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Impact of Audit Engagement Issues on Statutory Auditors' Professional Judgment: An Empirical Analysis

Prof. (Dr.) Siddhartha Sankar Saha*
Senior Faculty, Department of Commerce (Accounting & Finance), St. Xavier's College (Autonomous), Kolkata, & Guest Faculty, Department of Commerce (MBA- Finance), University of Calcutta, West Bengal, India
Postal Address: 245/1 Dum Dum Road, Santosh Apartment, Flat No. 305, 3rd Floor, Kolkata – 700074, Dum Dum, West Bengal, India
Email id: drsiddharthasxc@gmail.com

Mitrendu Narayan Roy
Junior Research Fellow (UGC-NET), Department of Commerce, University of Calcutta, West Bengal, India
Postal Address: Flat No. 4B (Block B), 3rd Floor, Tanisha Enclave, 66, Sarat Bose Road, Rabindranagar, Dum Dum, Kolkata – 700065, West Bengal, India
Email id: mitrenduroy@gmail.com

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Abstract
Statutory auditors are required to exercise their professional judgement while auditing company's Financial Statements. But in recent cases of corporate failures, statutory auditors failed to perform quality audit with required professional judgement. The study identifies 13 significant issues that influence positively or negatively professional judgment of statutory auditors. Opinion of respondents from 6 different occupations is collected on these issues and professional judgement of statutory auditors. Exploratory factor analysis is conducted on the collected data to extract underlying factors governing statutory auditors' professional judgement. Impact of extracted factors on statutory auditors' professional judgement is analysed using Multiple Linear Regression Analysis. Statistical significance of each extracted factors are analysed using t test. Strength of association between extracted factors and professional judgement is measured using Coefficient of Multiple Determinations. Finally, fitness of the regression model is tested using one way Analysis of Variance.
Keywords: Statutory Auditors, Professional Judgement, Audit Engagement, Exploratory Factor Analysis, Multiple Linear Regression Analysis
JEL Classification Code: M420, M480

1. Introduction

Stakeholders of a corporate enterprise take their financial decision based on periodic authentic and reliable financial statements of corporate enterprise. Therefore, statutory auditors are appointed by the shareholders of the corporate enterprise to attest material correctness and fair representation of financial statements and express their opinion on 'true and fair' view of operational affairs of the business (Gupta, 1999). Statutory auditors are professional accountants external to the business enterprise (Banerjee, 2002). They exercise their relevant knowledge, experience and training within the context provided by auditing and ethical standards and take informed decision about the course of actions that are appropriate in the circumstances of the audit engagement. According to Standard on Auditing (SA), 200 on 'Overall Objective of the Independent Auditor and Conduct of an Audit in Accordance with SA', this entire practice is known as Professional Judgement of statutory auditors. If statutory auditors are able to exercise professional judgement within the context of applicable regulatory framework, they can provide a quality audit.

In recent cases of corporate failures [e.g. Enron Corporation Ltd. (USA, 2001); Parmalat SpA (Italy, 2002), Satyam Computer Services Ltd. (India, 2009) etc.], financial manipulations in company's financial statement led to disastrous consequences to the stakeholders of the company and economy of the country as a whole (Banerjee, 2011). When these massive scandals came to surface, ensuing regulatory investigations identified those big and reputable accounting firms [e.g. Arthur Anderson LLP, Price Waterhouse Coopers (PWC), Ernst & Young etc.] serving as statutory auditors in most of these companies failed to show professional judgement (Copeland, 2005). Notable researches into this matter have explored certain audit engagement issues [e.g. appointment of statutory auditors, tenure of service, provision of non-audit services, strong audit committee etc.] and certain external issues [e.g. sufficiency and enforceability of regulatory framework, effectiveness of audit inspection

mechanism etc.] that possibly caused statutory auditors to compromise their professional judgements in those engagements.
In this backdrop, the study identifies certain significant issues influencing statutory auditors' professional judgement positively or negatively. In this study, an attempt has also been made to extract the underlying factors governing statutory auditors' professional judgement based on select issues. Impact of these extracted factors on statutory auditors' professional judgement is within the scope of this present research as well.

2. Past Studies

Distinguished scholars across the Globe have recognised the importance of professional judgement of statutory auditors in an audit engagement. With reference to select accounting scandals, they have also identified the audit engagement issues on a few studies influencing professional judgement positively or negatively.

