

INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

U·M·I

University Microfilms International
A Bell & Howell Information Company
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA
313/761-4700 800/521-0600

PREVIEW

Order Number 9308165

**The influence of client control environment attributes on
evaluation of internal control: An empirical investigation of
auditor judgment**

Basu, Progyan, Ph.D.

The University of Nebraska - Lincoln, 1992

U·M·I

300 N. Zeeb Rd.
Ann Arbor, MI 48106

PREVIEW

**THE INFLUENCE OF CLIENT CONTROL ENVIRONMENT
ATTRIBUTES ON EVALUATION OF INTERNAL CONTROL :
AN EMPIRICAL INVESTIGATION OF AUDITOR JUDGMENT**

by

Progyan Basu

A DISSERTATION

Presented to the Faculty of

The Graduate College at the University of Nebraska

In Partial Fulfillment of Requirements

For the Degree of Doctor of Philosophy

Major : Interdepartmental Area of Business

Under the Supervision of Professor James F. Brown, Jr.

Lincoln, Nebraska

August 1992

DISSERTATION TITLE

The Influence of Client Control Environment Attributes on Evaluation

of Internal Control: An Empirical Investigation of

Auditor Judgment

BY

Progyan Basu

SUPERVISORY COMMITTEE:

APPROVED

DATE

Signature

James F. Brown, Jr.

Typed Name

July 16, 1992

Signature

Thomas E. Balke

Typed Name

July 16, 1992

Signature

Lester A. Digman

Typed Name

July 16, 1992

Signature

Thomas D. Hubbard

Typed Name

July 16, 1992

Signature

Charles J. Ansorge

Typed Name

July 16, 1992

Signature

Typed Name



**THE INFLUENCE OF CLIENT CONTROL ENVIRONMENT
ATTRIBUTES ON EVALUATION OF INTERNAL CONTROL :
AN EMPIRICAL INVESTIGATION OF AUDITOR JUDGMENT**

Progyan Basu, Ph.D.

University of Nebraska, 1992

Adviser : James F. Brown, Jr.

Independent auditors attest to the accuracy of financial statements prepared by various organizations. The auditors' examination of financial statements is heavily influenced by reliance placed on the internal control structure of the entity. Internal control evaluation is an important component of the audit process and involves complex judgments on behalf of independent auditors. A recent auditing pronouncement, Statement of Auditing Standards Number 55 [1988], specified guidelines designed to assist auditors in improving their evaluation of internal control. This standard requires auditors to explicitly consider the influence of control environment of a client when evaluating the internal control structure.

The purpose of this dissertation is to investigate the influence of control environment attributes specified in SAS 55 on the independent auditors' evaluation of the internal control structure. The study utilized an experimental methodology, in which practicing auditors from four Big Six public accounting firms were assigned the task of evaluating the internal

control structure of a hypothetical client. The case instrument contained internal control checklists where control environment attributes were manipulated as positive or negative. The subjects' responses were statistically analyzed using the Brunswik's lens model to determine how factors in a client's control environment affect the internal control reliability judgment of practicing auditors. In addition, the study also examined differences in judgment between auditors, differentiated by levels of experience, rank in organization and affiliation with public accounting firm.

The results from the study indicate that control environment attributes are considered important by practicing auditors, and that not all attributes are assigned equal weights. The auditors' judgments with respect to control environment evaluations across various levels of experience were significantly different. However, no significant difference was detected when the auditors were grouped according to their ranks. The results also did not support the hypothesis that auditors from different public accounting firms would evaluate internal control environments differently. The dissertation includes a discussion of the implications of these findings, and potential for future research.

Dedicated to my parents -

Mridula and Prabir Kumar Basu.

PREVIEW

**THE INFLUENCE OF CLIENT CONTROL ENVIRONMENT
ATTRIBUTES ON EVALUATION OF INTERNAL CONTROL :
AN EMPIRICAL INVESTIGATION OF AUDITOR JUDGMENT**

TABLE OF CONTENTS

CHAPTER 1 - OVERVIEW OF STUDY

1.0	INTRODUCTION	1
1.1	STATEMENT OF PROBLEM	2
1.2	JUSTIFICATION OF STUDY	4
1.3	DESIGN OF RESEARCH	
1.3.1	Theoretical Background	6
1.3.2	Operational Definitions	6
1.3.3	Development of Research Hypotheses	10
1.3.5	Methodology	15
1.3.6	Limitations of Study.	15
1.4	CONTRIBUTIONS OF STUDY	16
1.5	ORGANIZATION OF STUDY.	17

