

A SURVEY OF THE PERCEPTIONS OF INDUSTRIAL  
CMAs ON THE IMPORTANCE OF SELECTED  
MANAGEMENT ACCOUNTING TOPICS

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## PREFACE

This study is concerned with determination of and analysis of the perceptions of industrial CMAs on the importance of selected management accounting topics in meeting their professional responsibilities. In addition, this study is concerned with determination of and analysis of differences in the perceptions of industrial CMAs on the importance of the various topics according to the respondent's demographic replies on the final questionnaire.

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## TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION . . . . .	1
Development of Problem . . . . .	1
Purpose of Study . . . . .	1
Significance of Study . . . . .	2
Limitations of Study . . . . .	2
Clarification of Terms . . . . .	3
Industrial Accountant . . . . .	3
Management Accounting . . . . .	3
Population . . . . .	4
Questionnaire Development and Distribution . . . . .	4
Analysis of Data . . . . .	5
Summary and Organization of Study . . . . .	5
II. REVIEW OF THE LITERATURE . . . . .	8
Introduction . . . . .	8
Deakin and Summers Study . . . . .	9
CMA Program Announcement . . . . .	12
Krogstad and Harris Study . . . . .	14
AAA Committee Report . . . . .	16
CMA Examination Content Analysis . . . . .	20
Horizons for a Profession . . . . .	21
Summary . . . . .	21
III. RESEARCH METHODOLOGY . . . . .	25
Introduction . . . . .	25
Population . . . . .	25
Justification for the Mail Questionnaire Approach . . . . .	27
Advantages of the Mail Questionnaire Approach . . . . .	27
Disadvantages of the Mail Questionnaire Approach . . . . .	28
Development of the Research Instrument . . . . .	28
Questionnaire Development Procedures . . . . .	29
The Final Questionnaire . . . . .	30
Questionnaire Distribution Procedures . . . . .	31
Identification of Population Members . . . . .	31
First Mailing . . . . .	32
Second and Third Mailings . . . . .	32
Description of Demographic Responses . . . . .	33
Statistical Measures Utilized in this Study . . . . .	35
Use of Spearman Rank Correlation Coefficients. . . . .	36

Chapter	Page
III. (continued)	
Use of Topic Ratings . . . . .	37
Use of Topic Rankings. . . . .	37
Summary . . . . .	38
IV. RESULTS OF RESPONSE ANALYSES . . . . .	41
Introduction . . . . .	41
Results of Analyses on All Respondents . . . . .	41
Group One Topics . . . . .	43
Group Two Topics . . . . .	45
Group Three Topics . . . . .	47
Group Four Topics . . . . .	49
Group Five Topics . . . . .	50
Results of Analyses on the Various Subgroups of Respondents . . . . .	52
Analysis of Ratings by Respondents' Management Level . . . . .	54
Analysis of Ratings by Respondents' Firm's Product . . . . .	59
Analysis of Ratings by Respondents' Firm's Market Area . . . . .	63
Summary . . . . .	67
V. IMPLICATIONS OF THE RESULTS AND RECOMMENDATIONS . . . . .	69
Introduction . . . . .	69
Implications of Results to the Accounting Curricula . . . . .	70
Implications of Results to the CMA Examination. . . . .	74
Implications of Results to the Continuing Education Considerations for Industrial Accountants . . . . .	77
Recommendations for Future Research . . . . .	79
SELECTED BIBLIOGRAPHY . . . . .	82
APPENDIX A - OUTLINE OF QUESTIONNAIRE DEVELOPMENT PROCEDURES . . . . .	86
APPENDIX B - OUTLINE OF QUESTIONNAIRE DISTRIBUTION PROCEDURES . . . . .	88
APPENDIX C - TEST QUESTIONNAIRE . . . . .	90
APPENDIX D - FINAL QUESTIONNAIRE . . . . .	95
APPENDIX E - COVER LETTER - FIRST MAILING . . . . .	100
APPENDIX F - COVER LETTER - SECOND MAILING . . . . .	102
APPENDIX G - COVER LETTER - FINAL MAILING . . . . .	104
APPENDIX H - DEMOGRAPHIC INFORMATION . . . . .	106

LIST OF TABLES

Table	Page
I. Managerial Accounting Topic List Developed by Deakin and Summers . . . . .	10
II. Management Accounting Topic List Presented in CMA Program Announcement . . . . .	13
III. Management Accounting Topic Lists Developed by Krogstand and Harris . . . . .	15
IV. Topic List Developed by AAA Committee . . . . .	17
V. Management Accounting Topic List Developed for Content Analysis of CMA Examinations . . . . .	20
VI. Response to the Final Questionnaire . . . . .	34
VII. Mean Rating of Importance and Standard Deviation of Ratings on Each Topic - All Respondents . . . . .	42
VIII. Mean Rating of Importance and Standard Deviation of Ratings on Each Group One Topic - All Respondents . . . . .	44
IX. Mean Rating of Importance and Standard Deviation of Ratings on Each Group Two Topic - All Respondents . . . . .	46
X. Mean Rating of Importance and Standard Deviation of Ratings on Each Group Three Topic - All Respondents . . . . .	48
XI. Mean Rating of Importance and Standard Deviation of Ratings on Each Group Four Topic - All Respondents . . . . .	49
XII. Mean Rating of Importance and Standard Deviation of Ratings on Each Group Five Topic - All Respondents . . . . .	51
XIII. Ranking and Mean Rating of Each Topic by Respondents' Management Level . . . . .	56
XIV. Ranking and Mean Rating of Each Topic by Respondents' Management Level - Discussion Warranted . . . . .	57
XV. Ranking and Mean Rating of Each Topic by Respondents' Firm's Product . . . . .	60



