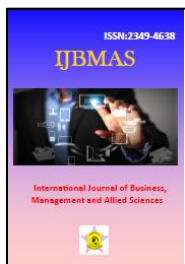
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A STUDY ON RELATIONSHIP BETWEEN ENGAGEMENT, PERFORMANCE AND JOB SATISFACTION OF FACULTY MENBERS WORKING IN SELF FINANCING ENGINEERING COLLEGES IN NAMAKKAL DISTRICT

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ABSTRACT

The Relationship between engagement, performance and job satisfaction of faculty members workingin self-financing engineering college were studied using suitable tools namely factor analysis and SEM. The primary data were collected from 506 faculty members (Assistant Professor, Associate Professor and Professor) using a well structured questionnaire.Based on the research finding, it is suggested that in order to improve the engagement, performance and job satisfaction of the teachers, both management of the institution and the teachers may take necessary steps willingly. Engaged employee thinks positively about the organization, acts in a proactive manner and work with zeal to enhance the image of the institution.

Keywords: Engagement, Performance, Job Satisfaction, Faculty Members, Self – Financing Engineering College.

1. INTRODUCTION

Engagement is utmost closely associated with existing construction of job involvement (Brown 1996). Job involvement is defined as "the degree to which the job situation is central to the person and his or her identity (Lawler & Hall, 1970). Kanungo (1982) maintained that job involvement is a "Cognitive or belief state of psychological identification". Job involvement is thought to depend on both need saliency and the potential of a job to satisfy these needs. Thus job involvement results from a cognitive judgment about the needs satisfying abilities of the job. Jobs in this view are tied to one's self image. Furthermore, engagement entails the active use of emotions. Finally engagement may be thought of as an antecedent to job involvement in that individuals who experience deep engagement in their roles should come to identify with their jobs. When Kahn talked about employee engagement he has given importance to all three aspects physically, cognitively and emotionally. Whereas in job satisfaction more importance is given to cognitive side.

2. SIGNIFICANCE OF THE STUDY

Engaged employees care about the future of the institution and are loyal to the institution. Engaged employees will stay with the institution, perform better and become committed to their institution. They form an emotional attachment with their institution, develop a positive attitude towards their institution and provide customer satisfaction (Parent and Student Satisfaction). The concept of employee engagement was developed by Kahn (1990) in his ethnographic work on summer camp employees and also employees at an architecture firm. Engaged employees express themselves physically, cognitively and emotionally while performing various roles. They act as the drivers of financial and market success (Sarangi, 2012). Employee engagement is the driver which can help in obtaining quality outputs, improved performance, employee participation and increased level of motivation. Engaged employee thinks positively about organization, feels for the organization and is proactive in achieving the organizational goals (Cook, 2008).

3. STATEMENT OF THE PROBLEM

Employee engagement has received a great deal of attention in the last ten years. It has been treated as the key to an organization's success and competitiveness. Indeed, Schaufeli and Salanov (2007)claim that engagement is "essential" for contemporary organizations given the many challenges they face (P.156) and Macey et al. (2009) argue that organizations can gain a competitive advantage through employee engagement. Numerous writers have emphasized that engagement is a key driver of individual attitudes, behaviour and performance as well as organizational performance, productivity, retention, financial performance and even shareholder return (Bates, 2004; Baumruk, 2004; Harter, Schmidt and Hayes, 2002; Richman, 2006). Infact, Maceyet. al (2009) have shown that among a sample of 65 firms in different industries, the top 25% on an engagement index had a greater Return on Assets (ROA), profitability and more than double the shareholder value compared to the bottom 25%. However, it has also been reported that employee engagement is on the decline and there is a deepening disengagement among employees today (Bates, 2004; Richman, 2006). For example, roughly half of all Americans in the workforce are not fully engaged or they are disengaged leading to what has been referred to as an "engagement gap" that is costing U.S. businesses $ 300 billion a year in lost productivity (Bates, 2004; Johnson, 2004; Kowalski, 2003). Given the importance of employee engagement to organizations, combined with the deepening disengagement among workers today, a key issue is how to promote the engagement of employees. As noted by May, Gilson and Harter (2004), "engagement is important for managers to cultivate, given that disengagement or alienation is central to the problem of workers' lack of commitment and motivation" (P.13).

