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Underlying Variables Concerning Statutory Auditors' Independent Engagement: A Regression Analysis

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Abstract
This study identifies few issues that positively or negatively influence statutory auditors' independent engagement. A primary survey is conducted to gather opinion of knowledgeable and experienced respondents on these issues. Score of 1 to 5 was allotted to 5 levels of agreement of each respondent. Mean score of the sample identifies overall opinion of the sample on statutory auditors' independent engagement and variables governing the same. In order to examine impact of select issues on statutory auditors' independent engagement, Multiple Regression Analysis is conducted. From the estimated values of standardised regression coefficients, it is observed that a few variables like appointment procedure, relationship with management, provision of non-audit services negatively influence statutory auditors' engagement. On the other hand, other variables like appointment by independent regulatory authority, mandatory rotation, maximum limit on total remuneration and complete prohibition of non-audit services has positive influence on it. Result of t test for individual parameter estimates suggests that maximum limit on total remuneration and complete prohibition of non-audit services significantly influence statutory auditors' independent engagement. Adjusted Coefficient of Multiple Determinations (R^2) measures a weak association between statutory auditors' independent engagement and its governing issues, while result of F Test indicates that R^2 is significant. Hence, the model perfectly fits the data.
Keywords: Statutory Auditor, Statutory Auditors' Independent Engagement, Mean Score, Multiple Linear Regression Analysis, Regression Estimates, t test, Coefficient of Multiple Determinations, F test

1. Introduction

Statutory auditors protect interest of stakeholders of a corporate enterprise by certifying 'truth and fairness' in the company's financial statement (Gupta, 2005). With a view to performing a quality audit procedure and ensuring reliability and authenticity of financial statement, statutory auditors are required to maintain their independence from management (Banerjee, 2011). As per Code of Ethics for Professional Accountants issued by the International Ethics Standard Board for Accountants (IESBA) under the International Federation of Accountants (IFAC), independence in the context of auditing can be categorised into two groups – Independence of Mind and Independence of Appearance. Ethical orientation of a statutory auditor creates independence of mind. But independence of appearance requires an auditor to avoid certain circumstances in the audit engagement that may pose a threat to their integrity, objectivity and professional scepticism and make them biased towards management.

In recent cases of corporate failures [Scandal at Polly Peck, Enron, Parmalat, Royal Ahold, Satyam, etc.] big and reputable accounting firms (e.g. Arthur Anderson LLP, Price Waterhouse Coopers, Ernst & Young, KPMG, Deloitte etc.) failed to perform independent audit (Copeland, 2005]. A detailed investigation into those scandals and notable researches identified certain audit engagement related issues [e.g. appointment procedure, nexus with management, provision of non-audit services, limitations of regulatory framework, influence of monitoring bodies etc. (Saha, 2014)] that have significant impact on statutory auditors' engagement (Fearnley et. al., 2005). Although erstwhile regulations in respective countries clearly specified the requirements of statutory auditors to deal with those issues, their alleged involvement in the fraud brought absolute shame and disgrace to the accounting profession (Bakshi, 2005).

In this backdrop, this empirical paper seeks to analyse impact of select audit engagement issues on statutory auditors' engagement. Opinion of statutory auditors and respondents from related occupations has been collected and statistically analysed to draw our inference on the topic.

2. Past Studies

Independence in audit engagement ensures quality of audit and ultimately reliability and authenticity of financial statement. But in reality, it is very difficult for an auditor to perform his/her engagement due to emergence of certain issues. Eminent researchers all over the world have contributed their thoughtful opinion on this problem with reference to select highly recognised corporate accounting scandals where big and reputable accounting firms were engaged as statutory auditors. Their studies have identified certain audit engagement issues that have considerable influence on statutory auditors' engagement. Saxena (1993) in his study said that auditor plays an important role in authentication of financial statement. Integrity, objectivity and independence of a statutory auditor influences usefulness of financial statement. Chakraborty (2004) in his study recognised the need for independent operation of statutory auditors for protection of stakeholders' interest. Thibodeau and Freier (2010) in their book analysed select American scandals and identified few issues that significantly influenced statutory auditors' engagement in those scandals. Roy & Saha (2014) in their recent study indentified underlying factors governing statutory auditors' engagement. In another study Roy & Saha (2014) went one step further and analysed significant difference in opinion among several occupational groups for the extracted factors. One such issue is appointment of auditor. Ghosh (1999) in his perception based study concluded that management of the audit engagement can auditor by controlling their appointment. According to Frier (2005), any forms of financial or business relationship created out of non-audit services provided by a statutory auditor are also a major threat to their engagement.

