

## **DO INTRINSIC MOTIVATION INFLUENCE TURNOVER INTENTION? STRUCTURAL EQUATION MODELLING APPROACH AMONG TECHNICAL FACULTY MEMBERS**

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### **ABSTRACT**

This study identifies various antecedents of intrinsic motivation and examines their impact on turnover intention of faculty members of technical education institutes of India. An instrument was developed with 18 items using 'Turnover Intention Scale' of Donnelly and Ivancevich (1985) for turnover intention as endogenous variable and Intrinsic Motivation Inventory (IMI) of Ryan (1982) for intrinsic motivation as exogenous variable. Questionnaire was designed and administered online to collect data from sample of 305 faculty members. The Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA) and Structure Equation Modelling (SEM) techniques were utilized to analyze the data and test the hypothesis. The results of the study depict that only two antecedents i.e. Interest/Enjoyment and Effort/Importance have direct significant impact on intrinsic motivation, whereas intrinsic motivation has inverse significant impact on turnover intention. This study suggests appropriate strategies to technical education institutes of India for enhancement of intrinsic motivation among faculty members, which further leads to increased retention.

**KEYWORDS:** Faculty Members, Intrinsic Motivation, Technical Education Institutes, Turnover Intention, Structural Equation Modelling, Confirmatory Factor Analysis

### **INTRODUCTION**

One of the most critical phenomenon, now-a-days frequently highlighted and is of great concern is employee turnover because of its deleterious consequence on organizational success (Morrow & McElroy, 2007). The problem of faculty turnover has immensely affected the education industry and is considered as the biggest drawback for the technical education institutes due to its negative influences on teaching and learning process (Cotton & Tuttle, 1986; Abelson, 1987; Morrow & McElroy, 2007). In education system, the issue of turnover intention of faculty members has been major focus as it affects the quality of education (Crossman & Harris, 2006).

The success of any technical education institute is a function of its ability to attract and retain competent and satisfied faculty members into its employment. The cost and consequences of faculty members' turnover are huge as human resources with knowledge and competences are the key assets. Moreover, it affects the academic and research activities of the institute. The consequences of quitting in the mid of semester by faculty member, are very outrageous, as it is difficult for both the institute to arrange the substitute faculty and student to adjust/accept new faculty in the mid of the course. Therefore, it is important to identify and study the factors affecting their turnover.

There are various factors responsible for high turnover. Compensation along with other employee benefits are the two major professional reasons for the faculty members to leave the institute, whereas job security is another additional factor in case of private institutes. These factors have been highlighted and studied by the researches. Apart from this, there

are various other factors, which may be significant and important to consider for minimizing the turnover. Therefore, it becomes essential for the organization to identify the factors affecting turnover intentions, which compel faculty members to leave the organization. These factors may be either at individual level or organizational level. One of the important individual factor is 'Intrinsic Motivation' as it describes the reasons that drive the action, whose understanding is essential to recognize both individual and organizational behaviour (Mitchell & Daniels, 2003). Faculty turnover is the area of study of this research paper, which will further contribute to the body of knowledge to a large extent. Moreover, very less research has been conducted so far in context to intrinsic motivation and turnover intention of faculty members of technical education institutes of India.

The objective of this study is to identify the antecedents of intrinsic motivation and then to analyze their impact on turnover intention of faculty members of technical education institutes of India. For the purpose of this study the faculty members of selected technical education institutes of India have been considered for data collection. This study will contribute to the technical education institutes which face the problem of high turnover of faculty members resulting from un favourable individual and organizational factors while developing their policies. The findings of the research work will be helpful in studying and understanding the intentions of the faculty members to quit or stay in the institutes in light of the intrinsic motivational factors. This research aims at designing strategies for technical education institutes of India in the face of the emerging competition with a view to increase the employee retention and minimizing turnover in the institute.

## **LITERATURE REVIEW**

Individual factors leading to turnover intention refer to the personal characteristics of an employee. These characteristics could be those which are ingrained in the individual, such as personality, or those which are learnt, such as skill, ability etc. Studies indicate that various cognitive and non-cognitive factors influence, directly or indirectly, to employees' intention and then finally the decision to actually quit or stay in the organization. Intrinsic motivation is one such important dimension of individual factors and is the area of study in this research paper.

## **INTRINSIC MOTIVATION**

Intrinsic motivation is a concept evolved from psychology, and has been debated to be one of the most crucial factors for intellectual development (Ryan and Deci, 2000). In particular, psychologists have proposed that it is the mechanism that results in the spontaneous behavior of human beings (Berlyne, 1965).

Intrinsic motivation is defined as doing of an activity for its inherent satisfaction rather than for some separable consequences (Ryan and Deci, 2000). Intrinsically motivated, employees feel naturally drawn, or pulled, towards completing their work. The decision to apply effort is based on personal enjoyment and thus it is fully volitional, self-determined and autonomous (Kehr, 2004). Intrinsically motivated, employees are present-focused; they are concerned with the experience of performing the work itself (Quinn, 2005). To illustrate this, consider the case of a university professor presenting a lecture to students. When intrinsically motivated, the teachers' effort is based on enjoyment of the task of lecturing, which provides joy and pleasure in the process of performing.

It has been established by earlier researchers that certain activities can enhance work effectiveness by raising the level of employees' intrinsic motivation. A considerable amount of research evidence supports that, holding the ability constant for most jobs, highly motivated employees perform at significantly higher rates than unmotivated employees

(Vroom, 1964 and Porter & Lawler, 1968). There is good reason and some empirical evidence to suggest that “conditions in the organization environment (e.g., reward system, feedback systems and task structures) can have a substantial impact on individuals’ motivational level” (McGregor, 1960; Vroom, 1964).