CHAPTER 2 - REVIEW OF THE LITERATURE

2.0	INTRODUCTION	19
2.1	GENERAL LITERATURE ON AUDITOR JUDGMENT..	19
2.1.1	Materiality.	21
2.1.2	Probability Elicitation.	23
2.1.3	Reliance on Internal Auditors.	24
2.1.4	Disclosure decisions	25
2.2	ANALYTICAL MODELS ON INTERNAL CONTROL EVALUATION.	27
2.3	BEHAVIORAL STUDIES ON INTERNAL CONTROL EVALUATION	33
2.3.1	Internal Control Evaluation: Survey Studies.	34

2.3.2	Internal Control Evaluation: Experimental Studies.	35
2.4	SUMMARY	43

CHAPTER 3 - TASK, HYPOTHESES AND METHODS

3.0	INTRODUCTION.	45
3.1	OVERVIEW OF TASK.	45
3.2	OPERATIONALIZATION OF THE TREATMENT CONDITIONS.	46
3.3	STATISTICAL METHODS..	48
3.3.1	Brunswik's Lens Model - Analytical Framework .	49
3.3.2	Policy Capturing for Internal Control Structure Evaluation.	52
3.3.3	Test of Hypotheses .	54
3.4	EXPERIMENTAL PROCEDURE	
3.4.1	Subjects .	57
3.4.2	Administration of the Instrument .	57
3.5	SUMMARY	59

CHAPTER 4 - RESULTS OF THE STUDY

4.0	INTRODUCTION.	60
4.1	DETERMINATION OF USABLE RESPONSES..	60
4.2	DEMOGRAPHIC INFORMATION OF SUBJECTS	61
4.2.1	Firm Affiliation	61
4.2.2	Years of Audit Experience .	62
4.2.3	Rank in Organization	63
4.2.4	Number of Audit Clients Per Year.	64
4.2.5	Proportion of Time in a Year Spent on Audits .	65
4.3	RESULTS OF THE TESTS OF HYPOTHESES	
4.3.1	Hypothesis One.	67
4.3.2	Hypothesis Two	69
4.3.3	Hypothesis Three.	72

4.3.3.1	Level of Experience of Subjects.	73
4.3.3.2	Rank of Subjects	75
4.3.4	Hypothesis Four	79
4.4	SUMMARY	83

CHAPTER 5 - DISCUSSION AND CONCLUSIONS

5.0	INTRODUCTION	84
5.1	DISCUSSION OF RESULTS	
5.1.1	Hypothesis One	84
5.1.2	Hypothesis Two	86
5.1.1	Hypothesis Three.	94
5.1.4	Hypothesis Four	99
5.2	DISCUSSION OF LIMITATIONS	
5.2.1	The Task.	103
5.2.2	The Subjects.	104
5.3	CONTRIBUTIONS AND FUTURE DIRECTIONS	
5.3.1	Contributions of the Study.	105
5.3.2	Directions for Future Research	106
5.4	SUMMARY	109
	REFERENCES	111
	APPENDIX 1.	118

LIST OF TABLES

4-1	Distribution of subjects by firm affiliation	62
4-2	Distribution of subjects by years of experience	63

4-3	Distribution of subjects by rank in organization	64
4-4	Distribution of subjects by number of audit clients per year	65
4-5	Distribution of subjects by proportion of time in a year spent on audits	66
4-6	Summary statistics for test of Hypothesis 1	68
4-7	Results of t-test for Hypothesis 1	68
4-8	Summary statistics for control environment assessment manipulations	70
4-9	Results of F-test for Hypothesis 2.	71
4-10	Pairs of control environment attributes found significantly different at a significance level of 0.05	71
4-11	Summary statistics of subjective weights placed on control environment attributes	72
4-12	Cell means of control environment assessment by cue manipulation and by years of experience	74
4-13	Results of two-way ANOVA with control environment cues and years of experience of subjects	75
4-14	Cell means of control environment assessment by cue manipulation and by rank in organization of subjects	76
4-15	Results of two-way ANOVA with control environment cues and rank in organization of subjects	77
4-16	Cell means of control environment assessments by cue manipulation and by firm affiliation of subjects	80
4-17	Results of two-way ANOVA with control environment cues and firm affiliation of subjects	80
5-1	Control environment attributes in order of decreasing importance	87

5-2	Summary statistics for measuring the quality of learning environment in one Big Six firm [Bonner and Pennington, 1991] .	97
5-3	Mean ratings of internal control evaluations from Nanni [1984] .	103

LIST OF FIGURES

3-1	Brunswik's Lens Model	49
4-1	Cue vs Rank Interaction	78
4-2	Cue vs Firm Affiliation Interaction	82

PREVIEW

CHAPTER 1

OVERVIEW OF THE STUDY

1.0 INTRODUCTION

In the process of formulating an opinion on the fairness of financial statements of an organization, an auditor needs to rely heavily on his/her evaluation of the organization's internal control system. The quality of the accounting information is directly related to the reliability of the internal control system (ICS). The auditor obtains an understanding of the internal control system in order to plan the audit; subsequently the nature, timing, and extent of tests to be performed are determined. The methods and audit procedures used in obtaining this understanding include inquiries of key management personnel, inspection of company documentation of relevant policies and procedures, observation of company activities and operations, and consideration of past experience with the client.