Table	Page
XVI. Ranking and Mean Rating of Each Topic by Respondents' Firm's Product--Discussion Warranted . . . . .	62
XVII. Ranking and Mean Rating of Each Topic by Respondents' Firm's Market Area . . . . .	64
XVIII. Ranking and Mean Rating of Each Topic by Respondents' Firm's Market Area--Discussion Warranted . . . . .	65
XIX. Comparison of this Study's Topic Rankings with Topic Rankings Developed from Curriculum Survey Responses . . . . .	72
XX. Comparison of this Study's Topic Rankings with Topic Rankings Developed from Analysis of CMA Examinations . . . . .	75
XXI. Distribution of Survey Respondents by AAA Region . . . . .	107
XXII. Distribution of Survey Respondents by States in Each AAA Region . . . . .	108
XXIII. Distribution of Demographic Responses . . . . .	109
XXIV. Distribution of Demographic Responses by AAA Region . . . . .	110
XXV. Selected Breakdowns of Demographic Responses . . . . .	111

## CHAPTER I

### INTRODUCTION

#### Development of Problem

Recently, industrial accountants and accounting educators have expressed interest in the development of accounting curricula for students wishing to pursue a career in management accounting. The development of the CMA examination and the recent activities of the American Institute of Certified Public Accountants concerning possible recognition of specialization within the accounting profession have led the accounting academician to review the relevance of current accounting courses to the career needs of students.<sup>1</sup>

Most accounting curricula studies have dealt with perceptions of accounting educators about the courses which should be included in the accounting student's program. Some studies have examined the relationship between accounting curricula and the content of professional examinations. Few studies, however, have been conducted which deal with perceptions of the users of accounting education--the practitioners.

#### Purpose of Study

The broad purpose of this study was to determine and analyze the perceptions of industrial CMAs on the importance of selected management accounting topics in meeting their professional responsibilities. In addition, responses were analyzed on the basis of certain demographic

factors (respondent's management level, respondent's firm's product, and respondent's firm's market area) to determine effects which demographic replies had on the ratings of importance on the various selected management accounting topics.

#### Significance of Study

The results of this study provide information about the importance of management accounting topics to the work experiences of accountants employed in industrial accounting positions. This information may be useful to accounting educators in advising students and in making decisions about course content and curriculum revisions. The results of this study also provide information which may be useful to examination administrators for making content decisions on future CMA examinations. In addition, the results of this study provide information which may be useful to industrial accountants for selecting appropriate subject matter of continuing education programs to help them attain their personal goals.

#### Limitations of Study

The respondents in this study are industrial CMAs. To become a CMA, an individual must successfully complete a five-part examination and must complete two years of professional management accounting experience. In addition, holders of the Certificate in Management Accounting must meet specific continuing education requirements to retain their status as CMAs. Because the results of this study represent the perceptions of obviously interested, "successful" industrial accountants, the results may not be indicative of the perceptions of industrial accountants in general.

## Clarification of Terms

### Industrial Accountant

For purposes of this study, an "industrial accountant" is an individual who performs functions which are primarily related to management accounting for a business concern other than a public accounting firm, a management consulting firm, a governmental agency, or an educational institution.

### Management Accounting

For purposes of this study, "management accounting" is the application of appropriate techniques and concepts to the processing of historical and projected economic data of an entity to assist management in establishing reasonable economic objectives and in making rational decisions with a view toward achieving those objectives. Management accounting includes the methods and concepts for effective planning, for choosing among alternative business actions, and for controlling operations through the evaluation and interpretation of performance. Its study involves consideration of ways which accounting information may be accumulated, synthesized, analyzed, and presented in relation to specific problems, decisions, and day-to-day tasks of business management.<sup>2</sup>

For purposes of this study, "management accounting" is distinguished from "managerial accounting." Managerial accounting includes the material normally covered in popular cost/managerial accounting texts. On the other hand, management accounting includes the entire range of activities used in internal accounting, and it embraces peripheral

disciplines (economics, business finance, and other subjects) as well as those normally included in typical cost/managerial texts.<sup>3</sup>

### Population

The population for this study consists of those individuals who were holders of the Certificate in Management Accounting and were employed in industrial accounting positions on December 31, 1975. The reasons for limiting the population to this group are discussed in Chapter III.

### Questionnaire Development and Distribution

The questionnaire used in this study consisted of two sections. Section one contained a list of 28 management accounting topics and a brief description of each topic. The respondent was requested to rate, on a scale of zero (no importance) to five (extremely important) the importance of each topic to his present work experience. Section two contained requests for certain demographic information (respondent's management level and other data) so differences in perceptions could be determined and analyzed on the basis of the demographic replies.

The topic list was developed by referring to a CMA program announcement,<sup>4</sup> a recent AAA study,<sup>5</sup> a study by Krogstad and Harris,<sup>6</sup> a study by Deakin and Summers,<sup>7</sup> and a content analysis of the first four CMA examinations.<sup>8</sup> The brief topic descriptions were developed by referring to current managerial accounting textbooks and Horizons for a Profession.<sup>9</sup>

The sources footnoted in the preceding paragraph are discussed in Chapter II. Details of the questionnaire development and the full set of procedures used in the pretest are discussed in Chapter III.

Each questionnaire was mailed with a short cover letter and an addressed, postage-paid return envelope. Second and third requests were mailed to those population members who did not respond within the designated time period. The cover letters and the final questionnaire are included in the Appendices, and an expanded discussion of the questionnaire distribution procedure is included in Chapter III.

### Analysis of Data

After the demographic data on each questionnaire were coded, the data were analyzed with the "Statistical Analysis System" at the Oklahoma State University Computer Center. The output was analyzed to determine the perceived importance of the various management accounting topics to the entire group of respondents. The output was further analyzed to determine differences in individual topic ratings by the various population subgroups identified on the basis of the demographic replies. Details of the types of analyses used in this study are presented in Chapter III.

### Summary and Organization of Study

Chapter I explains the purpose, the significance, and the limitations of this study. Two terms ("industrial accountant" and "management accounting") are clarified, and the research approach is briefly discussed. The chapters that follow present in detail the research methodology and the results of this study.

Chapter II consists of a literature review. Special attention is given to the Deakin and Summers study because of its similarity to the current study. Chapter III explains the methodology employed to

accomplish the objectives of this study. Included in this chapter are discussions of the population, the justification for utilizing the mail questionnaire approach, the questionnaire development and distribution procedures, and the statistical measures used to analyze the response data.

Chapter IV presents results of this study. In addition to discussions of the data analyses, tabular presentations of the topic ratings and rankings by the entire group of respondents and by the various subgroups of respondents are included in this chapter.