Motivation researchers have long recognized that the ‘desire to make an effort’ can be derived from different sources, which can be internal or external (Herzberg, 1966; Porter & Lawler, 1968; Staw, 1977). Various scholars and practitioners believe that external controls like incentives, punishments, and rewards were necessary to motivate persistence, performance, and productivity (Heath, 1999; Steers, Mowday, & Shapiro, 2004). On the contrary, internal controls make the work inherently interesting and enjoyable (McGregor, 1960; Herzberg, 1966). This view is developed and represented by theories of self-determination and intrinsic motivation (Deci, 1975; Deci & Ryan, 1985). Therefore, intrinsic motivation refers to the desire to expend effort based on interest and enjoyment of the work itself (Amabile, Hill, Hennessey, & Tighe, 1994; Ryan & Deci, 2000; Gagne & Deci, 2005).

### **ANTECEDENTS OF INTRINSIC MOTIVATION**

Four antecedents of intrinsic motivation have been identified with the help of the Intrinsic Motivation Inventory (IMI), which is a multidimensional measurement device intended to assess intrinsic motivation and is used by various researchers (Deci, Eghrari, Patrick, & Leone, 1994; Plant & Ryan, 1985; Ryan, 1982; Ryan, Connell, & Plant, 1990; Ryan, Koestner & Deci, 1991; Ryan, Mims & Koestner, 1983). The Intrinsic Motivation Inventory (IMI) was originally developed by Ryan, Mims, and Koestner (1983) to assess the overall level of intrinsic motivation experienced by an individual engaged in an achievement oriented task. For this study, a new version of the IMI is utilized having four subscales which measure various underlying dimensions of intrinsic motivation. The first subscale is ‘Interest/Enjoyment’ which is considered as the self-report measure of intrinsic motivation. It is concerned with whether the individual enjoyed doing any activity or it was fun doing it. It also measures the interest level of doing the activity of any individual. The second subscale is ‘Effort/Importance’ which measures the extent of efforts that has been exerted to fulfill any task. It shows the importance of any task to an individual. The third subscale is ‘Competence’, which is assumed to be one of three fundamental psychological needs, so the feeling or perception of competence with respect to an activity or domain is theorized to be important, both because it facilitates goal attainment and also provides a sense of need satisfaction from engaging in an activity at which they feel effective. Thus, perceived competence has been assessed in various studies and used, along with perceived autonomy (i.e., an autonomous regulatory style) to predict maintained behavior change, effective performance, and internalization of ambient values. Perceived competence concepts are theorized to be positive predictors of both self-report and behavioral measures of intrinsic motivation. The fourth subscale is ‘Relaxation/Contentedness’ which measures the extent of relaxation or pressure felt at work, which signifies the level of intrinsic satisfaction among employees.

### **TURNOVER INTENTION**

Employee turnover is a critical concern in all types of organizations in the current era of knowledge management (Drucker, 1999; DeLong, 2004). This problem is frequently examined in technical education institutes because of its negative influences on teaching and learning process (Cotton & Tuttle, 1986; Morrow & McElroy, 2007). In education system, the issue of turnover intention of faculty members have been major focus as they affect the quality of the education (Crossman & Harris, 2006).

Turnover of faculty members impacts the overall quality of an education system and students' achievement levels (Ingersoll, 2001). It can be positive or negative for the self, the organization and the society as well. Sometimes the employees may decide to move from one organization to the other for their career objectives. Sometimes the employees may feel that the promises and expectations of the organization regarding promotion or rewards are not fulfilled and it makes them to leave the job (Mobley, 1982). Turnover intention is the probability that an individual employee would stay in the organization or not (Cotton and Tuttle, 1986).

Employee turnover means voluntary cessation of membership of an employee from an organization. (Morrell et al. 2001), whereas, turnover intention is defined as a conscious and deliberate willfulness to leave the organization (Tett and Meyer, 1993). Empirically, when a person actually quit the job, this behavior is preceded by intentions to leave. Thus, it is thought that a "Turnover intention is the strongest turnover predictor" (Allen, Bryant, & Vardaman, 2010).

Academicians have been interested in understanding the turnover intention of faculty members as precursor of turnover behavior. Early literature on turnover behavior indicated that the "employees would initiate the process of termination of their relationship with their employee/ organization/ profession only when there is perceived desirability to do so and there is a perceived possibility of such ease of movement" (March and Simon, 1958). This perceived desirability of termination of employee-employer relation is known as turnover intention. Intentions are important to study as they predict an individual's perception and judgement (Mobley et al., 1979). Researchers have testified that, "turnover intention comprises of a sequence of process viz., thinking of quitting, intentions to search, and intention to quit" (Mobley 1982; Mobley et al. 1978). Thus, proactive measures may be adopted by the organization to control the actual turnover.

It is also important to note that not all types of voluntary turnover are negative for the organization. For example, if the individual leaving the organization is a poor performer or is an easily replaceable one, then the turnover can actually be a positive condition for the organization. Voluntary turnover may also be favorable to the extent that it is avoidable. That is, turnover may be something positive if the organization could have prevented it, but decided not to do it. Utility consideration is another factor in evaluating voluntary turnover. That is, turnover is considered negative, only if the cost of replacing the person, who is going to leave, outweighs the benefits. Unavoidable voluntary turnover can be very costly for organizations. Hence, identifying organizational, job and individual-related factors contributing to dysfunctional voluntary turnover is imperative in order to be able to take appropriate action.

## **RELATIONSHIP BETWEEN INTRINSIC MOTIVATION AND TURNOVER INTENTION**

"Intrinsic motivation is the strongest predictor of turnover intention" (Dysvik & Kuvaas, 2008). Various researches discussing the relationship between intrinsic motivation and turnover intentions, suggest that, "intrinsic motivation is negatively correlated with turnover intentions" (Dysvik & Kuvaas, 2008; Houkes et al., 2001; Lai & Kapstad, 2009; Richer, Blanchard, & Vallerand, 2002).