Freier (2005) in his study provided a historical count of evolution of professionalism and independence in auditing profession. Integrity, objectivity and independence of a statutory auditor influences usefulness of financial statement. Thibodeau and Freier (2010) in their book analysed select American corporate accounting scandals and highlighted statutory auditors' professional responsibilities in them. In each of these cases, the authors identified the major reasons that caused the statutory auditors' to compromise their professional judgement. Fearnley, et. al. (2005) in their research paper also analysed several corporate accounting scandals and identified important factors that positively or negatively affect statutory auditors' professional judgement. Roy (2014) in his research based article based on opinion of respondents indentified the underlying factors governing statutory auditors' professional judgement. Research article by Roy & Saha (2014) went step further by analysing significant difference among select occupational groups for extracted factors. According to Roussouw et. al. (2010) and Gowthrope and Blake (2007), regulatory framework for statutory auditors does not always address all forms of audit engagement issues. Hence, Rao (2009) in this study proposed a constant modification in the regulatory framework is necessary in line with global requirement. However, Bakshi (2000) in his research focussed on proper enforcement of existing regulation. Global convergence of audit regulations is proposed by Pendergast (2002) in his research. It is expected to resolve engagement dilemmas of statutory auditors in cross country audit engagements. Ghosh (1999) in his perception based study concluded that management controls statutory audit operation in a company by controlling their appointment. According to Beaulieu & Reinstein (2006) provision of non-audit services often influence independent review of audit work. Certain monitoring bodies within or outside the audit engagement sometimes safeguard statutory auditors' independence and allow them to exercise professional judgement in an audit engagement. Godbole (2004) in his study identifies some of these monitoring bodies. According to him, Audit Committee in an audit engagement plays an important role in safeguarding auditor from management's threat. Presence of an oversight body for auditors is also strongly advocated by him in his research. Gerotra and Baijal (2002) in their research promoted an effective audit inspection mechanism in India led by Peer Review Committee of Council of Chartered Accountants.

2.1. Research Gap

Major gaps identified in existing literatures are highlighted as follows:

- Studies identifying major audit engagement issues influencing statutory auditors' professional judgement are less in number in India;
- Number of empirical researches in this field are less in number;
- Recent empirical studies based on primary data only considers opinion of statutory auditors. Participation of respondents from varied occupations is not observed in literatures reviewed so far;
- None of the studies reviewed so far, identifies underlying factors governing statutory auditors' professional judgement; and
- Impact of extracted factors on statutory auditors' professional judgement has not been taken up for regression analysis in recent studies.

3. Objectives of the Study

The major objectives of the study keeping in mind research gap are pointed out as follows:

- To identify certain audit engagement issues that influence professional judgement of statutory auditors [*Refer to Table 1, Section V*];
- To explore the underlying factors governing statutory auditors' professional judgement based on select issues [*Refer to Table 3, Section VI (iii) (c)*];

- To study the impact of extracted factors on statutory auditors' professional judgement [*Refer to Table 5, Section VI (iv) (c)*];
- To identify the factors out of those extracted which has significant influence on statutory auditors' professional judgement [*Refer to Table 6, Section VI (iv) (d)*];
- To measure the extent to which extracted factors explain statutory auditors' professional judgement [*Refer to Section VI (iv) (e)*];
- To analyse significance of strength of association between statutory auditors' professional judgement and its explanatory factors [*Refer to Section VI (iv) (f)*];
- To draw a suitable conclusion of the study.

4. Research Methodology

Nature of Research		Exploratory and Empirical		
Nature of Data		Primary as well as Secondary		
Secondary Data Collection		Books, Journal Articles, Newspaper Articles, Legislations		
Secondary Data Collection		Field Survey		
Survey Area		Kolkata, West Bengal		
Survey Period		June, 2011 to December, 2013		
Primary Data Collection Tool		Pre-Tested, Close Ended, Structured Questionnaire		
Number of Statements in the Questionnaire		14		
Measurement Scale		5 Point Scale (Kothari, 2010)		
Respondents	**Sampling Frame**	**Rationale for Selection**	**Initial Sample**	**Data Collected**
Chartered Accountants (CAs)	In practice/ service	Statutory auditors	150	101
Cost and Management Accountants (CMAs)	In practice/ service	Statutory auditors	150	94
Academicians	College, Universities or Business Schools	Academic and research knowledge	150	111
Students	Chartered Accountancy course finalist	New ideas in this field	150	118
Investors	Retail Investors and representative from Institutional investing companies	Directly affected by auditors' work	100	86
Corporate Executives	Accounts department executive from private or public sector companies	Close associate to statutory auditors and help them in audit process	100	91
Total Data			**800**	**601**
Sampling Technique		**Convenience Sampling (Ho, Ong & Seonsu, 1997)**		
Data Analysis				
Objective		**Particular Analysis**		
(a) Reliability of Collected Data		• Chronbach's alpha		
(b) Testing correlation among variables		• Bartlett's Sphericity		
(c) Measuring adequacy of sample base		• Kaiser Meyer Olkin Measure		
(d) Extracting underlying factors		• Exploratory Factor Analysis (EFA)		
(e) Exploring impact of extracted factors on *Statutory Auditors' Professional Judgement* (Dependent Variable)		• Multiple Linear Regression Analysis		
(f) Testing statistical significance of extracted factors		• T test		
(g) Measuring strength of association between dependent variable and extracted factors		• Coefficient of Multiple Determination (R^2)		