Chapter V presents implications of this study's results to the accounting curricula, to the CMA examination, and to the continuing education considerations for industrial accountants. Included in this chapter are the author's recommendations for future research.

FOOTNOTES

<sup>1</sup>Edward B. Deakin III and Edward L. Summers, "A Survey of Curriculum Topics Relevant to the Practice of Management Accounting," Accounting Review, Vol. L, No. 2 (April, 1975), p. 380.

<sup>2</sup>American Accounting Association, "Report of the Committee on Management Accounting," Accounting Review, Vol. XXXIV, No. 2 (April, 1959), p. 210.

<sup>3</sup>Jack L. Krogstad and John K. Harris, "The CMA Examination: A Content Analysis," Management Accounting, Vol. LVI, No. 4 (October, 1974), p. 22.

<sup>4</sup>Institute of Management Accounting, Certificate in Management Accounting, 1976 Announcement (New York, 1975).

<sup>5</sup>American Accounting Association, "Report of the 1973-74 and 1974-75 Committees on Professional Examinations," Supplement to Volume XLXI of the Accounting Review (1976), pp. 1-37.

<sup>6</sup>Krogstad and Harris, pp. 21-23.

<sup>7</sup>Deakin and Summers, pp. 380-383.

<sup>8</sup>Neal R. VanZante, "The CMA Examination: Increasing Breadth and Rigor " (Unpub. manuscript, National Association of Accountants, 1976).

<sup>9</sup>Robert H. Roy and James H. MacNeill, Horizons for a Profession (New York, 1967).



## CHAPTER II

### REVIEW OF THE LITERATURE

#### Introduction

The researcher conducted a literature review to determine the existence of previous studies which dealt with perceptions of practitioners in various professions on the importance of selected subject matter to their present work experience. To locate studies of this kind, literature was reviewed in the professions of accounting, architecture, law, management, medicine, and theology. The procedures followed in the literature search were:

1. Reference to the bibliographies of publications such as Lynn's Professions in America,<sup>1</sup> including review of specific sources included in the bibliographies.
2. Reference to the major periodicals published since January, 1965 in each of the professions noted above, including review of specific articles.
3. Reference to the doctoral dissertation abstracts since 1965 in each of the professions noted above, including review of specific abstracts.
4. Reference to other sources identified by professors in each of the professions noted above during discussions they had with the researcher.

The researcher was unable to locate any studies in professions other than accounting which dealt with perceptions of practitioners on the importance of selected topics to their present work experience. The only study located which is similar to the present study was conducted by Edward B. Deakin and Edward L. Summers.<sup>2</sup> They surveyed Texas

accountants about the respondents' perceptions of the importance of selected management accounting topics to their present work experiences. The following section contains a discussion of the Deakin and Summers study.

#### Deakin and Summers Study

The results of the study by Edward B. Deakin and Edward L. Summers were reported in the April, 1975 edition of the Accounting Review. The authors mailed 250 questionnaires to corporate-affiliated members of the Texas Society of CPAs, accountants practicing in MAS in large CPA firms, Texas members of the AAA listing corporate addresses, Beta Alpha Psi alumni of the University of Texas at Austin, and members of the Texas FEI chapters. One hundred sixty-eight (67 percent) of these questionnaires were returned. The questionnaire included a list of 39 "management accounting" topics (see Table I) and a brief description of each topic. The respondents were requested to rate the importance of each topic to their present work experience. Demographic information (description of respondent's present position and number of years since college graduation) was requested to determine differences in responses between the various professional groups and to determine whether length of experience since graduation had any effect on the ratings.

The authors developed their topic list by consulting the indexes and tables of content in several cost/managerial accounting texts and by talking with a small group of management accounting practitioners.<sup>3</sup> Review of the topic list (see Table I) reveals that the 39 "management accounting" topics on the Deakin and Summers questionnaire actually consisted almost entirely of "managerial accounting" topics.<sup>4</sup> As a

TABLE I  
MANAGERIAL ACCOUNTING TOPIC LIST DEVELOPED  
BY DEAKIN AND SUMMERS\*

Topic Number	Name of Topic	Topic Number	Name of Topic
1	Organization Theory	21	Joint Cost Analysis
2	Information Systems Adminis- tration	22	Transfer Pricing
3	Behavioral Implications of Information	23	Contract Costing
4	Information Economics	24	Distribution Cost Analysis
5	Environmental Control and Analysis	25	Simulation
6	Divisional Reporting	26	Linear Programming
7	Responsibility Accounting	27	Statistical Decision Theory
8	Performance Evaluation	28	Forecasting
9	Non-financial Measures of Performance	29	Cost Estimation Using Advanced Statistical Techniques
10	Internal Report Preparation	30	Computer Use in Decision Making
11	Internal Control	31	Corporate Planning Models
12	Internal and Managerial Auditing	32	Profit Planning and Control
13	Cash Management	33	Capital Budgeting
14	Inventory Management and Control	34	International Operations
15	Job Order Costing	35	Accounting Principles Impact on Operations
16	Process Costing	36	Tax Factors in Business Decisions
17	Standard Costing	37	Information System Design
18	Variance Analysis and Reporting	38	Systems Implementation
19	Learning Effect	39	Computer Science
20	Overhead Allocation and Analysis		

\*Edward B. Deakin III and Edward L. Summers, "A Survey of Curriculum Topics Relevant to the Practice of Management Accounting," Accounting Review Vol. L, No. 2 (April, 1975), pp. 380-383. Topics are presented in the same order as they were on the authors' questionnaire.

matter of fact, the questionnaire instructions read as follows: "This survey consists of brief descriptions of topics which could be covered in a curriculum in managerial accounting and planning."<sup>5</sup> Because certain management accounting topics such as "macroeconomics," "microeconomics," and "independent auditing considerations" are absent from Deakin and Summers' list, the topic list can hardly be considered complete. The authors' list did, however, serve as one input to the questionnaire development process in the current study.

The results of the Deakin and Summers study indicated that general topics such as "performance evaluation" and "responsibility accounting," were deemed more important in practice than were the tools used to accomplish them. Analysis of the demographic data indicated that this phenomenon was affected very little by differences in experience levels of respondents. In follow-up discussions with several respondents, the authors found that this phenomenon was probably caused by a natural tendency of individuals to respond more favorably to broad topic areas than to narrow tool areas. Because of this observation by the authors, the researcher concentrated his efforts on identifying management accounting topics which include approximately the same breadth of subject matter.