## **RESEARCH METHODOLOGY**

### **Research Objectives**

The study has been undertaken with the following research objectives:

- To identify the various antecedents of Intrinsic Motivation of faculty members of technical educational institutes of India.

- To analyze the impact of antecedents of Intrinsic Motivation on turnover intention of faculty members of technical educational institutes.
- To describe the importance of retaining efficient faculty members and developing strategies to enhance their retention practices through motivating the faculty members.

### RESEARCH VARIABLES

Four antecedents of intrinsic motivation namely Interest/Enjoyment (X1), Effort/Importance (X2), Perceived Competence (X3) and Relaxation/Contented (X4) of Intrinsic Motivation (X) have been considered as exogenous variables and turnover intention (Z) of faculty members has been considered as an endogenous variable (Dysvik & Kuvaas, 2008; Houkes et al., 2001; Lai & Kapstad, 2009; Richer, Blanchard, & Vallerand, 2002).

### RESEARCH HYPOTHESIS

The study postulates five research hypothesis corresponding to the exogenous and endogenous variables as explained below:

- H<sub>1</sub>:** Interest/Enjoyment has a significant impact on intrinsic motivation of faculty.
- H<sub>2</sub>:** Effort/Importance has a significant impact on intrinsic motivation of faculty.
- H<sub>3</sub>:** Perceived Competence has a significant impact on intrinsic motivation of faculty
- H<sub>4</sub>:** Relaxation/Contented has a significant impact on intrinsic motivation of faculty.
- H<sub>5</sub>:** Intrinsic Motivation has a significant impact on turnover intention of faculty members.

### RESEARCH MODEL

Conceptual Framework showing the relationship of the exogenous and endogenous variables is shown in figure 1.

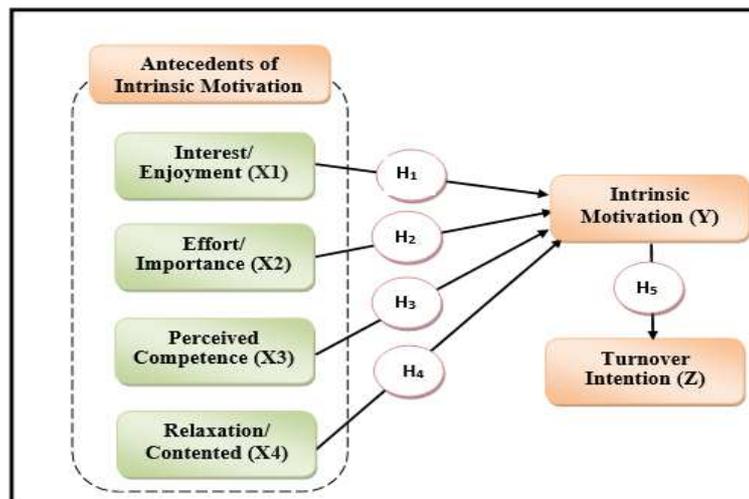


Figure 1: Conceptual Framework Showing the Relationship of the Variables of the Study

### RESEARCH INSTRUMENT

Research instrument of 18 items has been formulated comprising of both exogenous and endogenous variables as

shown in table 1. Turnover intention, the endogenous variable of the study, has been assessed using three items adapted from Donnelly and Ivancevich (1985). The items in the instrument measure the probability of faculty members' intention to leave the organization with the following statements: 1) "It is likely that I will actively look for a new job next year"; 2) "I often think about quitting" and 3) "I will probably leave as soon as possible". Each item is represented with five point Likert response scale to indicate their likelihood of leaving the organization in the near or distant future. A higher score indicates a higher intention to leave the organization. Intrinsic Motivation, the exogenous variable of the study, was assessed using one of the version of Intrinsic Motivation Inventory (IMI) developed by Ryan, Mims, and Koestner (1983) consisting of 12 items for all the four antecedents of intrinsic motivation and 3 items representing the intrinsic motivation as shown in table 1.

**Table 1: Research Instrument**

Variable	Items	Scale	Source
Turnover Intention (Z)	Z1	Actively searching for a new job next year	Turnover Intention Scale of Donnelly and Ivancevich (1985)
	Z2	Often think about quitting present job	
	Z3	Leave as soon as possible	
Intrinsic Motivation (Y)	Y1	Highly intrinsically motivated	Intrinsic Motivation Inventory (IMI) of Ryan, Mims, and Koestner (1983)
	Y2	Somewhat intrinsically motivated	
	Y3	Not motivated	
Interest/ Enjoyment (X1)	X11	Enjoyed doing the activity	
	X12	It was fun to do	
	X13	Activity is interesting	
Effort/ Importance (X2)	X21	Put a lot of effort	
	X22	Tried very hard	
	X23	Important to me	
Perceived Competence (X3)	X31	Good at this activity	
	X32	Satisfied with performance	
	X33	Skilled for this activity	
Relaxation/ Contented (X4)	X41	Relaxed	
	X42	Not felt under pressure	
	X43	Intrinsic satisfaction	

## RESEARCH DESIGN

This study employs an exploratory and causal research design to determine the antecedents of intrinsic motivation as well as to assess the impact of intrinsic motivation on turnover intention of faculty members of technical education institutes of India. The data have been collected through structured questionnaire distributed online to faculty members formulated in google docs. The faculty members have been sampled through nonprobabilistic convenience sampling technique. Emails containing link of the questionnaire has been sent to 500 faculty members from all over India and received 325 filled questionnaires. After initial screening of the data collected, 20 samples are discarded due to incomplete data. Hence, the sample size is 305 and 61% response rate. The questionnaire consists of two parts. Firstly, 18 questions are related to exogenous and endogenous variables followed by the demographic characteristic of the respondents. Questions are asked on five point likert scale from Strongly Disagree (1) to Strongly Agree (5).