(h) Testing significance of strength of association	• One way Analysis of Variance (ANOVA)
(i) Data Analysis Package	• SPSS 19.0

5. Identification of Audit Engagement Issues

In this section, the main objective is to identify select audit engagement issues influencing professional judgment of a statutory auditor positively or negatively. Notable researches and existing regulatory pronouncements identifies several issues that may have certain amount of impact on professional judgement of statutory auditors. Here, a few of such issues have been selected for our empirical analysis. In this study, ultimate objective is to analyse the impact of underlying factors on statutory auditors' professional judgement. Hence, Professional Judgement of Statutory Auditor is the Dependent Variable (DV) for our current study, while a select 13 Issues that influence professional judgement are the Independent Variables (IVs). We performed EFA on these IVs, and extracted certain factors representing these initially selected 13 variables. These factors can be called Independent Factors (IFs) and have been used for our Regression Analysis. Let us present our initially selected 14 variables and rationale for their selection here.

Table 1: Identification of Variable

Variable Code	Variable Name	Rationale for Selection
Dependent Variable (DV)		
V_1	*Statutory Auditors' Professional Judgement*	Statutory Auditors (SA) are able to show professional judgement in their audit procedure only when they are not influenced or intimidated by the management of the audit engagement.
Independent Variables (IVs)		
V_2	*Insufficiency of regulatory framework*	If regulatory framework is not sufficient to address statutory auditors' engagement related issues in an audit engagement, it will prohibit them from exercising professional judgement
V_3	*Amendment in regulatory framework in line with global requirement*	Amendment in existing regulatory framework in line with global scenario will address the insufficiency and help statutory auditors to achieve professional judgement
V_4	*Lack of Enforceability of regulatory framework*	Even if the regulations are sufficient, if it is not properly enforced the auditor will face same problems
V_5	*Influence of Global Regulatory Bodies*	Global regulatory convergence would allow global regulatory bodies to monitor audit practices in our country which may have positive or negative influence on professional judgement of statutory auditors
V_6	*Management Influence in Appointment of SA*	Management influence in appointment of SA, makes them dependent on management for obtaining an engagement
V_7	*Appointment by Independent Regulatory Authority*	Appointment made by an independent regulatory authority could safeguard an SA from the aforesaid problem.
V_8	*Long Association with Client*	A long association with an audit client creates familiarity between SA and its client which induces the former to issue a clean report
V_9	*Mandatory Rotation of Auditor*	Mandatory rotation after 5 years as pronounced by recent Companies Act, 2013 will reduce long association between SA and client.
V_{10}	*Provision of Non-Audit Services by Statutory Auditor*	Certain non-audit services influence independent review by an auditor [Code of Ethics for Professional Accountants, Institute of Chartered Accountants of India (ICAI)]
V_{11}	*Complete Prohibition of Non-Audit Services*	Complete prohibition on provision of non-audit services by statutory auditors help a statutory auditor to avoid threats to professional judgement arising out of such services.
V_{12}	*Strong Audit Committee*	A strong audit committee hold back management from controlling sensitive issues that have significant influence on professional judgement of statutory auditors.
V_{13}	*Effective Audit Inspection Mechanism*	Effective audit inspection mechanism enforce existing regulatory framework
V_{14}	*Establishment of Oversight Authority*	Establishment of an oversight authority will ensure a constant monitoring on professional judgement exercised by SAs in an audit engagement.

6. Empirical Analysis of Respondents' Perception and Discussion

Opinion of respondents from six different occupations has been collected in terms of their degree of agreement on a particular issue. As mentioned in the research methodology, a score of 1 to 5 has been given against different degrees of agreement. The opinion of respondents represented by these scores along with demographic profile 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 considered in the current study is shown here:

Table 2: Demographic Profile of Respondents

Demographic Profile Based on Gender											
Male		%		Female		%					
522		86.9		79		13.1					
Demographic Profile Based on Age											
Young (Age < 30 years)		%		Middle Aged (Age 30-50 years)		%		Experienced (Age > 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)

Occupation is the main driver for selection of respondents. Most of the respondents in our current sample are male. Demographic profile of respondents based on age suggests that respondents with different experience level are incorporated in our research.

6.2. Reliability of Collected Data

Chronbach's alpha (Chronbach, 1951) measures internal consistency and reliability of the data. Alpha value ranges within 0 to 1. Internal consistency and reliability of the data is satisfactory if the calculated value of alpha is more than 0.6 (Nunnally, 1978). In our study, the calculated value of alpha for select 14 variables is 0.6171 which is more than 0.6. Therefore, the data in our present study is reliable and it does not suffer from any sampling bias.