Deakin and Summers' concluding remarks about the implications of their study's results to curriculum development included several recommendations that high-ranking topics be given more coverage than is presently given to them. They concluded that a broad background is important to the management accountant and that curriculum plans should include a balance of related topics in organization theory, taxation, finance, and other similar topics. The authors made these

recommendations without providing evidence supporting the amount of coverage which the high-ranking topics presently received in the classroom. In the current study, the researcher has attempted to limit his remarks about the implications of the results to those cases where comparisons can be made between the results and the findings of other studies.

In addition to the topic list developed by Deakin and Summers, four other sources provided management accounting topic lists which served as inputs to the questionnaire development in the current study: a CMA program announcement,<sup>6</sup> a study by Krogstad and Harris,<sup>7</sup> an AAA committee report,<sup>8</sup> and a content analysis of the first four CMA examinations.<sup>9</sup> The following four sections of this chapter present discussions of these sources.

#### CMA Program Announcement

An announcement distributed annually by the Institute of Management Accounting contains information about the CMA program. This announcement includes sections about admission requirements, the meaning of the Certificate in Management Accounting, objectives of the CMA program, certificate requirements, fees, and continuing education requirements. For purposes of the current study, the most important portion of the program announcement is the examination content outline.<sup>10</sup> The content outline, shown in Table II, provided the starting point for identifying management accounting topics and served as the focal point throughout the topic identification process.

TABLE II  
 MANAGEMENT ACCOUNTING TOPIC LIST PRESENTED  
 IN CMA PROGRAM ANNOUNCEMENT\*

Examination Part	Title of Examination Part Topic Names
Part 1:	Economics and Business Finance Enterprise Economics Institutional Environment of Business National and International Economics Working Capital Management Long Term Finance and Capital Structure
Part 2:	Organization and Behavior, Including Ethical Considerations Organization Theory and Decision Making Motivation and Perception Communication Behavioral Science Application in Accounting Ethical Considerations
Part 3:	Public Reporting Standards, Auditing and Taxes Reporting Requirements Audit Protection Tax Accounting
Part 4:	Periodic Reporting for Internal and External Purposes Concepts of Information Basic Financial Statements Profit Planning and Budgetary Controls Standard Costs for Manufacturing Analysis of Accounts and Statements
Part 5:	Decision Analysis, Including Modeling and Information Systems Fundamentals of the Decision Process Decision Analysis Nature and Techniques of Model Building Information Systems and Data Processing

\*Institute of Management Accounting, Certificate in Management Accounting, 1976 Announcement (New York, 1975), pp. 5-9.

### Krogstad and Harris Study

The results of a study by Jack L. Krogstad and John K. Harris were reported in the October, 1974, edition of Management Accounting.<sup>11</sup>

Their study consisted of a content analysis of the first two CMA examinations and a comparison of the academic preparation necessary to successfully complete each examination.

The major purpose of the Krogstad and Harris study was to dispell misconceptions which accounting professors and accounting students may have about the content of the CMA examination. They pointed out that approximately 40 percent of the total time of both examinations constituted managerial accounting and that relatively insignificant amounts of coverage were given to information systems, quantitative methods, and management organizational behavior so the examinations were not as broadly oriented as might be inferred by review of the examination outline in CMA program announcements. A major conclusion of the Krogstad and Harris study was confirmation of the NAA's position that "the successful candidate is likely to have a bachelor's degree in business with a substantial amount of study in management accounting."<sup>12</sup>

Krogstad and Harris divided the contents of the 1972 and 1973 CMA examinations into twelve major subject areas. They also divided one major subject area, "managerial accounting," into twelve specific topics. They analyzed the percentage of examination time devoted to each major subject area and to each of the twelve specific "managerial accounting" topics on each of the first two examinations. Table III shows the subject area and topic breakdowns used by Krogstad and Harris.

For purposes of the current study, the topical outlines which Krogstad and Harris used in their analysis provided one input to the

TABLE III  
 MANAGEMENT ACCOUNTING TOPIC LISTS DEVELOPED  
 BY KROGSTAD AND HARRIS\*

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Name of Topic

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Breakdown by Major Subject Matter:

Managerial Accounting  
 Financial Reporting  
 Business Finance  
 Macroeconomics  
 Microeconomics  
 Management and Organization Behavior  
 External Auditing  
 Internal Auditing  
 Corporate Taxation  
 Quantitative Methods  
 Information Systems  
 Government and Business

Breakdown by Managerial Accounting Topics:

Relevant Cost Analysis  
 Budgeting, Including Analysis of Variation in Gross Profit  
 Standard Cost Systems, Including Variance Analysis  
 Capital Budgeting  
 Cost-Volume-Profit Analysis  
 Responsibility Accounting  
 Transfer Pricing, Including Profit Center Concept  
 Direct vs. Absorption Costing  
 Inventory Planning and Control  
 ROI Performance Measurement  
 Cost Behavior Analysis  
 Others

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\*Jack L. Krogstad and John K. Harris, "The CMA Examination: A Content Analysis," Management Accounting, Vol. LVI, No. 4 (October, 1974), p. 22.



questionnaire development process.

#### AAA Committee Report

Another source which was helpful to the researcher in identifying management accounting topics is a committee report which was presented at the annual convention of the American Accounting Association in August, 1975.<sup>13</sup> One of the objectives of the committee's study was to compare content and coverage levels of the CPA examination, the CMA examination, and the CIA examination, as perceived by the committee, with content and coverage levels of current accounting curricula as perceived by respondents to a curriculum survey. The respondents in the AAA curriculum survey were department chairpersons at 203 American colleges and universities which offer accounting programs leading to a baccalaureate and/or master's degree with an accounting concentration.

One product of the committee's study is a comprehensive list of 72 accounting topics describing the current content of the examinations and the content of the accounting curricula. The committee's topic list is shown in Table IV.