## DATA ANALYSIS & INTERPRETATION

### Data Screening

Prior to conducting the analysis, the data are screened and necessary assumptions are fulfilled. The data tested for outliers, linearity, normality, homoscedasticity, multicollinearity and independence of observations and were found to satisfy the assumptions of Multivariate Data Analysis (Hair. et al., 2006). Firstly, the data was crosschecked for any missing data.

**Test of Linearity:** Linearity of data is tested with the help of Deviation from Linearity Test of ANOVA. If the Sig. value for Deviation from Linearity is less than 0.05, the relationship between exogenous variables and endogenous variable is not linear i.e. it should be more than 0.05. The sig. values of deviation from linearity are more than 0.05 for all the combination of exogenous variables and endogenous variable as shown in table 2. Hence, the test of linearity is satisfactory and the data is linear.

**Table 2: Test of Linearity**

Exogenous & Endogenous Variable	Deviation from Linearity (Sig.)
X1 – Y	0.665
X2 – Y	0.798
X3 – Y	0.649
X4 – Y	0.869
Y - Z	0.833

**Outliers:** It is tested with the help of Centered Leverage Values having Threshold value of 0 to 0.99. Centered Leverage Value for the data ranges from 0.000 to 0.066, when exogenous variable is X1, X2, X3 and X4 and endogenous variable is Y. Whereas, Centered Leverage Value for the data ranges from 0.000 to 0.040, when exogenous variable is Y and endogenous variable is Z. Hence, there is no case of outliers.

**Test for Normality:** Normality of data is tested with the help of explore method. Normal Q-Q plot is obtained for all the variables, which explains that the data are normal. Values of Mean, Median & Trimmed Mean of all the variables are nearly identical. This is one indication that the distribution is not skewed in one direction or another and hence, the data is normally distributed. The values of skewness and kurtosis for all the data are under range, hence the data is normal.

**Test for Homoscedasticity:** Since the probability associated with the Levene Statistic (0.305, 0.157, 0.537, 0.183 & 0.991 for X1, X2, X3, X4 & Y respectively) is greater than the level of significance (0.05), hence the variance is homogeneous. Therefore, the test for homoscedasticity is satisfactory.

**Test for Multicollinearity:** Multicollinearity is a problem that occurs with regression analysis when there is a high correlation of at least one exogenous variable with a combination of the other exogenous variables. Collinearity statistics can be checked through regression analysis in SPSS. Multicollinearity between the exogenous variables can be checked with the help of tolerance and VIF values. The tolerance value of exogenous variables below 0.20 is generally considered cause for concern. Another statistic used to check for multicollinearity is the Variance Inflation Factor (VIF), which is just the reciprocal of the tolerance statistics. A VIF of greater than 5 is generally considered evidence of multicollinearity. If 1 by 0.711, the result will be 1.406, which is exactly the same as the VIF statistic shown below in table 3. The tolerance values and the VIF are under threshold range, indication no multicollinearity between exogenous

variables.

**Table 3: Test for Multicollinearity**

Exogenous Variable	Endogenous Variable	Collinearity Statistics	
		Tolerance	VIF
X1	Y	0.949	1.054
X2	Y	0.853	1.172
X3	Y	0.986	1.015
X4	Y	0.858	1.166
Y	Z	1.000	1.000

**Independence of observations:** It means that there is no relationship between the observations in each group or between the groups themselves. For example, there must be different participants in each group with no participant being in more than one group. It is checked with the help of Durbin-Watson test. The Durbin-Watson Statistic is used to test for the presence of serial correlation among the residuals. The value of the Durbin-Watson statistic ranges from 0 to 4. As a general rule of thumb, the residuals are uncorrelated if the Durbin-Watson statistic is approximately 2. A value close to 0 indicates strong positive correlation, while a value of 4 indicates strong negative correlation. In this study, the value of Durbin-Watson statistic is 2.052 for Y as exogenous and Z as endogenous variable, whereas it is 1.873 in case of X1, X2, X3 and X4 as exogenous and Y as endogenous variable, approximately equal to 2, indicating no serial correlation i.e. there is independence of observations.

## EXPLORATORY FACTOR ANALYSIS

Subsequently, Exploratory Factor Analysis (EFA) has been conducted for the purpose of data reduction. It is used to remove redundant (highly correlated) variables from the instrument, perhaps rearranging the entire data with a smaller number of uncorrelated variables. The purpose of structure detection is to examine the underlying (or latent) relationships between the variables.

EFA has been conducted on 18 items included in the questionnaire with the help of SPSS (version 21). Principle Axis Factoring method of extraction is chosen to extract the factors, with squared multiple correlations used as prior communality estimates. Several criteria are used to decide on the number of factors: The Kaiser criterion (i.e., eigenvalues greater than 1; Kaiser, 1958); the scree plot of the eigenvalues (Cattell & Vogelman, 1977) and parallel analysis (O'Connor, 2000). Based on these results, different factor solutions were compared, and the best solution is considered for further confirmatory factor analysis. As suggested by Fabrigar, Wegener, MacCallum, and Strahan (1999), an oblique rotation using promax was at first performed to determine the size of the correlations between the extracted factors. When correlations existed between the factors, the oblique solution is retained.

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy is a statistic that indicates the proportion of variance in the variables that might be caused by underlying factors. For the KMO statistic, Kaiser (1974) recommends a bare minimum of 0.5 and that values between 0.5 and 0.7 are mediocre, values between 0.7 and 0.8 are good, values between 0.8 and 0.9 are great and values above 0.9 are superb (Hutcheson Sofroniou, 1999). For these data the value is 0.768, which is considered as good degree of common variance and so it can be considered that sample size is adequate for factor analysis. The Bartlett's test of Sphericity is used to examine the hypothesis that the variables are uncorrelated in the population. In other words, the population correlation matrix is an identity matrix i.e. each variable correlates itself ( $r=1$ )

but there is no correlation with the other variable ( $r=0$ ). Small values (less than 0.05) of the significance level indicate that a factor analysis may be useful for the data and the hypothesis is accepted (Field, 2000). For these data, Bartlett’s test is highly significant ( $p < 0.001$ ), and therefore factor analysis is appropriate and each variable correlates itself but there is no correlation with the other variable i.e. the data is free of multicollinearity as shown in table 4.