This study will address the following pertinent questions with respect to faculty engagement:

1. What are the factors influencing employee (Faculty) engagement?
2. How to measure the employee engagement of faculty members working in self -financing engineering colleges in Namakkal district?
3. What are the factors contributing to faculty members' job satisfaction?
4. How to evaluate the faculty members' performance with respect to academic activities administration, R&D and community service?
5. What are the ways and means to improve faculty engagement?

The above questions not only help identify the existing level of faculty engagement and pin point the engagement gap, they also provide ways and means (strategies) for enhancing employee (Faculty members) engagement among male and female teachers in general and Professors, Associate Professors and Assistant Professors in particular.

4. OBJECTIVE OF THE STUDY

The primary objective of the study is to ascertain the relationship between teachers level of engagement, performance and job satisfaction those who are working in self-financing engineering colleges located in Namakkal District, Tamilnadu.

5. RESEARCH METHODOLOGY

The research methods for the study consists of nature of the study, nature of the data, data collection instrument including application of reliability and validity tests such as Cronbach's alpha test, split – half test, confirmatory factor analysis (CFA), content validity and construct validity, determination of sample size, sampling procedure, hypotheses and framework of data analysis.

5.1 Nature of the Study

The study is mainly intended to relationship between teacher's level of engagement, performance and job satisfaction Therefore, the research design used for the research programme is descriptive and analytical in nature.

5.2 Nature of the Data

Both the primary and secondary data were extensively used in this study. The primary data were collected from faculty members of engineering colleges in Namakkal district. A well structured questionnaire was used to collect primary data from faculty members in the above district.

5.3 Data Collection Instrument

In accordance with the statement of the problem and objectives of the study, the questions were prepared to design the questionnaire. The variables identified from review of literature were taken into account while designing the questionnaire. The opinion from a panel of members comprising experts in the field of education, psychology, management and statistics was sought for at every stage of framing the final questionnaire.

Reliability Test for Data Collection Instrument

Reliability means to the extent to which a scale produces consistent results when measurements are made repeatedly. Reliability is a major concern when psychological test is used to measure some attributes or behaviour. The internal consistency test, namely inter item consistency reliability and the split-half reliability, is applied to test the reliability of the data collection instrument which is estimated using Cronbach's alpha. Cronbach's alpha indicates that reliabilities which are less than 0.60 are considered to be poor, while those in the 0.70 range are acceptable and those more than 0.80 are considered to be good.

It is learn that Cronbach's Alpha reliability is 0.964 which means that the variables produce consistent results if measurements are made repeatedly.

The alpha values for Part I (0.930) and Part II (0.927) of the randomly selected respondents are more than 0.6 and the correlation between Part I and Part II is also highly significant. It represents the good internal consistency among the data.

Confirmatory Factor Analysis (CFA): It is a visual representation which specifies the model's constructs, indicator variables, and interrelationships. CFA provides quantitative measures which will measure the reliability and validity of the constructs or theoretical model.

The calculated P value for all the factors is more than 0.050 which represents that the model is perfectly fit. Here GFI Goodness of Fit Index (GFI) value (0.946) Adjusted Goodness of Fit Index (AGFI) value (0.959) is greater than 0.9 which represents that it is a good fit model. The calculated Comparative Fit Index (CFI) value (0.987) is close to 1 which means that it is a perfectly fit model and

also it is found that Root Mean Square Residuals (RMR) value (0.046) and Root Mean Square Error of Approximation (RMSEA) values (0.071) is less than 0.10 which represents that it is a good fit model.

Validity Test for Data Collection Instrument

Validity refers to how well a test measures what it is purported to measure. In order to assess the validity of the data collection instrument, content validity and construct validity were applied.