A review of the AAA committee's study was useful to the researcher in two ways. First, the topic list developed by the committee served as one input to the process of identifying management accounting topics for inclusion on the current study's questionnaire. Second, the results of the committee's curriculum survey provided a means for the researcher to compare results of his study with topic coverage levels in the current accounting curricula. Details of the comparison made between results of the current study and results of the AAA committee's curriculum survey are presented in Chapter V.

TABLE IV  
 TOPIC LIST DEVELOPED BY AAA COMMITTEE\*

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Major Topic Headings (Number of Topics):  
 Topic Names

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External Financial Reporting (9):

Conventional Valuation Bases for Current Assets  
 Conventional Valuation Bases for Property, Plant, and Equipment  
 Conventional Valuation Bases for Other Assets  
 Conventional Valuation Bases for Liabilities  
 Conventional Valuation Bases for Owners' Equity  
 Preparation and Presentation of Principal Statements, including  
 Footnotes  
 Disclosure Standards and Procedures  
 Ratio Analysis and Statement Interpretation  
 International Reporting Practices

Accounting Theory (11):

Price Level Accounting  
 Current Value Accounting  
 Other Valuation Bases  
 Foreign Currency Translations  
 Leases and Long-Term Contracts  
 Pension Costs  
 Differences Between GAAP and Tax Regulations  
 Consolidations, Mergers, and Acquisitions  
 Corporate Dissolutions and Reorganizations  
 Evolution of Accounting Thought  
 Measurement of Corporate Social Performance

Accounting Pronouncements of Major Regulatory Bodies (4):

Financial Accounting Standards Board and Its Predecessors  
 Cost Accounting Standards Board  
 Securities and Exchange Commission  
 Industry Regulatory Commissions (ICC, FPC, FCC, etc.)

Auditing (12):

Generally Accepted Auditing Standards (AICPA)  
 Opinions  
 Special Reports  
 Evidence  
 Programs and Procedures  
 Internal Control  
 Auditing Computer Systems

TABLE IV (continued)

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Major Topic Headings (Number of Topics):  
Topic Names

---

Auditing (continued):

Management and Performance Auditing  
 Concepts and Objectives of Internal Audits  
 Concepts and Objectives of External Audits  
 Public Accountants' Legal Responsibilities  
 Ethical and Professional Responsibilities of Auditors

Management Accounting (13):

Planning: Short Run Budgets  
 Planning: Long Run Forecasts  
 Cost Accumulation Systems--Job Order and Process, Absorption  
 and Direct  
 Cost Control--Flexible Budgets and Standard Costs  
 Divisional Performance and Transfer Pricing  
 Analysis of Multinational Operations  
 Cost, Volume, Profit Relationships  
 Tax Implications of Alternative Decisions  
 Capital Budgeting  
 Analysis for Merger and Acquisition Decisions  
 Behavioral Science Applications in Accounting  
 Social and Environmental Implications of Alternative Decisions  
 Ethical and Professional Responsibilities of Management Accountants

Information Systems (3):

Systems Analysis and Design  
 Computer Systems  
 Other Information Systems

Federal Taxation (4):

Individual  
 Corporation  
 Partnership  
 Estate, Trust, and Gift

Not-for-Profit Entities (2):

Fund Accounting  
 Budgeting for Operations and Control-PPBS, Cost/Benefit Analysis

TABLE IV (continued)

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Major Topic Headings (Number of Topics):
Topic Names
<u>Business Law (2):</u>
Contracts, Agency, Corporations, Uniform Commercial Code, Uniform Partnership Act Administrative Law, including Government Regulation
<u>Business Applications of Quantitative Methods (5):</u>
Applied Mathematics, including Calculus Probability Regression Analysis Statistical Sampling Decision Models and Operations Research
<u>Economics and Business Finance (5):</u>
Economics of the Firm Effects of Monetary and Fiscal Policy Effects of International Economic Events Working Capital Management Long-Term Financing, Capital Structure, and Cost of Capital
<u>Organization Theory and Behavioral Science (2):</u>
Organizational Theory Human Behavior and Communication in Business Organizations

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\*American Accounting Association, "Report of the 1973-74 and 1974-75 Committees on Professional Examinations," Supplement to Volume XLXI of the Accounting Review (1976), pp. 1-37.

## CMA Examination Content Analysis

A final source which was useful in identifying management accounting topics for inclusion on the questionnaire was a content analysis of the first four CMA examinations.<sup>14</sup> The objectives of the content analysis were to determine changes in the CMA examination content since the first examination was administered in December, 1972 and to compare the contents of the third and fourth examinations with the contents of the first two examinations.

For purposes of the current study, the list of 20 management accounting topics developed for analysis of the first four CMA examinations served as one input to the topic identification process. Table V contains an outline of the 20 topics used in the content analysis.

TABLE V  
MANAGEMENT ACCOUNTING TOPIC LIST DEVELOPED  
FOR CONTENT ANALYSIS OF CMA EXAMINATIONS\*

Name of Topic	Name of Topic
Microeconomics	Independent Auditing Considerations
Macroeconomics	Internal Auditing and Control
Long-term Finance	Financial Statement Analysis
Capital Budgeting	Working Capital Management
Organization Theory	Information Economics
Behavioral Considerations	Budgeting and Variance Analysis
Ethical Considerations	Segment Accounting
External Reporting	Costing for Decision Making
Influence of External Groups	Computer Systems
Federal Taxation	Advanced Quantitative Methods

\* Neal R. VanZante, "The CMA Examination: Increasing Breadth and Rigor" (Unpub. manuscript, National Association of Accountants, 1976).

In addition to serving as one input to the topic identification process, the content analysis of the first four CMA examinations provided a means for the researcher to compare the results of his study with topic coverage levels on past CMA examinations. Details of the comparison made between results of the current study and results of the CMA examination content analysis are included in Chapter V.

#### Horizons for a Profession

After identifying management accounting topics to include on the current study's questionnaire, the researcher wrote a brief topic description for each topic by referring to several current cost/managerial accounting, economics, finance, and behavioral theory textbooks. Another source of topic descriptions was Horizons for a Profession.<sup>15</sup>

The American Institute of Certified Public Accountants published Horizons in 1967. The study delineated the "common body of knowledge" for certified public accountants. Since Horizons was published, a great deal has been written in the professional literature about the study. The purpose of the current study is not to join in the debate about Horizons, rather the purpose of mentioning this publication is to give credit for the excellent descriptions of several management accounting topics which it contains.