6.3. Extracting Underlying Factors Governing Statutory Auditors' Professional Judgement using Exploratory Factor Analysis (EFA):

Variables which have high correlations among themselves are grouped into individual factors (Tacq, 1996). The main objective in this section is to identify the underlying factors from the IVs selected in Table 1.

6.3.1. Conditions for performing EFA

- ***Condition – 1: Variables should be internally correlated.***

In order to test the same, we take following hypothesis:

Hypothesis--1

(a) Null Hypothesis (H_0): Correlation Matrix of Variables is an identity matrix

(b) Alternate Hypothesis (H_1): Correlation Matrix is not an identity matrix

In order to test the above hypothesis, we conduct Bartlett's Test of Sphericity at 5% level of significance and k× (k-1)÷2 degrees of freedom, where k = number of independent variables = 13. The test statistics follows Chi-Square distribution. Its approximated value for this current study is 1264.794. If the probability of obtaining this value (P-Value) at 78 [13×12÷2] degrees of freedom is less than .05, H_0 is rejected and vice versa. In this study, P-Value is .000 which is less than .05. Hence, on the basis of the current sample, H_0 cannot be accepted. Hence, it signifies that the correlation matrix of variables is not an identity matrix and the variables are internally correlated.

- ***Condition – 2: Sample must be adequate***

Kaiser Meyer Olkin (KMO) measure is used to study the adequacy of sample base. If the value of KMO is more than .5, it can be inferred that the sample is adequate (Malhotra, 2003). In our analysis, the calculated value of

KMO is .632. Hence, it is an acceptable figure to conclude that the sample is adequate. As both the conditions for performing EFA are satisfied, hence we can proceed with EFA.

6.3.2. Method of conducting EFA

• *Factor Extraction Method*	• Principle Component Method (Hotelling, 1933)
• *Selection of number of Factors*	• Factors with Eigen Value more than 1 are extracted
• *Technique for Rotating Factor Loading Matrix for grouping individual variables into extracted factors*	• Orthogonal [Assumption for taking this technique is extracted factors are uncorrelated among themselves]
• *Method of Rotation*	• Varimax with Kaiser Normalisation (Kaiser, 1958)
• *Iterations*	• 5

6.3.3. Factor Analysis Results

Eigen value of each extracted factors, percentage of variance explained by them, extracted communality of grouped variables, and factors identified based on variables grouped under them along with their rotated factor loadings are exhibited here:

Table 3: Results of Factor Analysis

Variable No.	Variable Name	Extracted Communality	Rotated factors loadings	Factors	Factors Name	Eigen Value	Percentage of Variance Explained
V_{10}	Provision of Non-Audit Services by Statutory Auditor	.804	.876	1	**Impact of Non-Audit Services**	**2.709**	**20.835**
V_{11}	Complete Prohibition of Non-Audit Services	.811	.874				
V_8	Long Association with Client	.761	.854	2	**Impact of Long Association with Client**	**1.598**	**12.289**
V_9	Mandatory Rotation of Auditor	.766	.869				
V_5	Influence of global regulatory bodies	.499	.677	3	**Influence of Monitoring Bodies**	**1.331**	**10.237**
V_{12}	Strong Audit Committee	.641	.765				
V_{13}	Effective Audit Inspection Mechanism	.451	.624				
V_6	Management Influence in Appointment of SA	.764	.854	4	**Impact of Appointment Procedure**	**1.193**	**9.176**
V_7	Appointment by Independent Regulatory Authority	.666	.762				
V_2	Insufficiency of regulatory framework	.711	.812	5	**Limitations in Existing Regulatory Framework**	**1.167**	**8.974**
V_4	Lack of Enforceability of regulatory framework	.701	-.817				
V_3	Amendment in regulatory framework in line with global requirement	.726	.810	6	**Influence of Global Regulation**	**1.037**	**7.978**
V_{14}	Establishment of Oversight Authority	.732	.816				
Total Percentage of Variance Explained							69.489

(Source: Compilation of primary data using SPSS)

Inferences:

- Extracted communality for a particular variable represents the percentage of variance of that variable explained by all the extracted factors. Higher the value of extracted communality, more the corresponding variable is important in the current factor model. In our study, 'Complete Prohibition of Non-Audit Services' has highest extracted communality (.811). Therefore, it is the most important variable in the development of the factor model. On the other hand, 'Effective Audit Inspection Mechanism' is the least important variable in the model in terms of their extracted communality (.451).
- A total of six factors have been extracted based on Eigen value.
- Variables having highest rotated factor loading with an extracted factor is grouped under it. Based on this rule, we have identified the underlying variables of each extracted factors. The nature of variables grouped

under a factor is instrumental in naming that factor and accordingly the factor's name is explored. Major factors governing professional engagement of SA are – 'Impact of Non-Audit Services'; 'Impact of Long Association with Client'; 'Influence of Monitoring Bodies'; 'Impact of Appointment Procedure'; 'Limitations in Existing Regulatory Framework'; and 'Influence of Global Regulation'.