5.4 Sample Size Determination

$$n= \frac{Z\alpha^2/2 \ .p.q.N}{e^2 (N-1) +Z\alpha^2 /2.p.q}$$

Where,

e   = 0.02 (Since the estimate should be within 2% of true value):

$Z\alpha^2$ = 2.005 (as per table of area under normal curve for the given confidence level of 95.5%)

P   = 0.02 (as per the pilot study)

(i) Determination of Sample Size for Professors:

$$= \frac{4.020 \ (.02) \ (1-.02) \ (542)}{(0.02)^2 \ (542 - 1) + (2.005)^2 \ (.02) \ (1-.02)}$$

$$= \frac{42.7052}{0.2164+0.0787}$$

$$= \frac{42.7052}{0.2951}$$

n = 144

(ii) Determination of Sample Size for Associate Professors:

$$= \frac{4.020 \ (.02) \ (1-.02) \ (1400)}{(0.02)^2 \ (1400 - 1) + (2.005)^2 \ (.02) \ (1-.02)}$$

$$= \frac{110.3088}{0.5596+0.0787}$$

$$= \frac{110.3088}{0.6383}$$

n = 173

(iii) Determination of Sample Size for Assistant Professors:

$$= \frac{4.020 \ (.02) \ (1-.02) \ (4406)}{(0.02)^2 \ (4406 - 1) + (2.005)^2 \ (.02) \ (1-.02)}$$

$$= \frac{347.157}{17762+0.0787}$$

$$= \frac{347.157}{1.8407}$$

n = 189

5.5 Sampling Procedure

The faculty members who have been working in various engineering colleges of Namakkal district represent the population for the study. The sample respondents from the above district have been selected by adopting stratified random sampling procedure.

On the basis of sample size determination, 144 professors, 173 associate professors and 189 assistant professors respectively were chosen from the 15 engineering colleges of the above district.

Table 1: Selection of Sample Respondents

Sl. No	Faculty Designation	Population Size	Sample Size
1.	Professor	542	144
2.	Associate Professor	1400	173
3.	Assistant Professor	4406	189
	Total	6348	506

[Source: Primary Data]

Out of 41 engineering institutions in the study area 15 institutions were chosen on the basis of lot system. Out of 542, 1400 and 4406 professors, associate professors and assistant professors respectively, 144,173 and 189 sample respondents were selected on the basis of convenience sampling method as given in the following table.

Table 2: Institution and Faculty Calculation

Sl.No	Name of the Institutions	Professors	Associate Professors	Assistant Professors	Total
1.	CMS College of Engineering	10	12	13	35
2.	Gnanamani College of Technology	10	12	13	35
3.	J.K.K. Natraja College of Engg& Tech.	10	12	13	35
4.	KSR Institute of Engg& Tech	10	12	13	35
5.	King College of Technology	10	12	13	35
6.	Mahindra Engineering College (Autonomous)	10	12	13	35
7.	Mahindra Institute of Engg. & Tech.	10	12	13	35
8.	Muthyammal Engineering College (Autonomous)	10	11	13	34
9.	Muthyammal College of Engineering	10	11	13	34
10.	Paavai College of Engineering	9	11	12	32
11.	Paavai Engineering College (Autonomous)	9	11	12	32
12.	Selvam College of Technology`	9	11	12	32
13.	Sengunthar Engineering College	9	11	12	32

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14.	VidyaaVikas College of Engg& Tech	9	11	12	32
15.	Vivekanandha College of Engineering for Women (Autonomous)	9	11	12	32
	Total	144	173	189	506

[Source: Primary Data]

The total population size is 6348. Out of which 506 respondents were selected using a suitable formula which is clearly explained in the area of sample size determination. All the teachers do not belong to homogeneous group. They differ from each other with respect to nature of jobs, duties and responsibilities. Considering the nature of heterogeneity, the total number of teachers were classified into three homogeneous groups namely, Professors, Associate Professors and Assistant Professors as these nomenclatures are stated by University Grants Commission (UGC) and All India Council for Technical Education (AICTE). Thus, the following methods were used in this study for selection of homogeneous groups, selection of sample institutions and sample respondents.

i. Stratified sampling procedure was applied to divide the total population into three homogeneous sub groups stratum 1 (Professors), Stratum 2 (Associate Professors) and Stratum 3 (Assistant Professors).
ii. A lot system was adopted to select the 15 sample institutions from the population size of 41 (which are listed in the annexure).
iii. Quota sampling method was used to select the sample respondents from the different strata (i.e., 144 Professors from first stratum, 173 Associate Professors from second stratum and 189 Assistant Professors from third stratum.