#### Summary

This chapter includes a discussion of the steps taken to locate studies similar to this one and discussion of the sources that were most important to the objective of this study. Special attention is given to

the Deakin and Summers study<sup>16</sup> which deals with perceptions of Texas accountants on the importance of selected management accounting topics to their present work experiences. Five other sources discussed in this chapter were useful to the researcher in identifying and describing management accounting topics for inclusion on the current study's questionnaire.

Two sources discussed in this chapter, the AAA committee report<sup>17</sup> and the author's content analysis of the first four CMA examinations,<sup>18</sup> are discussed in detail in Chapter V. Chapter III includes details of the questionnaire development and the other research methodology employed to accomplish the objective of the current study.

#### FOOTNOTES

<sup>1</sup>Kenneth Lynn, ed., Professions in America (Boston, 1965).

<sup>2</sup>Edward B. Deakin III and Edward L. Summers, "A Survey of Curriculum Topics Relevant to the Practice of Management Accounting," Accounting Review, Vol. L, No. 2 (April, 1975), pp. 380-383.

<sup>3</sup>Ibid., p. 380.

<sup>4</sup>See "Clarification of Terms" in Chapter I for the distinction between "management accounting" and "managerial accounting" for the purpose of this study.

<sup>5</sup>Deakin and Summers, Questionnaire Instructions.

<sup>6</sup>Institute of Management Accounting, Certificate in Management Accounting, 1976 Announcement (New York, 1975).

<sup>7</sup>Jack L. Krogstad and John K. Harris, "The CMA Examination: A Content Analysis," Management Accounting Vol. LVI, No. 4 (October, 1974), pp. 21-23.

<sup>8</sup>American Accounting Association, "Report of the 1973-74 and 1974-75 Committees on Professional Examinations," Supplement to Volume XLXI of the Accounting Review (1976), pp. 1-37.

<sup>9</sup>Neal R. VanZante, "The CMA Examination: Increasing Breadth and Rigor." (Unpub. manuscript, National Association of Accountants, 1976.)

<sup>10</sup>Institute of Management Accounting, pp. 5-9.

<sup>11</sup>Krogstad and Harris, pp. 21-23.

<sup>12</sup>National Association of Accountants, "Certificate in Management Accounting Established by NAA," Management Accounting, Vol. LII, No. 9 (March, 1972), pp. 13-15.

<sup>13</sup>American Accounting Association, pp. 1-37.

<sup>14</sup>VanZante.

<sup>15</sup>Robert H. Roy and James H. MacNeill, Horizons for a Profession (New York, 1967).

<sup>16</sup>Deakin and Summers.



17 American Accounting Association.

18 VanZante.

## CHAPTER III

### RESEARCH METHODOLOGY

#### Introduction

Chapter II contains discussions of five studies which provided management accounting topic lists used by the researcher in developing the questionnaire in the current study. The topics lists provided by the studies are presented in Tables I through V of that chapter. Chapter III explains the methodology employed to accomplish the objective of this study.

This chapter is divided into six main sections. First, the population is defined and described. Second, justification for utilizing the mail questionnaire approach is presented. Third, steps taken to develop a reliable and valid research instrument are explained. Fourth, procedures followed in administering the questionnaire are described. Fifth, a description of the average respondent and a discussion of the respondents' replies to the demographic questions are presented. Last, the statistical measures used to analyze the response data are explained.

#### Population

The population for this study consisted of those individuals who were holders of the Certificate in Management Accounting and were employed in industrial accounting positions on December 31, 1975. On that date, 391 individuals were certificate holders.<sup>1</sup> Of this number,

172 were employed by public accounting firms, management consulting firms, governmental agencies, or educational institutions. The remaining 219 certificate holders were classified as industrial CMAs. One industrial CMA was not included in the population because he was employed outside of the United States (Hong Kong), and mailing difficulties prohibited his inclusion in the population. The population, then, consisted of 218 industrial CMAs in the United States on December 31, 1975.

The population was limited to holders of the Certificate in Management Accounting to ensure that the responses would include only perceptions of individuals who have thorough knowledge of the selected management accounting topics and who have some industrial accounting experience. The population was further narrowed to include only industrial CMAs because this study deals with knowledge required by individuals employed in industrial accounting positions.

To ensure that terminology used in the questionnaire would be uniformly understood, the population was limited to a group of individuals who have common exposure to the list of topics and the terminology used to describe the topics. A common understanding of the topics and topic descriptions was reasonably assured by selecting industrial CMAs as the population because the examination content outline in the CMA program announcement<sup>2</sup> was the focal point for identifying questionnaire topics.

Industrial CMAs were selected for three other reasons. First, this group has not yet been bombarded with questionnaires because the CMA program is relatively new. Second, an accurate mailing list was available from the Institute of Management Accounting. Third, this group was likely to respond because the researcher is also a CMA.

## Justification for the Mail Questionnaire

### Approach

After selecting industrial CMAs as the population for this study, the researcher considered two methods of gathering the desired information: telephone interviews and mail questionnaires. The reasons for choosing the mail questionnaire approach are presented in the remainder of this section in a discussion of the advantages and disadvantages usually associated with the mail questionnaire approach.

#### Advantages of the Mail Questionnaire Approach

According to Clover and Balsley,<sup>3</sup> one of the advantages of utilizing the mail questionnaire approach is that mail questionnaires can be sent to persons in widely scattered locations at a relatively low cost. Because industrial CMAs were located in every geographical region of the United States, and because the researcher was financing the entire study, this advantage was important to the decision to use the mail questionnaire approach.

Other advantages of the mail questionnaire approach according to Clover and Balsley are:

1. Respondents can be reached in their homes or offices where they read and answer the questionnaire.
2. Mail questionnaires can be answered more carefully than personal or telephone questionnaires because more time can be allowed for thinking through the answer.
3. No interviewer is present to bias the answers or to make mistakes in recording the information.<sup>4</sup>

The preceding three advantages were important to the decision to use the mail questionnaire approach because the addresses to be used in the mailing process were the same addresses the respondents use for their mail from the Institute of Management Accounting.