2.1 Research Gap

The gaps identified in existing literatures are pointed out as follows:

- There are limited number of empirical researches in this field;
- In India, studies on governing issues of statutory auditors' engagement are less in number;
- Respondents from varied occupations have not participated in research studies reviewed so far;
- None of the studies consulted till date, empirically analyses impact of select issues on statutory auditors' engagement.

3. Objectives of the Study

The major objectives of the study are as follows:

- To identify certain audit engagement issues having considerable influence on statutory auditors' engagement *[Refer to Table 1, Section 5];*
- To analyse overall opinion of the sample respondents on select audit engagement issues governing statutory auditors' engagement [*Refer to Section 6.3.1*]
- To empirically analyse the impact of select audit engagement issues on statutory auditors' engagement *[Refer to Section 6.3.2 (c)];*
- To analyse statistical significance of select issues in governing statutory auditors' engagement and identify statistically significant issues out of those selected *[Refer to Section 6.3.2 (d)];*
- To measure strength of association between select audit engagement issues and statutory auditors' engagement *[Refer to Section 6.3.2 (e)];*
- To analyse significance of such strength of association *[Refer to Section 6.3.2 (f)]*; and
- To draw our conclusions on impact of select audit engagement issues on statutory auditors' independent engagement.

4. Methodology of the Study

This study is exploratory in nature. To explore the area under study at the outset, an attempt has been made to enquire books, journal and newspaper articles, legislations and other secondary sources of information to develop a conceptual idea on statutory auditors' engagement and issues influencing the same. Some of these issues have been incorporated in a close ended structured questionnaire designed on a 5 point scale. The questionnaire aims at gathering degrees of agreement of respondents on a particular issue. Accordingly scores are given to each level [Strongly Agree (SA): 5; Agree (A): 4; Neutral (N): 3; Disagree (D): 2; and Strongly Disagree (SD):1] (Kothari, 2010).

Sample respondents for our current study have been selected from six diverse occupations. They are Chartered Accountants (CAs), Cost and Management Accountants (CMAs), Academicians, Students, Investors and Corporate Executives. Presence of CAs and CMAs gives us an insight into the practical aspect of auditing. Academicians and students of the subject are expected to bring their knowledge based opinion in the study. Investors investing in company's shares directly or through institutional investors depend on audit report for

taking their financial decision. So, their opinion is also important for this research. Finally, corporate executives from accounts or finance department of big private or public limited companies work closely with statutory auditors and play an important role in their engagement.

The questionnaire has been administered among aforesaid occupational groups in the city of Kolkata during the period of July, 2013 to June, 2014. Out of 800 respondents initially sampled based on convenience sampling technique, only 601 valid responses [101 CAs, and 94 CMAs, 111 Academicians, 118 Students, 86 Investors and 91 Corporate Executives] could be collected within plan period. The data collected has been analysed using SPSS 19.0. With a view to understanding the impact of select issues on statutory auditors' engagement, we have performed Multiple Linear Regression Analysis. After formulating the regression model, t tests has been performed to analyse significance of select issues on statutory auditors' engagement. Significance of the model has been tested using one way Analysis of Variance.