6. LIMITATIONS OF THE STUDY

1. The study is restricted to select independent variables only.
2. The study is confined to engineering institutions of Namakkal district only. Arts and science colleges, medical colleges, para-medical colleges and polytechnic colleges are excluded from the study.

7. DATA ANALYSIS

The relationship between employee (Teachers') engagement, teachers' performance and their job satisfaction is studied using Structural Equation Modelling (SEM). The SEM will help to study the impact of employee (Teachers') engagement on teachers' performance and in turn teachers' performance on their job satisfaction.
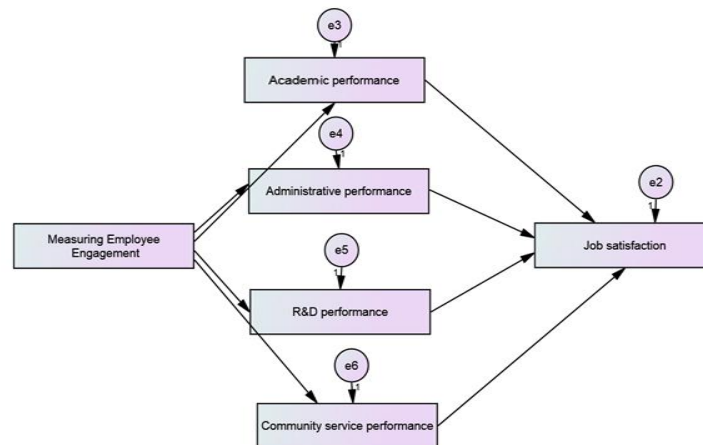
Structural Equation Modelling (SEM)

Structural Equation Modelling implies a structure for Equation Modelling (SEM). It is used to test the hypothesis about the dimensionality of and relationship the co - variance between observed variables and accordingly it is sometimes called co - variance structure modelling. SEM is a powerful alternative to other multi – variance techniques, which are limited to representing only a single relationship between the dependent and independent variables.

Hypotheses

1. There is a positive impact of teachers' engagement on their performance (Academic performance, administrative performance, R&D performance and community service performance).
2. There is a positive impact of teachers' performance on their job satisfaction.

The following figure represents the hypothetical model which is developed for testing the above hypothesis.

Figure 1: Relationship between Teachers' Engagement, Performance and Job Satisfaction

Validity of the Measurement

Structural Equation Modelling the Confirmatory Factor Model is imposed on the data. In this case the purpose of structural equation modelling is twofold. First, it aims to obtain estimates of the parameters of the model, i.e., the factor loading, the variance and co-variance of the observed variables. The second purpose is to assess the fit of the model, i.e., to assess whether the model itself provides a good fit to the data. The ability of SEM is to produce a meaningful identification of the correlation between factors which is a key strength.

In order to obtain non – standardized and standardized regression weights, a variance estimate for the residual errors and the squared multiple correlation of the dependent namely "Teachers' job satisfaction" are calculated. In this case, the calculated value of chi – square is 92.253 on 7 degrees of freedom, which gives a P – value of 0.523 and this model is a good fit for the analysis. The real strength of SEM is to estimate more complicated models, with intervening variance between the independent and dependent variables and latent factor as well.