### Disadvantages of the Mail Questionnaire Approach

According to Clover and Balsley,<sup>5</sup> disadvantages of utilizing the mail questionnaire approach include the following:

1. A relatively large percentage, even 50 to 90 percent of mail questionnaires will usually not be returned.
2. Answers to certain questions may be omitted or the questions may be incorrectly answered because they are misunderstood.
3. Mail questionnaires can be sent only to persons who can read and write.
4. People who have little spare time on their hands are less likely to respond to mail questionnaires.
5. A mailing list that contains up-to-date addresses of the persons it is desirable to reach may be difficult and expensive to obtain.

Deakin and Summers<sup>6</sup> were able to obtain a response rate of 67 percent in their study utilizing a much longer questionnaire and surveying equally busy individuals. For that reason, the first and fourth disadvantages listed above appeared unrealistic to the researcher for purposes of the current study. Because of the nature of the population chosen, and because the topical outline in the CMA Program Announcement<sup>7</sup> served as an input to the topic identification process, the second and third disadvantages were ignored for all practical purposes. Finally, because up-to-date mailing labels were available from the Institute of Management Accounting at no cost, the fifth disadvantage actually served as a major advantage for purposes of the current study.

### Development of the Research Instrument

After deciding to utilize the mail questionnaire approach, the researcher developed the questionnaire included in Appendix D of this study. The procedures followed to develop the questionnaire are outlined in Appendix A. This section contains discussions of the

questionnaire development procedures and the final questionnaire.

### Questionnaire Development Procedures

Five lists of management accounting topics were developed by referring to the sources discussed in Chapter II. The five topic lists are shown in Tables I through V of that chapter. Then, a list of 49 management accounting topics was developed by combining topics presented on the five separate lists. This list was reduced to 27 management accounting topics by combining similar topics in an attempt to include approximately the same breadth of subject matter within each topic. A brief description of each topic was written by referring to current cost/managerial accounting, economics, finance, and behavioral theory texts and Horizons for a Profession.<sup>8</sup> A tentative questionnaire was developed by combining the management accounting topic list and the brief topic descriptions with requests for demographic information (respondent's management level, respondent's firm's product, and others). A test questionnaire (Appendix C) was developed after comments were received from four industrial accountants, three accounting professors, and Dr. James Bulloch.<sup>9</sup>

On the test questionnaire, each respondent was requested to rate, on a scale of zero (no importance) to five (extremely important), the importance of each management accounting topic to his present work experience. Each value of the rating scale was defined (see Appendix C) to aid the respondent in making his selection. An even number (six) of possible ratings was included on the questionnaire to force the respondent to think about each topic enough to decide whether the topic was of below average importance or above average importance. That is, the

possibility of any topic being rated as having "average importance" was eliminated to prohibit a multitude of "average importance" responses. In addition, the rating scale was reversed on every other topic (see Appendix C) to minimize the possibility of only a perfunctory review of the topic list.

The questionnaire was pretested. Twenty-two industrial accounting members (including eight officers and directors) of the Oklahoma City Chapter of the National Association of Accountants were asked to complete the test questionnaire and to make comments of their questionnaire. Eighteen of the questionnaires (representing an 82 percent response rate) were returned. Sixteen of the respondents used the entire range of the rating scale in evaluating the importance of the various topics. No respondent indicated that the rating scale did not include enough choices.

Three respondents to the test questionnaire indicated that one topic, "computer systems," should be divided into two separate topics. The final questionnaire (Appendix D) incorporated the comments of these three respondents by including two computer topics: "computer systems" and "computer programming." Five respondents suggested changes in topic descriptions which were incorporated in the final questionnaire. In addition, one change in the demographic portion of the questionnaire, inclusion of "other" in the "firm product" section, was made because two respondents wrote-in an answer to this section instead of choosing one of the product selections provided.

#### The Final Questionnaire

The final questionnaire (Appendix D) was prepared based on comments received during the pretest. It contained two main sections: section

one included a list of 28 management accounting topics and a brief description of the subject matter included in each topic. The respondent was requested to rate, on a scale of zero (no importance) to five (extremely important), the importance of each topic to his present work experience. Section two contained requests for demographic information (respondent's management level, market area of respondent's firm, and others) so differences in perceptions of topic importance between the population subgroups (based on demographic replies) could be determined and analyzed.

To encourage the respondent to return his completed questionnaire, the final questionnaire was made as short as possible so the respondent would need to spend little time completing the questionnaire. The final questionnaire contained only three pages and required the respondent to only circle numbers to complete the questionnaire.

#### Questionnaire Distribution Procedures

Because of the small number of industrial CMAs, the key to success for this project centered around obtaining the highest possible response rate. The procedures followed during the questionnaire administration process to obtain the largest possible response rate are outlined in Appendix B of this study, and this section contains a narrative discussion of these procedures.

#### Identification of Population Members

Official mailing labels for all CMAs were supplied by the Institute of Management Accounting. The names of CMAs who were obviously employed by public accounting firms, management consulting firms, governmental



agencies, or educational institutions were eliminated by referring to a roster of CMAs as of July, 1975<sup>10</sup> and a list of successful candidates on the June, 1975 CMA examination.<sup>11</sup> The researcher was unable to eliminate all nonindustrial CMAs from the mailing list prior to the first distribution of the questionnaires because 21 CMAs were employed by firms whose names did not allow for obvious elimination.

#### First Mailing

On March 23, 1976, a questionnaire was mailed to each of 233 CMAs who were not eliminated from the population. A cover letter (Appendix E) requested the respondent to return his completed questionnaire by April 10. The cover letters were typed in blue ink on Central State University stationery, and each cover letter was personally signed by the researcher. A stamped return envelope accompanied each questionnaire. The envelopes containing the research materials were mailed first class, and each envelope was stamped "first class" in red ink. For identification purposes, a number was placed at the top of each questionnaire.

#### Second and Third Mailings

On April 13, 1976, a questionnaire was mailed to each of 61 CMAs who had not responded by either returning their completed questionnaire or submitting a note indicating they were not industrial CMAs. Except for the cover letter (Appendix F), the material mailed on April 13 was identical to the material mailed in the first questionnaire distribution.