5. Identification of Variables for Empirical Analysis

Notable researches by eminent scholars and applicable regulatory pronouncements identify certain issues that positively or negatively influence statutory auditors' engagement. Some of these issues threaten their independence, while the others safeguard an auditor from identified threats. In this present study, our main objective is to analyse impact of such select issues on statutory auditors' engagement. Hence, Statutory Auditors' Engagement is the Dependent Variable (DV) for this current study. Identified issues that independently influence the DV, are Independent Variables (IVs) of this current study. Variables selected for this current study and rationale behind their selection is shown here:

Variable Code	Name of Variables	Rationale for Selection
Dependent Variable (DV)		
V_1	Statutory Auditors' Independent Engagement	Statutory auditors' independent engagement ensures quality of audit and protects stakeholders' interest.
Independent Variables (IVs)		
V_2	Management Influence in Appointment Procedure	If management of the audit engagement controls appointment of statutory auditors, they could be easily intimidated to give opinion in management's favour.
V_3	Appointment by Independent Regulatory Authority	Appointment made by an independent regulatory authority could safeguard statutory auditors from threats arising out of appointment procedure.
V_4	Mandatory Rotation of Auditor	Recent Companies Act, 2013 mandates rotation of auditor to protect an auditor from familiarity threat to their engagement created out of long association with a single audit client.
V_5	Setting Maximum Limit on Total Remuneration to Statutory Auditor	High remuneration makes a statutory auditor financially dependent on the management (Code of Ethics). A maximum limit to the total amount could be a solution to this problem.
V_6	Close Personal Relationship with Management Members	Close personal relationship with management members often influence an auditor to issue a clean report without undertaking proper audit procedure (Code of Ethics).
V_7	Provision of Non-Audit Services by Statutory Auditor	Certain non-audit services by statutory auditors sometimes influence independent review process (Code of Ethics). Regulatory pronouncements provide a comprehensive list of such services.
V_8	Complete Prohibition of Non-Audit Services	Complete prohibition on provision of non-audit services by statutory auditors could safeguard their engagement.

6. Results and Discussion

Opinion of respondents from six different occupational groups has been collected in 5 point scale and a score of 1 to 5 has been given against respective degrees of agreement for each respondent. The opinion of respondents represented by these scores along with demographic information of each respondent has been incorporated in statistical software. This data is used for our empirical analysis.

6.1 Demographic Profile of Respondents

A brief demographic profile of the respondents who participated in this current study is shown in Table 1.

Table 1: Demographic Profile of Respondents

Demographic Profile Based on Gender											
Male		%		Female		%					
522		86.9		79		13.1					
Demographic Profile Based on Age											
Young (Age less than 30 years)		%		Middle Aged (Age between 30 and 50 years)		%		Experienced (Age more than 50 years)		%	
194		32.3		279		46.4		128		21.3	
Demographic Profile Based on Occupation											
CAs	%	CMAs	%	Academicians	%	Students	%	Investors	%	Corporate Executives	%
101	16.8	94	15.6	111	18.5	118	19.6	86	14.3	91	15.1

(Source: Compilation of Primary Data using SPSS)

It is observed from the table that most of the respondents of our current research are male. There is a balanced participation of respondents from different occupation with varied levels of experiences.

6.2 Reliability of Collected Data

Internal consistency and reliability of the data can be measured with the help of Chronbach's alpha (Chronbach, 1951). This alpha value ranges within 0 to 1. If the calculated value of alpha is more than .6, we can conclude that the date is internally consistent and reliable (Nunnally, 1978). In our study, the calculated value of alpha for select 9 variables is .6236 which is more than .6. Therefore, the data in our present study is reliable and it does not suffer from any sampling bias.

6.3 Empirical Analysis

6.3.1 Overall Opinion of Sample Respondents on Select Audit Engagement Issues using Mean Scores

Scores of each respondent for a particular audit engagement issue vary within 1 to 5. Score 1 represents Strong Disagreement of the respondent with the corresponding statement and score of 5 represent strong agreement by them. As degrees of agreement are equally distributed across their scores, a score of 3 represent a neutral approach of the respondent. In this segment, we have computed mean scores of all respondents. It represents the opinion of entire sample respondents on statutory auditors' independent engagement and issues governing the same. Mean score more than 3 represent positive attitude towards a variable and vice versa. Mean scores for the variables are shown in Table 2.