- On the basis of percentage of variance explained by each of the factor, it is observed that 'Impact of Non-Audit Services' explains maximum percentage of variation in the data. Hence it is the most important factor governing SA's professional judgement. On the contrary, 'Influence of Global Regulation' is the least important factor in terms of their percentage of variance explained.
- In social science research, if the extracted factors explain more than 60% of the variance in the data, the model is considered to be good. In this study, it explains 69.489% of the overall variance. Hence, it can be concluded that extracted factors well represent the select variables.

6.3.4. Fitness of the Factor Model

Fitness of the factor model is tested using Residual Correlation Matrix (Table 3, Appendix-1). It is obtained by deducting Reproduced correlation matrix (Table 2, Appendix-1) from the original correlation matrix (Table 1, Appendix-1) of variables. Reproduced correlation matrix is based on estimated correlation between variables and factors. Diagonal of this matrix is extracted communalities. If number of residuals with magnitude more than .05 in residual matrix is less than 50% of the total number of residuals in the matrix, we consider our model to be fit (Sarkar et. al., 2011). In the present study, percentage of non-redundant residuals with absolute values greater than .05 is only 28%. It is much less than our specified threshold. Hence, it can be concluded that the model is fit and extracted factors well represent the data.

6.3.5. Calculation of Factor Scores for Further Analysis

Uncorrelated factors can be represented as a linear combination of observed variables as follows:

$$\Rightarrow \mathbf{F_i = w_1V_1 + w_2V_2 + ...+ w_kV_k}$$

Where,

- F_i = *Factor score for* i^{th} *factor*
- w = *weight of factor score coefficient*
- k =*number of variables*

Factor score coefficients for each identified factors are obtained from Component Score Coefficient Matrix (Table 4, Appendix-1). Based on estimated values of factor score coefficients obtained from the table and observed scores for each variable, we can estimate the factor score for each respondent (Gaur, et. al. 1997). This score will be the data for our further analysis. In this way, EFA reduces our number of explanatory variables from 13 to 6. In next segment, the impact of each extracted factor on professional judgement of SA based on these estimated factor scores can be analysed.

6.4. Analysing Impact of Extracted Factors on Statutory Auditors' Professional Judgement using Multiple Linear Regression Analysis

This segment makes an attempt to analyse the impact of extracted factors on statutory auditors' professional engagement. Hence, statutory auditors' professional engagement (DV) depends upon Independent Factors (IFs).

Table 4: Variables under Study

Code	Name
Dependent Variable (DV)	
$\mathbf{V_1}$	Statutory Auditors' Professional Judgement
Independent Factors (IFs)	
$\mathbf{F_1}$	Impact of Non-Audit Services
$\mathbf{F_2}$	Impact of Long Association with Client
$\mathbf{F_3}$	Influence of Monitoring Bodies
$\mathbf{F_4}$	Impact of Appointment Procedure
$\mathbf{F_5}$	Limitations in Existing Regulatory Framework
$\mathbf{F_6}$	Influence of Global Regulation

In this study, we assume that a linear relationship exists between DV and extracted IFs. With a view to ascertaining the nature and direction of relationship between them, we are using Multiple Linear Regression Analysis (MLRA).

6.4.1. Conditions for Performing MLRA (Malhotra, 2003)

- ***Condition – 1: Sample size should be more than independent variables***

In this study, number of independent variables represented by extracted factors is 6, whereas total sample size is

601. It is much higher than number of independent variables. Hence, the first condition for conducting MLRA is fulfilled.

- ***Condition – 2: Each two independent variable should not have perfect correlation between them***

The main assumption of EFA is extracted factors are uncorrelated. Therefore, correlation coefficient between each two extracted factors is 0 and the correlation matrix for the extracted factors is an identity matrix. It satisfies the 2nd condition for conducting MLRA.

6.4.2. Formulation of Regression Equation

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

$\Rightarrow$ **$V_1 = \text{Constant} + \beta_1F_1 + \beta_2F_2 + \beta_3F_3 + \beta_4F_4 + \beta_5F_5 + \beta_6F_6$**

In the equation, β corresponding to each IFs represents the nature and direction of relationship between that IF and V_1. They are called regression coefficients.