The appropriate role for internal controls in the auditor's opinion formulation process and the perceived effectiveness of current internal controls is in a stage of transition [Felix and Niles, 1988]. The competitive nature of the auditing profession has intensified considerably in the last few years causing increased pressures on the firms to achieve audit efficiency. To the extent that internal controls are the result of management actions and policies, understanding the nature of auditor decision-making with respect to

internal control evaluation has important implications for both the designers of accounting systems and public accountants. Empirical evidence from descriptive studies is necessary to build a cohesive body of knowledge relevant to auditor judgment. The objective of the present study is to help enhance the existing knowledge base relevant to the complex domain of auditor decision making.

1.1 STATEMENT OF PROBLEM

In an attempt to bridge the so-called "expectation gap" between the users of the financial statements and the auditors, the Auditing Standards Board (ASB) of the American Institute of Certified Public Accountants (AICPA) issued nine new Statements on Auditing Standards (SASs) in April 1988. These SASs were introduced to help increase the effectiveness of the audit process. SAS 55, "Consideration of the Internal Control Structure in a Financial Statement Audit," provides guidance as to the independent auditor's role in evaluating an entity's internal control structure [AICPA, 1988].

An organization's control structure consists of any policies or procedures that are established to achieve the business objectives of the organization. These could include segregation of incompatible duties, bonding of employees in sensitive positions, physical safeguarding of assets and so on. Generally, the external auditor is concerned with the policies and procedures designed to ensure the client's ability to record, process, summarize, and report financial data consistent with the assertions in the

financial statements. Thus, the controls that are relevant to the external auditor are those that are meant to ensure the reliability of financial statements, maintain accountability, or safeguard the client's assets and liabilities.

SAS 55 defines an entity's internal control structure as consisting of three components: the control environment, the accounting system, and the control procedures. The control environment reflects the overall attitude, awareness, and actions of the board of directors, management, owners, and others concerning the importance of control and its role in the organization. The accounting system consists of the methods and records established to identify, assemble, analyze, classify, record, and report an entity's transactions. The accounting system must also maintain accountability for the related assets and liabilities. Control procedures are policies and procedures, in addition to the control environment and accounting system, that management has established to achieve specific entity objectives.

SAS 55 was introduced by the Auditing Standards Board to help auditors accomplish a more complete evaluation of internal control and result in a more effective audit planning process. An improvement in the planning methods helps to ensure a more efficient audit, and avoids extraneous effort on part of the auditors. SAS 55 makes an explicit recognition of the three separate components of internal control structure, namely the control environment, the accounting system, and the control procedures as important sources of information about the types and risks of potential misstatements in financial statements. This statement requires the

auditor to obtain a sufficient understanding of the three elements necessary to plan the audit. A major difference between AU section 320 (AICPA Professional Standards on Auditing) [AICPA, 1986] and SAS 55, which superseded the former, is that AU 320 did not mandate an understanding of the control environment as a necessary step in identifying possible misstatements. The importance placed on the control environment could have significant implications for both management, internal auditors, and others involved in the design of accounting systems.

The main objective of the present study was to analyze how factors in a client's control environment affect the internal control reliability judgment of practicing auditors. The auditors' judgment was analyzed in terms of the control environment attributes identified in SAS 55.

1.2 JUSTIFICATION OF STUDY

The importance of the control environment factors in the evaluation of internal control reliability is documented in the accounting literature [e.g. Haskins, 1987]. The control environment represents management's effort to control the inherent risks involved in financial audits, and affects the design and implementation of internal accounting control systems. Professional pronouncements (e.g. AICPA, 1986) have specified control environment features, e.g. the client's organization structure, personnel and budget policies, which the auditors need to consider before relying on the internal control system. The final report issued by the National Commission on Fraudulent Financial Reporting (also known as Treadway Commission)

[1987] made specific recommendations for the assessment of a client's overall control environment. The Commission's recommendations were directed toward improving a company's overall financial reporting process and increasing the likelihood of prevention and early detection of fraudulent financial reporting. These recommendations dealt with (1) the tone set by the top management, (2) the internal accounting and auditing functions, (3) the audit committee, (4) management and audit committee reports, (5) the practice of seeking second opinions from independent public accountants, and (6) quarterly reporting.

In a recent study, Haskins [1987] identified the control environment attributes that were perceived to be of importance by practicing auditors. He used a questionnaire to elicit auditors' responses as to the importance of 48 control attributes for the assessment of a client's control environment. The results identified certain critical attributes which were most consistently ranked as having "great" importance. However, Haskins' list of 48 attributes failed to distinguish between control environment and control procedures. The critical attributes identified in his study are frequently noted in the existing literature as key internal accounting control considerations. The present study was designed to isolate the effect of selected client control environment attributes on the auditors' evaluation of internal control. The results of the study are expected to lead to a better understanding of the audit judgment process.