Table 2: Mean Scores

Variables	Name of Variables	Overall Mean Score
V_1	Statutory Auditors' Independent Engagement	3.10
V_2	Management Influence in Appointment Procedure	3.36
V_3	Appointment by Independent Regulatory Authority	3.42
V_4	Mandatory Rotation of Auditor	4.03
V_5	Setting Maximum Limit on Total Remuneration to Statutory Auditor	3.04
V_6	Close Personal Relationship with Management Members	4.29
V_7	Provision of Non-Audit Services by Statutory Auditor	3.28
V_8	Complete Prohibition of Non-Audit Services	2.95

(Source: Compilation of Primary Data using SPSS 20.0)

Let us put the findings based on mean scores:

- Mean score for the variable 'Statutory Auditors' Independent Engagement' shows that our entire sample has a neutral approach to this issue.
- In terms of mean scores, our sample respondents have positive attitude towards 'Management Influence in Appointment Procedure', 'Appointment by Independent Regulatory Authority', 'Mandatory Rotation of Auditor', 'Close Personal Relationship with Management Members', and 'Provision of Non-Audit Services by Statutory Auditor'. Among these issues, 'Close Personal Relationship with Management Members' and 'Mandatory Rotation of Auditor' has very high mean scores. Hence, influence of these issues on statutory auditors' independent engagement is significant.

- However, they do not consider 'Complete Prohibition of Non-Audit Services' to be an important issue governing statutory auditors' independent engagement.
- Sample respondents have a neutral attitude towards 'Setting Maximum Limit on Total Remuneration to Statutory Auditor'.

6.3.2 Impact of Underlying Variables on Statutory Auditors' Independent engagement using Multiple Linear Regression Analysis

Our main objective is to analyse the impact of select audit engagement issues on statutory auditors' engagement. Therefore, theoretically statutory auditors' engagement depends on these select issues. Statutory Auditors' Engagement is the DV and all other variables are IVs. For the sake of simplicity, we are taking an assumption that a linear relationship exists between the DV and all IVs. There is a linear relationship between DV and each select IV as we have assumed. Hence, we are using Multiple Linear Regression Analysis (MLRA) in order to ascertain such relationship.

(a) Brief Overview of the Technique

A generalised function of linear regression model is: $Y = f(X_i, e_i)$

For several variables, the model can be extended as follows:

- $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots\ldots\ldots\ldots \beta_n X_n + e_i$

In the above equation, Y is the dependent variable. $X_1, X_2 \ldots X_n$ are independent variables and e_i is the stochastic disturbance term. The intercept in the above equation (α) is the average value of Y when there is no explanatory variable in the model. The coefficients $\beta_1, \beta_2, \ldots \beta_n$ are the partial regression coefficients. The estimated values of β represent the degree and direction of impact of IVs on DV.

Important Conditions for conducting MLRA

- *The number of observations must be greater than the number of parameters to be estimated;*
- *e_i is a random variable and the mean of e is zero for all X_i;*
- *Covariance between e_i and each X_i is zero;*
- *The independent variables are not perfectly linearly correlated (absence of Multicollinearity).*

Subject to fulfilment of the aforesaid assumptions, MLRA estimate β using Ordinary Least Square (OLS) method. The estimated value of β is used to analyse the impact of select IVs on DV.

(b) Fulfilment of Conditions

(i) The number of observations must be greater than the number of parameters to be estimated

Total sample size is 601 and number of parameters to be estimated is only 7. Hence, first condition of MLRA is fulfilled.

(ii) e_i is a random variable and the mean of e is zero for all X_i

Mean of Un-standardised residuals (e_i) for each observation comes out to be zero. It fulfils this condition.

(iii) Covariance between e_i and each X_i is zero

The formula of covariance between ei and Xi is as below:

$$\text{Cov (ei, Xi)} = \sum_{i=1}^{n} [ei - E(ei)][Xi - E(Xi)] \div (n-1)$$

We have calculated covariance of each predictor variable with un-standardised residuals. The result is shown in Table 3.

Table 3: Covariance between un-standardised residuals and predictor variables

Predictor Variables	Covariance with e_i
Management Influence in Appointment Procedure	.000
Appointment by Independent Regulatory Authority	.000
Mandatory Rotation of Auditor	.000
Setting Maximum Limit on Total Remuneration to Statutory Auditor	.000
Close Personal Relationship with Management Members	.000
Provision of Non-Audit Services by Statutory Auditor	.000
Complete Prohibition of Non-Audit Services	.000

(Source: Compilation of Primary Data using SPSS 20.0)

It is observed that covariance between each select predictor variable and un-standardised residuals are either zero. Hence, this condition is met.