6.4.3. Analysing Impact of Individual Factors

In this section, the main objective is to estimate the values of regression coefficients to understand the nature and direction of relationship between each extracted factor and statutory auditors' professional judgement. The value of β for the ith factor can be estimated as follows:

$\Rightarrow$ **$\beta_i = \text{Cov}(F_i V_1) / \text{S.D of } F_i$**

β calculated based on above formula is un-standardised β if different factors are denominated in different units. In order to do away with this problem, we need to standardise the β values based on following formula (Draper & Smith, 1998):

$\Rightarrow$ **Standardised β_i = Un-standardised β_i (Standard Deviation of F_i/ Standard Deviation of V_1)**

Standardised regression coefficients for the identified factors are exhibited here:

Table 5: Standardised Regression Coefficients

Factor Code	Factors	Standardised Regression Coefficient
F_1	Impact of Non-Audit Services	-.014
F_2	Impact of Long Association with Client	-.108
F_3	Influence of Monitoring Bodies	.046
F_4	Impact of Appointment Procedure	-.057
F_5	Limitations in Existing Regulatory Framework	-.157
F_6	Influence of Global Regulation	-.044

(Source: Compilation of primary data using SPSS)

Inferences:

- It is observed that Impact of Non-Audit Services, Impact of Long Association with Client, Impact of Appointment Procedure and Limitations in Existing Regulatory Framework negatively affect professional judgement of statutory auditors.
- Though Indian regulatory authorities today are adopting several provisions of regulatory pronouncements of other developed countries, according to our present sample, it will not have a positive effect on statutory auditors' professional judgement.
- On the other hand, Monitoring Bodies have positive influence on statutory auditors' professional judgement.

6.4.4. Analysing Statistical Significance of Individual Factors

This section aims to identify those factors out of six extracted having significant impact on statutory auditors' professional judgement. For this purpose, we need to analyse the statistical significance of regression coefficients based on following hypothesis:

Hypothesis--1

(a) H_0: Relationship between V_1 and IF_i is not significant (i.e. $\beta_i = 0$)

(b) H_1: Relationship between V_1 and IF_i is significant (i.e. $\beta_i \neq 0$)

In order to test the above hypothesis, we apply t test with test statistics -

$\Rightarrow$ **t = Un-Standardised β_i/ S.D. of β_i**

At n-2 degrees of freedom and 5% level of significance, if the probability of obtaining calculated value of t (P-Value) in t-distribution table is less than .05, H_0 is rejected and vice versa. Results of t tests for each extracted factor are shown here:

Table 6: Results of t Tests

Factor Code	Factors	Un-Standardised β	S.D. of β	Calculated value of t	P-Value	Decision Rule	Acceptance of H_0
F_1	Impact of Non-Audit Services	-.006	.016	-.361	.719	P-Value>.05	Accepted
F_2	Impact of Long Association with Client	-.043	.016	-2.687	.007	P-Value<.05	Rejected
F_3	Influence of Monitoring Bodies	.018	.016	1.145	.253	P-Value>.05	Accepted
F_4	Impact of Appointment Procedure	-.023	.016	-1.415	.157	P-Value>.05	Accepted
F_5	Limitations in Existing Regulatory Framework	-.063	.016	-3.912	.000	P-Value<.05	Rejected
F_6	Influence of Global Regulation	-.018	.016	-1.106	.269	P-Value>.05	Accepted

(Source: Compilation of primary data using SPSS)

Inferences:

- On the basis of the current sample, H_0 is accepted for F_1, F_3, F_4 and F_6. It suggests that non-audit services, monitoring bodies, appointment procedure and influence of global regulation do not significantly impact professional judgement of statutory auditors.
- On the other hand, H_0 cannot be accepted for F_2 and F_5 based on our current sample. Hence, nexus with management created out of long association and limitations in existing regulatory framework are significant factors governing statutory auditors' professional judgement.

6.4.5. Measuring Strength of Association between Statutory Auditors' Professional Engagement and Explanatory Factors

This section finds out how far statutory auditors' professional engagement is explained by the extracted factors. We can estimate the values of V_1 based on estimated values of β and observed values of IFs in the linear regression equation. Variance of estimated values of V_1 is called explained variance and variance of observed values of V_1 is called total variance. The ratio of explained variance to total variance is represented by Coefficient of Multiple Determinations (R^2) (Smith and Cooper-Martin, 1997). The value of R^2 lies between 0 and 1. More the value is close to 1, more the total variance of V_1 is explained by all the IFs. Hence, we can conclude that extracted factors satisfactorily explain statutory auditors' professional judgement. In our study, the value of R^2 is .044. It signifies that only 4.4% of the total variance of statutory auditors' professional judgement is explained by the extracted factors. Technically, this figure is too less to conclude that extracted factors satisfactorily explain statutory auditors' professional judgement. It proves that we are considering some important factors in our model which might have better influence on the issue. The main reason behind such small figure of R^2 is the factor model explains only 69.489% of the total variance of initial variables. In this way, before starting our linear regression equation, we have already lost a significant portion of variance of IVs. Therefore, a significant portion of the characteristics of IVs are not reflected by these extracted factors which ultimately led to explanation of a small proportion of variance of the dependent variable by them. However, as human behaviour is difficult to capture, certain social science research accepts even a small value of R^2 (Bedeian & Mossholder, 1994).