1.3 DESIGN OF RESEARCH

1.3.1 Theoretical Background

This study attempted to "capture" the judgment or prediction policy of individual decision makers, namely auditors, using Brunswik's Lens Paradigm [Brunswik, 1952]. Judgment modeling is concerned with how individuals utilize information when they make judgments about the current state, or make predictions about the future state, of a variable of interest. Research in this area typically is done in an experimental setting that provides the individual with various combinations of values on each of several variables that are to be used for judgment or prediction purposes. The individual makes a judgment based on each combination of values presented, and the individuals' judgment policy is inferred from the statistical relationship among the variables. According to Ashton [1982, p.14], "the major focus of judgmental modeling is to produce representations as an initial step toward improving the accuracy of human judgments as opposed to understanding cognitive processes."

1.3.2 Operational Definitions

The present study examined the importance assigned to the control environment factors specified in SAS 55 by practicing auditors. The control environment is reflected by the attitude, awareness, and actions of all

personnel in authority, including owners, directors and corporate officers. Management's attitude toward control sets the stage for the attitudes and actions for the entire company. If the staff perceives that control is not important to top management, the general effectiveness of the accounting system and control procedures is weakened considerably. SAS 55 has listed the following attributes as defining the control environment:

- Management Philosophy and Operating Style
- Organizational Structure
- Audit Committee
- Methods of Assigning Authority and Responsibility
- Management Control Methods
- Internal Audit Function
- Personnel Policies and Practices
- External Influences

A brief discussion of each attribute follows.

Management Philosophy and Operating Style

This factor reflects the overall control consciousness of management. Management attitudes and actions toward financial reporting, meeting budgetary and other operating goals, and other controls are included in this attribute. Whether management is dominated by one or a few individuals is also an important consideration.

Organizational Structure

A company's organizational structure is the overall framework for planning, directing and controlling the entity. Included in this attribute are the form and nature of the company's organizational units and related management functions and reporting relationships. An effective control environment requires clear definitions of responsibilities and lines of authority for personnel at all levels of the entity.

Audit Committee

An audit committee, made up of outside directors with responsibility for communication with independent as well as internal auditors, is required for all companies listed on the New York Stock Exchange. An effective audit committee takes an active role in supervising the company's accounting and financial reporting policies. The committee should maintain a direct line of communication between the board of directors and the company's auditors, allowing open discussion of sensitive issues like controversies involving accounting policies/procedures, disagreements with management, deficiencies in design or failures in operation of the internal control structure, and difficulties encountered in performing the audit.

Methods of Assigning Authority and Responsibility

These methods include (1) entity policy regarding acceptable business practices, conflicts of interests, and codes of conduct, (2) assignment of responsibility and delegation of authority to deal with such matters as organizational goals and objectives, operating functions, and

regulatory requirements, (3) employee job descriptions delineating specific duties, reporting relationships, and constraints, (4) computer systems documentation indicating the procedures for authorizing transactions and approving system changes.

Management Control Methods

These methods include: (1) procedures established to develop plans, budgets, forecasts, and responsibility accounting, (2) methods used to measure actual performance and compare it to planned performance, (3) procedures established to communicate the results to appropriate management personnel, (4) management's attitude and response to variances from expectations (i.e. whether management investigates and takes effective corrective action), (5) policies and procedures adopted to modify the accounting system and control procedures in an effort to update them for a changing environment, to correct problems, or enhance efficiency and/or effectiveness.

Internal Audit Function

An internal audit function is an individual, group, or department within a company that acts as a separate higher level of control to ensure that the internal control structure is functioning effectively. The independent auditor should review the competence and objectivity of internal auditors and evaluate their work. The external auditor is expected to review the competence, as well as objectivity of internal audit personnel.

Personnel Policies and Practices

The competence and integrity of a company's personnel and its management are important factors in providing an environment conducive to an effective internal control structure. The following personnel policies and practices are generally considered desirable: (1) systematic personnel selection, training, supervision, performance evaluation, promotion and compensation methods, (2) required annual vacations for all employees, (3) bonding of employees in positions of trust to provide background check and ensure against losses, (4) written code of employee conduct or conflict of interest policy to express the company's attitudes and expectations of proper conduct.

External Influences

Parties outside the company, including legislative and regulatory agencies such as the Securities and Exchange Commission or the Internal Revenue Service can influence the effectiveness of the control environment by raising awareness of control.

1.3.3 Development of Research Hypotheses

The proposition being examined in this study is that control environment cues or factors will influence the evaluation of a client's internal control system. The control attributes mentioned in the previous section