(iv) The independent variables are not perfectly linearly correlated

When near perfect linear relationship exist between the predictors, it is called the problem of Multicollinearity. If Multicollinearity is present, regression estimates cannot be distinctively computed. They become highly unstable and standard error gets widely exaggerated. Multicollinearity among predictor variables can be measured with help of following tools:

- *Pearson's Correlation Coefficient (r)*

The formula for calculating this r is shown below:

$$r = \frac{n\sum xy - (\sum x)(\sum y)}{\sqrt{n(\sum x^2) - (\sum x)^2}\sqrt{n(\sum y^2) - (\sum y)^2}}$$

Where, x and y represent scores of two predictor variables and n is the sample size. If the absolute value of 'r' for any pair of predictor variables is equal to or more than .8, significant collinearity exist between them. The correlation matrix is shown in Table 4.

Table 4: Correlation Matrix

R	V_2	V_3	V_4	V_5	V_6	V_7	V_8
V_2	1.000	.452	.144	.065	.159	.187	.113
V_3	.452	1.000	.184	.161	.073	.201	.193
V_4	.144	.184	1.000	.130	.065	.063	.080
V_5	.065	.161	.130	1.000	.123	.167	.228
V_6	.159	.073	.065	.123	1.000	.079	-.002
V_7	.187	.201	.063	.167	.079	1.000	.611
V_8	.113	.193	.080	.228	-.002	.611	1.000

(Source: Compilation of Primary Data using SPSS 20.0)

It is seen that none of correlation coefficient is more than .8. Hence, we can infer that there is no Multicollinearity among predictor variables.

- *Tolerance and Variance Inflation Factor (VIF)*

Tolerance is calculated as $(1-R^2_j)$ where R^2_j is the variance of dependent variable explained by j^{th} predictor variable. VIF is just the reciprocal of tolerance level i.e. VIF = 1/Tolerance. Tolerance value less than .10; and VIF value more than 10 indicate severe Multicollinearity (Gujarati, Porter & Gunasekar, 2014). Tolerance level and VIFs for the predictor variables in the current model is shown in Table 5.

Table 5: Collinearity Statistics

Predictor Variables	Tolerance	VIF
Management Influence in Appointment Procedure	.767	1.304
Appointment by Independent Regulatory Authority	.753	1.328
Mandatory Rotation of Auditor	.949	1.053
Setting Maximum Limit on Total Remuneration to Statutory Auditor	.911	1.097
Close Personal Relationship with Management Members	.953	1.049
Provision of Non-Audit Services by Statutory Auditor	.607	1.647
Complete Prohibition of Non-Audit Services	.602	1.662

(Source: Compilation of Primary Data using SPSS 20.0)

The table shows that that tolerance level is more than .10 and VIFs are less than 10 for all predictor variables. So, we can infer that problem of Multicollinearity does not exist among predictors.

(c) Formulation of Regression Equation

The linear regression equation for this current study can be formulated as follows:

$$V_1 = Constant + \beta_1 V_2 + \beta_2 V_3 + \beta_3 V_4 + \beta_4 V_5 + \beta_5 V_6 + \beta_6 V_7 + \beta_7 V_8$$

Where, V_1 represents DV and V_2 to V_8 represent IVs (Refer to Section-5).

A general formula for calculating parameter estimate using Ordinal Least Square (OLS) Method is as follows:

$\Rightarrow$ *Un-standardised* $\beta_i = [\ Cov\ (V_1, V_i) \div Var\ (V_i)\ ]$

Where, i range from 2 to 8

The β calculated based the above formula is un-standardised (Draper & Smith, 1998). With a view to removing such disparity, we can also calculate standardised values of β based on following formula:

$\Rightarrow$ *Standardised* β_i = *Un-standardised* β_i *[Standard Deviation (S.D.) of* $V_i \div$ *Standard Deviation of* V_1*]*

The constant in the above equation can be estimated based on following formula:

$\Rightarrow$ *Estimated value of the constant =Mean value of* $V_1 - \sum$*Un-Standardised* $\beta_i \times$ *Mean score of* V_i,

Where, i range from 2 to 8

Based on the above formulae, estimated the values of values of the parameters as shown in Table 6.