**Table 4: KMO and Bartlett's Test**

<b>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</b>		<b>0.768</b>
Bartlett's Test of Sphericity	Approx. Chi-Square	2606.375
	df	153
	Sig.	0.000

EFA resulted into the convergence of six factors as hypothesised in this study based on theoretical understanding along with their respective total percentages of variance explained as shown in table 5. The cumulative percentage sum of square loadings is 64.52, which is under the acceptable range.  $h^2$  (communality coefficient) values indicate the proportion of each variable's variance that can be explained by the retained factors. The communality coefficient (suppression below 0.3) for all the items are good and above 0.3, so all the items can be retained. Pattern coefficient matrix (using promax rotation), is preferable to interpret, since it includes the coefficients that only represent the unique contribution of each variable to the factor, thus accounting for the inter-factor correlations. All the items of a particular exogenous variable as hypothesized on the basis of theory are loaded under same factor with high loading values, hence all the items are retained in the instrument for further analysis.

**Table 5: Exploratory Factor Analysis – Pattern Coefficient Matrix**

	Factor						$h^2$
	1	2	3	4	5	6	
<b>% Variance Explained Eliminating Other Factors (After Rotation)</b>	24.36	12.18	9.01	8.18	5.95	4.82	
X11		0.814					0.667
X12		0.806					0.692
X13		0.893					0.769
X21					0.588		0.417
X22					0.828		0.620
X23					0.832		0.723
X31				0.788			0.620
X32				0.940			0.899
X33				0.634			0.426
X41	0.948						0.858
X42	0.916						0.799
X43	0.651						0.566
Y1						0.653	0.428
Y2						0.852	0.681
Y3						0.471	0.357
Z1			0.907				0.755
Z2			0.797				0.701
Z3			0.746				0.637

Notes. Total variance explained = 64.52%.  
 $h^2$  = Extraction Communality Coefficient.

The coefficients of the inter factor correlations among the variables indicates that the exogenous and endogenous

variables are not correlated with each other as shown in table 6.

**Table 6: Exploratory Factor Analysis – Inter-Factor Correlations**

Variables	X1	X2	X3	X4	X5	X6
X1	1.000	-	-	-	-	-
X2	-0.168	1.000	-	-	-	-
X3	-0.253	0.323	1.000	-	-	-
X4	0.077	0.100	0.037	1.000	-	-
Y	0.406	-0.221	-0.403	0.054	1.000	-
Z	0.265	-0.233	-0.383	0.025	0.430	1.000
<b>Extraction Method: Principal Axis Factoring.</b>						
<b>Rotation Method: Promax with Kaiser Normalization.</b>						

Finally, internal consistency reliability to test unidimensionality has been assessed by Cronbach's alpha. Maximum likelihood estimated matrices are used, because they do not have to be inverted prior to the computation of Cronbach's alpha (van Horn, 2003). The resulting alpha values ranged from 0.70 to 0.87, which are above the acceptable threshold 0.70 suggested by Babbie (1992). According to Babbie (1992), the value of Cronbach Alpha is classified based on the reliability index classification where 0.90-1.00 is very high, 0.70-0.89 is high, 0.30-0.69 is moderate, and 0.00 to 0.30 is low. The analysis showed the Cronbach Alpha value, higher than 0.70, falls into the classification of high.

Table 7 indicates the total 18 items are considered comprising of both exogenous and endogenous variables after data screening and factor reduction (exploratory factor analysis). The mean and standard deviation of the data for each variable are also estimated. The mean values for the predictors of intrinsic motivation are above average (greater than 3), whereas, faculty members' intrinsic motivation level is below average (mean = 2.36, which is less than 3). Hence, low intrinsic motivation will lead to high turnover intention as proved in theories, which is also depicted from the mean values of turnover intention which is above average (mean = 3.04). The data are not very much deviated from the mean.

**Table 7: Mean, SD and Cronbach's Alpha**

Variables	Items	Mean	SD	$\alpha$
X1	3	3.61	0.33	0.875
X2	3	3.35	0.64	0.796
X3	3	3.35	0.46	0.820
X4	3	3.44	0.38	0.877
Y	3	2.36	0.61	0.702
Z	3	3.04	0.44	0.863
<b>SD - Standard Deviation</b>				
<b><math>\alpha</math> - Cronbach's Alpha</b>				

## CONFIRMATORY FACTOR ANALYSIS

Confirmatory factor analysis (CFA) has been conducted on the hypothesized model of 18 items using Analysis of Moment Structure (Amos version-21) to confirm the best fit model. Pattern Matrix obtained through exploratory factor analysis is directly inserted into AMOS through pattern matrix model builder plugin for constructing the model to conduct CFA for identifying the best model fit by examining the validity and reliability of the measures and various other fit indices. Maximum likelihood method is adopted for estimation along with minimization history, standardized estimates, residual moments and a modification index with threshold value of 20 is selected to get the output. The construct achieved acceptable level of fit.

Table 11 shows the values of various fit indices with respect to Absolute Fit, Relative Fit and Parsimony Fit (Tanaka, 1993; Maruyama, 1998), of the hypothesized model along with the threshold values of those indices.