Table 3: Maximum Likelihood Estimates

Measured Variables		Latent Variables	Estimates	SE	CR	P
Employee Engagement	←	Academic Performance	.277	.036	7.797	***
Employee Engagement	←	Administrative Performance	.180	.036	5.050	***
Employee Engagement	←	R&D Performance	.288	.036	8.031	***
Employee Engagement	←	Community Service Performance	.435	.036	12.154	***
Academic Performance	←	Job Satisfaction	.133	.041	3.260	.001
Administrative Performance	←	Job Satisfaction	.182	.042	4.344	***
R&D Performance	←	Job Satisfaction	.218	.038	5.717	***
Community Service Performance	←	Job Satisfaction	.218	.040	5.406	***

[Source: Primary Data]

Table 3 shows the regression co–efficient of the exogenous variables. It is noted that the critical ratio of above variables excluding academic performance on job satisfaction is above the table value and it is significant at 1 percent level. The variable namely "Academic performance" on job satisfaction is significant at 5% level. It is found from the analysis that teachers' engagement has significant influence on academic performance, administrative performance, R&D performance and community service performance and in turn these four variables have significant influence on their job satisfaction.

Model Fit Summary – CMIN

The following table presents the CMIN for the "default model". A significant chi-Square indicates satisfactory model fit.

Table 4: Model Fit Summary – CMIN

Model	NPAR	CMIN	df	P	CMIN/df
Default Model	14	92.253	7	0.052	13.179
Saturated Model	21	.000	0		
Independence Model	6	498.366	15	0.000	33.224

[Source: Primary Data]

Table 4 shows that CMIN is a chi-square statistics comparing the default model and the independence model with the saturated model. The default model has been associated at 13.179 percent with saturated model and other side, the independence model has been associated at 33.224 percent with saturated model.

Root Mean Residual and Goodness – of – Fit Index

Root Mean Square Error of Approximation is the popular measure of fit, because it does not require comparison with the null model. It is one of the fit indexes less affected by sample size. It is a good model fit if RMSEA is less than or equal to 0.08 (Hair etal).

Table 5: Root Mean Square Residual (RMR) and Goodness of Fit Index (GFI)

Model	RMR	GFI	AGFI	PGFI
Default Model	.079	.941	.824	.314
Saturated Model	.000	.000		
Independence Model	.264	.690	.566	.493

[Source: Primary Data]

Table 5 depicts that the model is a good fit by the influence of RMR value 0.079. Goodness-of-Fit Index (GFI) refers to a fact that 94.1% has been fitted in default model for the proportion of variance, co-variance matrix and on the other hand, 69% has been fitted in independence model.

Baseline Comparisons

The Normed Fit Index (NFI) also known as Δ1 was developed as an alternative to CFI. Comparative Fit Index (CFI) is also known as the Bentler Comparative Fit Index which compares the existing model fit with the null model which assumes that the latent variable correlates with independent variables.

It is noted from table 6 that the evidence of NFI (0.815) and CFI (0.824) is greater than 0.8. It means the latent variable namely "Teachers' Job satisfaction" correlates with independent variables. The value of NFI, RFI, IFI, TLI and CFI for independence model is 0.000.

Table 6: Baseline Comparisons

Model	NFI Delta1	RFI Rho1	IFI Delta 2	TLI Rho 2	CFI
Default Model	.815	.603	.826	.622	.824
Saturated Model	1.000		1.000		
Independence Model	.000	.000	.000	.000	.000

[Source: Primary Data]

Root Mean Square Error of Approximation

Root Mean Square Error of Approximation is the popular measure of fit, because it does not require comparison with the null model. It is one of the fit indexes less affected by sample size. It is a good model fit if RMSEA is less than or equal to 0.08 (Hair etal).

Table 7: Root Mean Square Error of Approximation

Model	RMSEA	LOGO	H190	PCLOSE
Default Model	.072	.127	.184	.000
Independence Model	.252	.233	.271	.000

[Source: Primary Data]

It is found from table 7 that the RMSEA value is 0.072 which means the calculated value is less than 0.08 and the model has resulted as good fit.

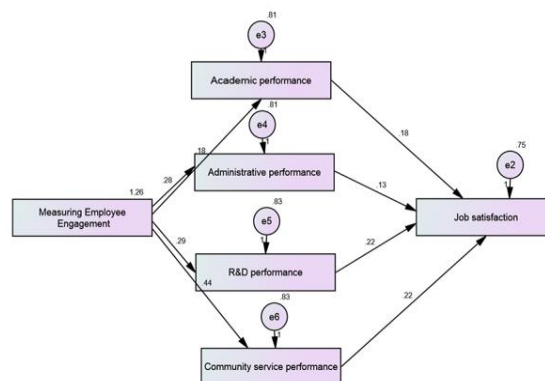The following SEM is used to prove the framed hypothesis.