Table 6: Parameter Estimates

Variable No.	Name of Variables	Constant	Regression Coefficient (Un-Standardised)	Regression Coefficients (Standardised)
	Constant	2.317		
V_2	Management Influence in Appointment Procedure		-.007	-.009
V_3	Appointment by Independent Regulatory Authority		.018	.026
V_4	Mandatory Rotation of Auditor		.030	.033
V_5	Setting Maximum Limit on Total Remuneration to Statutory Auditor		.177	.251
V_6	Close Personal Relationship with Management Members		-.045	-.046
V_7	Provision of Non-Audit Services by Statutory Auditor		-.018	-.023
V_8	Complete Prohibition of Non-Audit Services		.114	.146

(Source: Compilation of Primary Data using SPSS 20.0)

Value of constant and un-standardised regression coefficients as obtained from the table can be used for framing the linear regression equation as follows:

$$V_1 = 2.317 - .007V_2 + .018V_3 + .030V_4 + .177V_5 - .045V_6 - .018V_7 + .114V_8$$

Inferences

- From the values of standardised regression coefficients, it is observed that Management Influence in Appointment Procedure, Close Personal Relationship with Management Members, and Provision of Non-Audit Services negatively influence statutory auditors' engagement.
- On the other hand, Appointment by Independent Regulatory Authority, Mandatory Rotation of Auditor, Setting Maximum Limit on Total Remuneration and Complete Prohibition of Non-Audit Services by Statutory Auditors positively influence audit engagement.
- From the magnitude of standardised regression coefficients, it is observed that maximum limit on total remuneration and complete prohibition of non-audit services have higher impact on statutory auditors' engagement than other variables considered in this study.

(d) Analysing Significance of Estimated Relationship

Statistical significance of the parameter estimates is tested using t test. The considerations for the test are as follows:

Hypothesis	H_0: $\beta_i = 0$ H_1: $\beta_i \neq 0$
Underlying sampling distribution	t
Test statistic (t)	Un-standardised β_i/ S.D. of β_i
Degree of Freedom (DF)	n-2 where n = sample size = 601
Level of significance	5%
Decision Rule	If probability (P-Value) of obtaining test statistic at defined DF is less than .05, H_0 cannot be accepted and vice versa.

Result of t test for each of the predictor variable is shown in Table 7.

Table 7: Results of t tests

Variable No.	Name of Variables	βi (Un-standardised)	SD of βi	Calculated value of t	Sig. (P-Value)	Decision Rule	Acceptance or Rejection of H_0
V_2	Management Influence in Appointment Procedure	-.007	.034	-.207	.836	P Value >. 05	Accepted
V_3	Appointment by Independent Regulatory Authority	.018	.032	.581	.561	P Value >. 05	Accepted
V_4	Mandatory Rotation of Auditor	.030	.036	.837	.403	P Value >. 05	Accepted
V_5	Setting Maximum Limit on Total Remuneration to Statutory Auditor	.177	.029	6.153	.000	P Value <.05	Rejected
V_6	Close Personal Relationship with Management Members	-.045	.039	-1.159	.247	P Value >. 05	Accepted
V_7	Provision of Non-Audit Services by Statutory Auditor	-.018	.039	-.451	.652	P Value >. 05	Accepted
V_8	Complete Prohibition of Non-Audit Services	.114	.039	2.920	.004	P Value <.05	Rejected

(Source: Compilation of Primary Data using SPSS 20.0)

Inferences

- On the basis of the current sample, H_0 is accepted for most of the issues. From this result, we can conclude that although in our current sample, management influence in appointment procedure, appointment by independent regulatory authority, mandatory rotation of auditor, and close personal relationship with management members and provision of non-audit services has certain amount of influence on statutory auditors' engagement, from socio-economic point of view they are not very important issues in this respect.
- On the basis of current sample, we cannot accept H_0 for maximum limit on total remuneration and prohibition of non-audit services. Therefore, these two issues are really very important in governing statutory auditors' engagement from socio-economic point of view.