Figure 2 presents the standardized and unstandardized estimates of the first order measurement hypothesized model using the data collected from a sample of (n = 305) faculty members. The standardized estimates indicate that loadings of all the items are excellent. The standardized residual covariance's for all the items were below 2. Moreover, there are no covariance in the modification index between the items and variables. The chi square obtained is large (208.33) with 120 degrees of freedom, which should not be of great concern as larger samples produce larger chi-squares that are more likely to be significant, moreover, it is difficult to get a non-significant chi-square when samples sizes are much over 200 or so, even when other indices suggest a decent fitting model (Newsom, 2005). The overall fit indices for the hypothesized model shows CMIN / df = 1.736, GFI = 0.931, RMR = 0.05, RMSEA = 0.049, PCLOSE = 0.532, NFI = 0.922, CFI = 0.905, TLI = 0.955, PCFI = 0.759 and PNFI = 0.723. This shows that the data from the sample, fit with the hypothesized model.

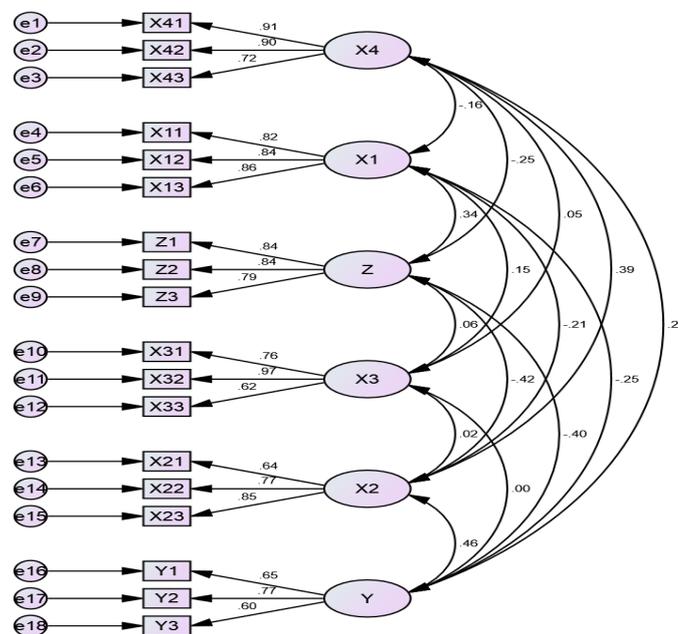


Figure 4: First Order Hypothesized Model (Standardized Estimates)

### TESTING VALIDITY AND RELIABILITY

Further, the convergent validity, discriminant validity and reliability are checked, using measures like Composite Reliability (CR), Average Variance Extracted (AVE), Maximum Shared Variance (MSV), and Average Shared Variance (ASV) with the help of 'stats tool package' in excel using correlations and standardized regression weights calculated by CFA. Validity is the measure of the accuracy of an instrument used in a study (Linn, R.L., 2000; Stewart). There are three types of validity which are convergent, discriminant and construct validity as mentioned below.

For convergent validity, the average variance extracted (AVE) is examined. According to Fornell and Larcker (1981), an AVE value of 0.50 and higher indicates a sufficient degree of convergent validity, meaning that the latent variable (constructs) explains more than half of its indicators variances. For discriminant validity, three measures have been employed i.e. Maximum Shared Variance (MSV) and Average Shared Variance (ASV) should be less than Average

Variance Extracted (AVE) and all the correlation values should be below 0.85. The construct validity for the data can be confirmed by various fit indices measured at the time of CFA like GFI (>0.9), CFI (>0.9), RMSEA (<0.08) and CMIN/df (<5).

According to Zainudin Awang (2012), reliability is the extent of how reliable is the said measurement model in measuring intended latent constructs. Cronbach alpha that has been proposed by Nunnally (1978) offer the value greater than 0.70 indicate that the measurement model is reliable. Composite reliability values of 0.60 to 0.70 in exploratory research and values from 0.70 to 0.90 in more advanced stages of research are regarded as satisfactory (Nunnally and Bernstein, 1994), whereas values beyond 0.60 indicate a lack of reliability.

**Table 8: Validity and Reliability Testing**

	CR	AVE	MSV	ASV	X2	X4	X1	Z	X3	Y
X2	0.800	0.575	0.213	0.117	0.758					
X4	0.885	0.721	0.150	0.061	0.387	0.849				
X1	0.877	0.703	0.112	0.054	-0.214	-0.158	0.838			
Z	0.864	0.680	0.175	0.103	-0.418	-0.246	0.335	0.825		
X3	0.833	0.632	0.023	0.006	0.015	0.051	0.153	0.062	0.795	
Y	0.717	0.521	0.213	0.101	0.462	0.256	-0.250	-0.403	0.005	0.679

The validity and reliability measures of the construct mentioned in the table 8 indicate satisfactory composite reliability with values greater than 0.7 for each construct. Values of Average Variance Extracted are greater than 0.5 for each construct confirming the convergent validity, where values of MSV and ASV are less than AVE confirming discriminant validity for all the construct. Moreover, correlation values for all the construct are below 0.85. The following measures confirms the satisfactory construct validity for the data as mentioned.

## **HYPOTHESIS TESTING: STRUCTURAL EQUATION MODELLING**

The measurement model obtained after CFA, identified 18 items and considered as the best fit model for this study. Five hypothesis have been proposed in the study in order to identify the causal relationship between the four antecedents of intrinsic motivation and intrinsic motivation and then between intrinsic motivation and turnover intention of faculty members.

The structural model developed to test the hypothesis through structural equation modelling presents five causal relationships i.e. from X1, X2, X3 and X4 to Y and from Y to Z. The examination of regression weights of the standardized estimates demonstrates that the square multiple correlation (R Square) for causal relationship between Y (Exogenous variable) and Z (endogenous variable) is 0.48 (48%), which depicts that the model is valid and demonstrates that the intrinsic motivation explains 48% of the turnover intention of faculty members. Whereas the four antecedents of intrinsic motivation viz. X1, X2, X3 and X4 explains 19%, 44%, 2% and 9% of Intrinsic motivation (Y) of faculty members respectively. Standardized estimates depict the relative contributions of each exogenous variable to the endogenous variable as shown in figure 3 and mentioned in table 9.