6.4.6. Testing Model Fitness

Calculated value of R^2 represents the strength of association between statutory auditors' professional judgement and all its explanatory factors. Low value of R^2 calculated in the above segment suggests a weak association and question validity of the model. However, as stated earlier, a low value may not be always representative of a weak association. The significance of strength of association can be analysed based on following hypothesis:

Hypothesis--1

(a) H_0: Strength of association is not significant (i.e. $R^2 = 0$)

(b) H_1: Strength of association is significant (i.e. $R^2 \neq 0$)

The above hypothesis can be tested using one way ANOVA where test statistics is as follows:

$\Rightarrow$ **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)***

Here, n is the number of sample = 601 and k is the number of variables = 7 (6 factors and 1 DV). At (k-1 & n-k) i.e. (6, 594) degrees of freedom and 5% level of significance, if the probability of obtaining calculated value of F (P-Value) is less than .05, H_0 is rejected and vice versa. In our study, the calculated value of F is 4.532 and the corresponding P-Value is less than .001. As the P-Value is less than .05, H_0 is rejected. Hence, it can be concluded that extracted factors are unable to explain a significant portion of the statutory auditors' professional engagement in the current sample, while their strength of association for the entire population is significant and the model is valid.

7. Conclusions

Factor analysis extracts 6 underlying factors governing statutory auditors' professional engagement. They are impact of non-audit services, impact of long association, influence of monitoring bodies, impact of appointment procedure, limitations in existing regulations and influence of global regulation in the order of importance. From the number of non-redundant residuals less than .05, we can render the model as good fit to the observed data. Now, with a view to analysing impact of the extracted factors on statutory auditors' professional judgement, the individual factor scores for each respondent have been estimated and Multiple Linear Regression Analysis have been conducted. The estimated values of standardised regression coefficients suggest that except monitoring bodies, all other factors negatively influence statutory auditors' professional judgement. Statistical significance of the regression coefficient of the regression coefficient is tested using t test. The result suggests that long association with audit client and limitations in existing regulation are the two significant factors governing statutory auditors' professional judgement. Recent Companies Act, 2013 addresses limitations in professional judgements arising out of these two factors. The value of R^2 suggests that all the extracted factors do not properly explain statutory auditors' professional judgement. However, the result of F test used to analyse significance of R^2 suggests that R^2 is significant for the population and the regression model is valid.

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Appendix-1

Table 1: Correlation Matrix of Variables

Correlation Coefficient	V_2	V_3	V_4	V_5	V_6	V_7	V_8	V_9	V_{10}	V_{11}	V_{12}	V_{13}	V_{14}
V_2	1.000	-.046	-.380	-.137	-.123	-.092	.001	-.010	-.130	-.207	-.123	-.086	-.183
V_3	-.046	1.000	.073	.185	.067	.145	.113	.106	.166	.164	.182	.093	.379
V_4	-.380	.073	1.000	.109	.132	.104	.168	.099	.143	.188	.036	.040	.077
V_5	-.137	.185	.109	1.000	.009	.181	.052	.059	.121	.147	.315	.183	.144
V_6	-.123	.067	.132	.009	1.000	.452	.209	.144	.187	.113	-.063	.084	.162
V_7	-.092	.145	.104	.181	.452	1.000	.194	.184	.201	.193	.112	.080	.169
V_8	.001	.113	.168	.052	.209	.194	1.000	.569	.087	.048	.028	.015	.039
V_9	-.010	.106	.099	.059	.144	.184	.569	1.000	.063	.080	.119	-.001	.035
V_{10}	-.130	.166	.143	.121	.187	.201	.087	.063	1.000	.611	.091	.096	.139
V_{11}	-.207	.164	.188	.147	.113	.193	.048	.080	.611	1.000	.204	.117	.095
V_{12}	-.123	.182	.036	.315	-.063	.112	.028	.119	.091	.204	1.000	.232	.065
V_{13}	-.086	.093	.040	.183	.084	.080	.015	-.001	.096	.117	.232	1.000	.141
V_{14}	-.183	.379	.077	.144	.162	.169	.039	.035	.139	.095	.065	.141	1.000