(e) Measuring Strength of Association

In this segment, our main objective is to measure strength of association statutory auditors' engagement and its governing audit engagement issues. The measures used for this purpose and their respective values are shown here:

Measure	Formula for calculation	Value
Coefficient of Multiple Correlation (R)	♦ R = Correlation coefficient between estimated and observed values of DV ♦ Estimated values of DV are obtained from observed values of IVs and corresponding regression coefficients.	.320
Coefficient of Multiple Determination (R^2)	R^2 = [Variance of Estimated Values of DV ÷ Variance of Observed Values of DV]	.102
Adjusted R^2	Adjusted R^2 = R^2 adjusted by the number of predictor variables.	.092

Inferences

- The value of R shows a good positive correlation exists between observed and estimated values of DV. It indicates that estimated values of DV calculated based on IVs strongly influence observed values of DV. Therefore, IVs together have considerable influence on DV.
- The value of R^2 and Adjusted R^2 suggests that a small proportion of total variance of DV is explained by select IVs. Therefore, we can conclude that the issues selected in this present study are not sufficiently explaining statutory auditors' engagement. However, this study is based on opinion of human beings which is difficult to capture as stated earlier. Hence, even a small value of Adjusted R^2 does not render the model

unfit.

(f) **Fitness of the Model**

The regression model is fit, if the strength of association between DV and IVs are statistically significant. Statistical significance of strength of association between DV and IVs can be tested using one way ANOVA. The modality of the test is stated below:

Hypothesis	H_0: $R^2 = 0$ H_1: $R^2 \neq 0$
Underlying distribution	F Distribution
Degree of Freedom	k-1 & n-k where n = sample size = 601 and k = number of predictor variables = 8
Test statistic (F)	F = Mean Sum of Squares (MSS) $_{Regression}$ ÷ MSS $_{Residual}$ Where, MSS $_{Regression}$ = Variance of DV Explained by the Regression Equation [Total Sum of Squares (TSS) $_{Regression}$]÷ (k-1) & MSS $_{Residual}$ = Variance of DV not Explained by the Regression Equation [TSS $_{Residual}$] ÷ (n-k)
Level of significance	5%
Decision rule	If the probability (P-Value) at (7,593) degree of freedom is less than .05, H_0 cannot be accepted and vice versa.

The result of the test is shown in Table 8.

Table 8: Result of one way ANOVA

	Sum of Squares	Degree of freedom	Mean Square	F	P-Value	Decision Rule	Acceptance or Rejection of H_0
Regression	46.980	7	6.711	9.673	.000	P-Value<.05	Rejected
Residual	411.423	593	.694				
Total	458.403	600					

(Source: Compilation of Primary Data using SPSS 20.0)

It is observed that H_0 is rejected. It signifies that although the value of R^2 estimated based on current sample is small, strength of association between statutory auditors' independent operation and all other explanatory variables is statistically significant. Therefore, we can finally conclude that select audit engagement issues together have considerable influence on statutory auditors' engagement.

7. Conclusions

In recent cases of corporate failures, it has been observed that statutory auditors failed to perform an independent audit. In this study, we have made multiple linear regression analysis to study the impact of underlying variables on statutory auditors' engagement. Our result suggests that a few variables like management influence in appointment procedure, close personal relationship with management members and provision of non-audit services negatively influence statutory auditors' engagement and prohibits them to make independent audit. On the other hand, some variables including appointment made by independent regulatory authority, mandatory rotation, setting a maximum limit on total remuneration and complete prohibition on non-audit services could safeguard their engagement. Maximum limit on total remuneration and complete prohibition of non-audit services are the most important issues in the current study from socio-economic point of view. Hence, this study suggests regulatory authorities of India to consider these two proposals for future regulatory amendments. Though all the identified issues together do not considerably explain statutory auditors' engagement based on current sample of the study, strength of association between statutory auditors' engagement and other related issues are statistically significant. It indicates audit engagement issues called underlying variables selected for the current study are significantly governing statutory auditors' engagement.

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