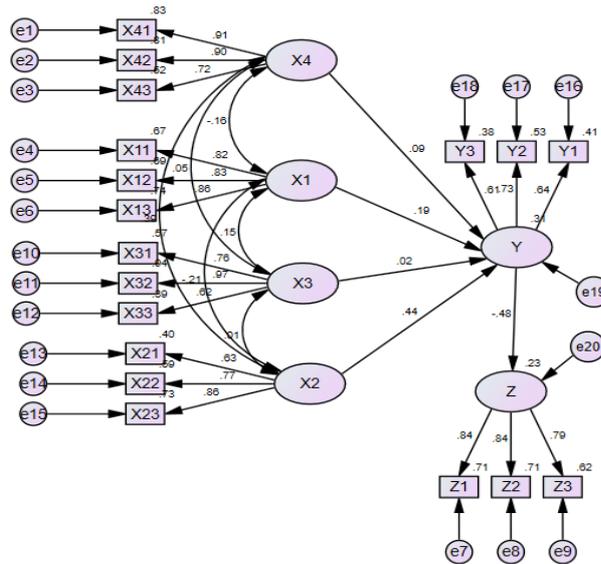


Figure 3: Structural Model (Standardized Estimates)

Table 9: Standardized Regression Estimates

	Causal Relationships Between Variables		Estimate
Y	<---	X4	0.089
Y	<---	X1	0.193
Y	<---	X3	0.018
Y	<---	X2	0.442
Z	<---	Y	-0.477

As far as unstandardized regression weights are concerned, the unstandardized regression coefficient represents the amount of change in the endogenous variable for each one unit change in the variable predicting it i.e. exogenous variables. The estimates of unstandardized regression are represented in figure 4.

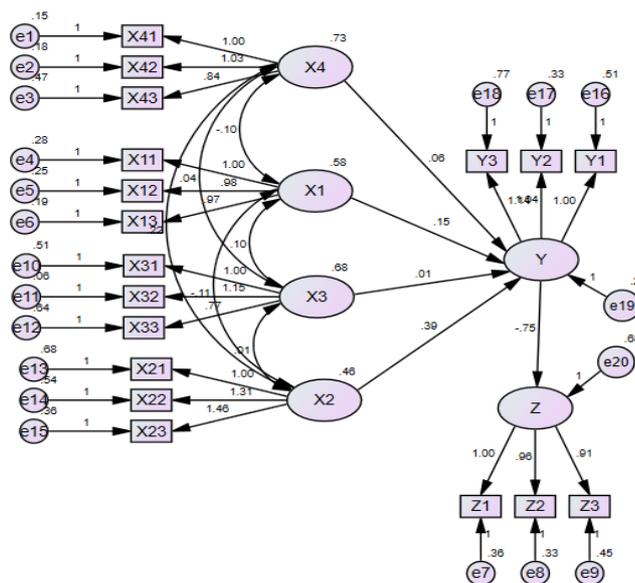


Figure 4: Structural Model (Unstandardized Estimates)

The unstandardized estimates are presented in table 10, which depicts that intrinsic motivation has significant negative impact on turnover intention with p values of less than 0.001, moreover the critical ratio (CR) is -6.047, which is greater than 1.96 (threshold value of CR), which confirms that the path is significant. The value (-0.754) of estimate for the causal relationship  $Z \leftarrow Y$  indicates that with one unit increase in intrinsic motivation, the turnover intention will decrease with 75.4%, as negative sign indicates inverse relationship between the two.

Likewise, out of four antecedents of intrinsic motivation, only two antecedents i.e. IE and EI has significant impact on intrinsic motivation of faculty members with p values of 0.006 and 0.001 and their critical ratios (CR) are -2.77 and 4.99, which are greater than 1.96. The value (-0.152) of estimates for the causal relationship  $Y \leftarrow X1$  indicates that with one unit change in X1, the Y will increase with 15.2% as positive sign indicates direct relationship between the two. The value (0.389) of estimates for the causal relationship  $Y \leftarrow X2$  indicates that with one unit change in X2, the Y will increase with 38.9%, as positive sign indicates direct relationship between the two. Hence, the hypothesis  $H_1$ ,  $H_2$  and  $H_5$  are accepted, whereas hypothesis  $H_3$  and  $H_4$  are rejected.

**Table 10: Unstandardized Regression Estimates**

Causal Relationships Between Variables	Estimate	S.E.	C.R.	P
$Y \leftarrow X4$	0.062	0.050	1.249	0.212
$Y \leftarrow X1$	0.152	0.055	2.774	0.006
$Y \leftarrow X3$	0.013	0.046	0.279	0.780
$Y \leftarrow X2$	0.389	0.078	4.992	***
$Z \leftarrow Y$	-0.754	0.125	-6.047	***

The table 11 given below compares the fit indices of hypothesized model and the structural model with the threshold values of the indices.