Table 2: Reproduced Correlation Matrix

	V_2	V_3	V_4	V_5	V_6	V_7	V_8	V_9	V_{10}	V_{11}	V_{12}	V_{13}	V_{14}
V_2	.711	-.040	-.658	-.202	-.135	-.081	.015	.055	-.125	-.208	-.101	-.119	-.205
V_3	-.040	.726	.011	.225	.012	.108	.146	.159	.212	.181	.185	.080	.643
V_4	-.658	.011	.701	.111	.140	.068	.206	.163	.142	.214	.033	-.011	.116
V_5	-.202	.225	.111	.499	-.002	.174	.051	.099	.082	.168	.533	.425	.176
V_6	-.135	.012	.140	-.002	.764	.665	.230	.145	.199	.109	-.157	.125	.210
V_7	-.081	.108	.068	.174	.665	.666	.254	.207	.254	.195	.076	.262	.217
V_8	.015	.146	.206	.051	.230	.254	.761	.755	.057	.045	.073	-.081	.009
V_9	.055	.159	.163	.099	.145	.207	.755	.766	.061	.065	.153	-.050	-.023
V_{10}	-.125	.212	.142	.082	.199	.254	.057	.061	.804	.788	.121	.043	.112
V_{11}	-.208	.181	.214	.168	.109	.195	.045	.065	.788	.811	.231	.099	.061
V_{12}	-.101	.185	.033	.533	-.157	.076	.073	.153	.121	.231	.641	.432	.037
V_{13}	-.119	.080	-.011	.425	.125	.262	-.081	-.050	.043	.099	.432	.451	.106
V_{14}	-.205	.643	.116	.176	.210	.217	.009	-.023	.112	.061	.037	.106	.732

Table 3: Residual Correlation Matrix

	V_2	V_3	V_4	V_5	V_6	V_7	V_8	V_9	V_{10}	V_{11}	V_{12}	V_{13}	V_{14}
V_2		-.006	.278	.064	.012	-.011	-.014	-.065	-.005	.001	-.022	.032	.022
V_3	-.006		.062	-.040	.055	.037	-.033	-.054	-.046	-.017	-.003	.013	-.264
V_4	.278	.062		-.002	-.008	.036	-.038	-.063	.001	-.026	.003	.050	-.039
V_5	.064	-.040	-.002		.011	.007	.001	-.040	.038	-.021	-.219	-.242	-.032
V_6	.012	.055	-.008	.011		-.213	-.020	-.001	-.012	.005	.093	-.040	-.048
V_7	-.011	.037	.036	.007	-.213		-.060	-.023	-.053	-.002	.037	-.182	-.048
V_8	-.014	-.033	-.038	.001	-.020	-.060		-.186	.030	.002	-.044	.096	.030
V_9	-.065	-.054	-.063	-.040	-.001	-.023	-.186		.002	.015	-.033	.050	.058
V_{10}	-.005	-.046	.001	.038	-.012	-.053	.030	.002		-.177	-.030	.053	.028
V_{11}	.001	-.017	-.026	-.021	.005	-.002	.002	.015	-.177		-.028	.018	.034
V_{12}	-.022	-.003	.003	-.219	.093	.037	-.044	-.033	-.030	-.028		-.200	.028
V_{13}	.032	.013	.050	-.242	-.040	-.182	.096	.050	.053	.018	-.200		.035
V_{14}	.022	-.264	-.039	-.032	-.048	-.048	.030	.058	.028	.034	.028	.035	

Table 4: Component Score Coefficient Matrix

	Component					
	1	2	3	4	5	6
V_2	.067	.099	-.030	.013	-.606	.007
V_3	.037	.074	-.028	-.150	-.102	.623
V_4	-.028	.084	-.071	-.071	.607	-.046
V_5	-.069	.006	.448	-.019	.035	.009
V_6	-.054	-.055	-.084	.617	.009	-.046
V_7	-.014	-.012	.097	.535	-.093	-.047
V_8	-.037	.536	-.047	-.003	.014	-.009
V_9	-.014	.556	.016	-.068	-.030	-.022
V_{10}	.581	-.031	-.098	.005	-.081	-.005
V_{11}	.571	-.018	-.005	-.074	-.004	-.068
V_{12}	.021	.077	.523	-.146	-.052	-.079
V_{13}	-.094	-.126	.444	.175	-.047	-.088
V_{14}	-.108	-.101	-.080	.063	.053	.625

Table 5: Correlation Matrix of Extracted Factors

	F_1	F_2	F_3	F_4	F_5	F_6
F_1	1.000	.000	.000	.000	.000	.000
F_2	.000	1.000	.000	.000	.000	.000
F_3	.000	.000	1.000	.000	.000	.000
F_4	.000	.000	.000	1.000	.000	.000
F_5	.000	.000	.000	.000	1.000	.000
F_6	.000	.000	.000	.000	.000	1.000

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