Figure 2: Relationship between Engagement, Performance and Job Satisfaction

Testing of Hypothesis

The following table represents the results of the testing of the hypotheses.

It is observed from the Structural Equation Modelling that the measured variables namely "Engagement" with latent variables namely "Academic performance, Administrative performance, R&D performance and Community service performance has positive relationship and also significant at 1 percent level. It is also observed from the SEM analysis that these four variables (Measured Variables) with job satisfaction (Latent Variable) have significant positive relationship. It is found from the above table that hypothetical positive relationship between measured variable (Engagement)

and latent variable (Performance) in one angle and measured variables (Various Performances) and latent variable (Job Satisfaction) in another angle is identified and proved with the help of SEM.

Table 8: Testing of Hypothesis

Sl.No	Hypotheses	Hypothetical Relationship	Results
1.	There is a positive impact of engagement and academic performance.	Positive	Confirmed
2.	There is a positive impact of engagement and administrative performance.	Positive	Confirmed
3.	There is a positive impact of engagement and R&D performance.	Positive	Confirmed
4.	There is a positive impact of engagement and community service performance.	Positive	Confirmed
5.	There is a positive impact of academic performance and job satisfaction.	Positive	Confirmed
6.	There is a positive impact of administrative performance and job satisfaction.	Positive	Confirmed
7.	There is a positive impact of R&D performance and job satisfaction.	Positive	Confirmed
8.	There is a positive impact of community service performance and job satisfaction.	Positive	Confirmed

[Source: Primary Data]

8.   FINDINGS

It is evinced from the Structural Equation Modelling that the measured variables namely "Engagement" with latent variables namely, "Academic performance, Administrative performance, R&D performance and Community Service performance has significant positive relationship. In turn, these four variables (Measured Variables) and job satisfaction" (Latent Variable) have significant positive relationship.

9.   CONCLUSION

It is evinced from the data analysis that in order to increase the engagement, improve job performance and job satisfaction of the teachers, both managements of the institutions and the teachers may take necessary steps willingly. The engineering colleges of this district may install suitable model for measuring Teachers' engagement preferably going for Gallup's Q12 teachers' engagement measurement which can help evaluate the teachers' four performance dimensions namely academic, administrative, R&D and community service performance absolutely. After the evaluation of teachers' performance with respect to the above four dimensions, the institutions may concentrate on teachers' job satisfaction. The level of teachers' job satisfaction has to be assessed periodically and the reasons for low level of satisfaction have to be found out. The managements of the institutions may take concerted efforts to enhance the level of job satisfaction among the male teachers, married teachers, M.Phil degree holding teachers, assistant professors, professors, teachers with below 50 years and teachers working with autonomous institutions.

The teachers should be aware of the knowledge of employee engagement measurement process fully and clearly. Teachers have to understand and accept the importance of engagement for

better job performance and job satisfaction. Intimating students' performance to their parents, working in examination wing, training the students on the knowledge of copy rights and patents and extending their contribution to maintain the campus with green environment are important duties of the teachers towards improving their performance. The teachers should attend the required short term training programmes which will help embrace the job contents and working conditions. The short term training programmes will be also helpful to find out the factors that influence the employee engagement and to know and follow the suitable strategies for enhancing teachers' engagement.

Employee engagement is the key driver which can help in obtaining quality outputs i.e., improved performance in the four specified areas, employee participation and increased level of motivation. Engaged employee thinks positively about the organization, acts in a proactive manner and works with zeal to enhance the image of the institutions. Thus, engaged employees care about the future of the institution and are loyal to the institution. They will stay with the institution for a longer period, perform well and become committed to their institution. Engaged employees express themselves physically, cognitively and emotionally while performing in various roles. Consequently, engaged employees perform well towards the development of students and institutions through identifying factors influencing employee engagement, evolving suitable engagement measurement process and formulating an appropriate strategies for employee engagement.

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