**Table 11: Fit Indices for the Hypothesized and Measurement Model**

Fit Index	Symbol	Hypothesized Measurement Model	Structural Model	Threshold Values	Source
<b>Absolute Fit Indices</b>					
Degree of Freedom	df	120	124	-	-
Chisquare	$\chi^2$	208.33	236.36	< 2 or 3 – Good & < 5 – permissible	Kline, 1998; Ullman, 2001
Chisquare/ Degree of Freedom	$\chi^2/df$ (CMIN/df)	1.736	1.906	< 2 – Excellent Fit 2 to 5 – Good Fit	Marsh and Hocevar, 1985
Probability of CMIN	P	0.000	0.000	> 0.05	-
Goodness of Fit Index	GFI	0.931	0.922	0 (no fit) – 1 (perfect fit) (Best fit > 0.90)	Byrne, 1994
Root mean square residual	RMR	0.050	0.044	< 0.05	Kline, 2005
Root Mean Square Error of Approximation	RMSEA	0.049	0.055	< 0.6	Hu and Bentler, (1999); Browne and Cudeck (1993)

p of Close Fit	PCLOSE	0.532	0.229	> 0.05	-
<b>Relative fit indices</b>					
<b>Normed Fit Index</b>	NFI	0.922	0.911	> 0.90/> 0.95	Byrne, 1994/Schumacker & Lomax, 2004
<b>Tucker-Lewis Index</b>	TLI	0.955	0.956	> 0.90/> 0.95	Byrne, 1994/Schumacker & Lomax, 2004
<b>Comparative Fit Index</b>	CFI	0.965	0.955	> 0.85/> 0.90	Bollen, 1989/Byrne, 1994
<b>Parsimony Fit Indices</b>					
<b>Parsimony Comparative Fit Index</b>	PCFI	0.757	0.774	0 (no fit) – 1 (perfect fit)	Mulaik et al. (1989)
<b>Parsimony Normed Fit Index</b>	PNFI	0.723	0.739	0 (no fit) – 1 (perfect fit)	Mulaik et al. (1989)

## DISCUSSIONS, LIMITATIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

### Discussions

Education industry in India is not untouched with the basic problems of the corporate world. The scenario now-a-days is not same like before, when educational institutes were considered as a holy place, teachers as guru and the education itself as divine learning. Now, it is all a business. The education system has been transformed into a profitable business with cut-throat competition in the market, where huge number of competitors striving to gain competitive advantage. In this situation, it is very much likely for this system to get affected with the various management paradigm and the stakeholders of this system like management of the institutes, faculty members and the students are somehow managing themselves to be at par. Performance is now a major issue in this current situation, as it is rightly said that ‘if you are fit to perform, you will strive’ similar to the ‘survival of the fittest’. So, everyone, whether the management or the faculty members are continuously trying to perform their best. Moreover, it is the right of every individual to grab the right and profitable opportunity as and when required. The reason is obvious, everyone wants to grow and develop, so no one will lose any good opportunity. The faculty members are no more different and they are also in continuous search for something better. Moreover, there are various reasons, which compel an individual to depart for something better. The departure is initiated with the intention, which forces him/her to search for options, which result into actual turnover. So, the crux of the theme is basically the intention to leave, formally known as ‘Turnover Intention’. As far as educational industry of India is concerned, faculty turnover is the major problem being faced, leading to faculty crunch. Many factors are responsible for this, as one discussed and the main subject of this research – ‘Intrinsic Motivation’. It is basically the inner force of one’s self to do something. If the person is not intrinsically motivated, he/she is not likely to do that thing, unless and until not affected by any external compulsion. Turnover is the one of the most important and debated issue now-a-days, as it is becoming more prevalent day-by-day and also because of its negative effects.

Intrinsic Motivation among faculty members and its impact on turnover intention has been theoretically studied and assessed empirically with the help of Exploratory Factor Analysis and Confirmatory Factory Analysis for data reduction and for checking validity and reliability of data to create a best fit measurement model. Structural equation

modelling was used to create structural model to test the hypothesis generated for the study to prove the causal relationships predicted among the four antecedents of intrinsic motivation and turnover intention of faculty members of technical education institutes of India.

Driven from motivation theories, this study provides new insights, in the technical education field, into the relationship among the construct of intrinsic motivation and turnover intentions—the latter being historically considered as direct antecedents of the actual turnover. Nevertheless, there are no studies that have used a structural equation modelling approach to explain how intrinsic motivation and turnover intention are related as far as faculty members are concerned. The results show that intrinsic motivation has inverse significant impact on turnover intention of faculty members. The result of this study is also supported by the findings of Dysvik & Kuvaas, 2008 and Lai & Kapstad, 2009 and provide better understanding that how intrinsic motivation is inversely related to turnover intention. The two antecedents of intrinsic motivation viz. Interest/Enjoyment and Effort/Importance have significant impact on intrinsic motivation. This result highlights that if the faculty members are enjoying their work and they seem that work is interesting, will lead to higher level of intrinsic motivation and less chances of turnover intention. Moreover, if faculty members try to put lot of efforts in their work and they feel that the work is important for them to do, they will in turn get motivated intrinsically, which results in lower turnover intention. By and large, in the present scenario intrinsic motivation is required to feel oneself contented, due to minimal presence of extrinsic motivation now-a-days, in such a turbulent environment. Hence, the faculty members must practice to motivate themselves intrinsically, by somehow aligning their work with their passion or hobbies in which they enjoy to do and they align their work with the aim of their professional life, where they feel important to accomplish it. Moreover, the management of the institutes must instil a conducive environment for the faculty members, where they feel intrinsically motivated, by enhancing the culture of assigning work according to their interest, where faculty members enjoy to do it and encourage them to develop aim according to their work.

Hence, this study contributes to the literature generating a validated structural model of intrinsic motivation of faculty members and their turnover intention.

## **LIMITATIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH**

Several limitations of this study related to research approach and sample size need to be acknowledged. Firstly, the primary research approach is quantitative analysis in order to assess the causal relationships among the research variables. However, the quantitative approach alone may not gather the full in depth knowledge and understanding of intrinsic motivation and turnover intention issues. Therefore, a more field-based, qualitative approach using data collection techniques like observation and in-depth interviewing with faculty members should be considered to more fully explore the dynamics this issue.

Secondly, research data are collected from 305 samples for this study and they are considered to represent the whole population of faculty members of India, which may be less. Another limitation is lack of longitudinal study design. Behavioural issues like motivation and turnover are dynamic and complex process to understand, which needs more consequent studies to draw causal inferences.

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