On April 27, 1976, a questionnaire was mailed to each of 29 CMAs who had not responded to either of the first two requests. The research material mailed on April 27 was identical to the material distributed

during the first two mailings except for the cover letter (Appendix G). Each recipient of the third mailing was requested to respond by May 7 either by returning his completed questionnaire or by checking a statement at the bottom of the final cover letter indicating that (1) he was not an industrial CMA, or (2) he was an industrial CMA but did not wish to participate in this study.

Several questionnaires were received from the first mailing after the second requests were mailed. In addition, several questionnaires were received from the first and second mailings after the final requests were mailed. The number of usable responses from each mailing is shown in Appendix B. Discussions of the response rate obtained and of the respondents' replies to the demographic portion of the questionnaire are presented in the following section.

#### Description of Demographic Responses

The questionnaire distribution process proved successful. The final usable response rate was 94.04 percent. Only six CMAs (representing only 2.75 percent of the population) did not respond to any of the mailings. Table VI itemizes the responses.

AAA regional<sup>12</sup> response rates are shown in Table XXI in Appendix H. Table XXII in Appendix H includes the names of the states in each AAA region, the number of industrial CMAs residing in each state, and the number of usable questionnaires returned by the industrial CMAs in each state. Analyses of these two tables show that non-respondents were scattered throughout the United States and that each state having industrial CMAs was represented in the group of respondents.

TABLE VI  
RESPONSE TO THE FINAL QUESTIONNAIRE

Category	Number	Percent
Usable Responses	205	94.04
Response Received Too Late for Analysis	2	.92
Desired Not To Participate in This Study	5	2.29
No Response	<u>6</u>	<u>2.75</u>
Totals	218*	100.00

\*Fifteen CMAs who received questionnaires indicated they were not employed in industrial accounting positions.

A breakdown of the demographic responses to the final questionnaire is included in Table XXIII in Appendix H. Analysis of this table indicates that the average respondent in this study is employed as a controller or in a higher level management position by a manufacturing company with a market area consisting of the entire United States and some international markets. Analysis of the respondents' replies on the demographic portion of the questionnaire about the respondent's major accounting responsibilities indicates that the average respondent in this study is involved in planning and budgeting activities but also has a wide range of other responsibilities. (The average number of major accounting responsibilities circled or written in by the respondents was 3.26.)

Table XXIV in Appendix H presents a breakdown of the demographic

responses by AAA regions. This table is included for inspection by readers who are interested in the geographical distribution of the demographic replies.

Other breakdowns of the demographic responses are included in Table XXV in Appendix H. Analysis of this table indicates that the majority of respondents' firms with a national or international market area are engaged in manufacturing operations, but the majority of respondents' firms with a narrower market area are engaged in non-manufacturing activities such as insurance, banking, and public utilities. A slightly higher percentage of respondents employed by manufacturing companies are employed in top management positions than are respondents employed by non-manufacturing companies.

The following section explains the statistical measures utilized in the current study to analyze the response data. The specific measures are discussed in relation to the part they played in the analyses.

#### Statistical Measures Utilized in This Study

To determine and analyze the perceived importance of the various management accounting topics, the response data were subjected to analyses with the "Statistical Analysis System" at the Oklahoma State University Computer Center. The output of the analyses consisted of the following:

1. The mean rating, the standard deviation of the ratings, the lowest rating, and the highest rating for each topic on the basis of all respondents.
2. The mean rating, the standard deviation of the ratings, the lowest rating, and the highest rating for each topic on the basis of each population subgroup identified by referring to the demographic replies.

3. The topic rankings on the basis of all respondents and on the basis of each population subgroup developed by ranking each topic according to the mean rating achieved.
4. The Spearman rank correlation coefficient between each pair of topic rankings.

The specific uses of each of the above statistical measures for the purposes of this study are explained in the following three subsections of this chapter. First, uses of the computed Spearman rank correlation coefficients are discussed. Then, uses of the topic ratings and standard deviations of the ratings are discussed. Last, uses of the topic rankings are discussed.

#### Use of Spearman Rank Correlation Coefficients

Of all the statistics based on ranks, the Spearman rank correlation coefficient, also referred to as the Spearman rho, was the earliest to be developed and is perhaps the best known today.<sup>13</sup> It is a measure of association which requires that both variables be measured in at least an ordinal scale so that objects or individuals under study may be ranked in two ordered pairs.<sup>14</sup>

The possible values of the Spearman rho range from negative one to positive one. A computed value of negative one represents perfect negative correlation between the pair of rankings, and a computed value of positive one represents perfect positive correlation between the pair of rankings. A value of zero represents non-association between the pair of rankings.

The Spearman rank correlation coefficients computed in this study are discussed only briefly in Chapter IV because they were used only as an aid to the researcher in determining the effects which demographic replies had on the ratings of topic importance. The following subsection

contains a discussion of uses made of the topic ratings and the standard deviations of the ratings.

#### Use of Topic Ratings

The mean ratings of the selected management accounting topics were used to identify the relative importance of each topic as perceived by the respondents in this study. Topics with relatively high mean ratings were perceived by the respondents as having more importance to their present work experience than were topics with relatively low mean ratings.

The standard deviations of the ratings were used to identify the extent of agreement in the ratings of individual topics among the respondents. A relatively small standard deviation of the ratings indicates that respondents as a group agree to a greater extent about the mean rating of importance on a specific topic than does a relatively large standard deviation.

The mean rating and the standard deviation of the ratings for each management accounting topic are presented in Chapter IV. In the section of Chapter IV containing results of the analyses of effects which the demographic replies had on the ratings, the mean rating of each topic by each population subgroup is presented because analyses of only topic rankings may lead to misleading conclusions.

#### Use of Topic Rankings

The rankings of the various topic ratings were used in two ways. First, comparisons of the various population subgroup topic rankings provided a means for determining effects which the demographic replies had on the responses. Second, comparisons of the topic rankings on

the basis of all respondents with topic rankings developed from referring to findings of other studies aided the researcher in determining implications of the current study's results to the accounting curricula and to the CMA examination.

Comparisons of the topic rankings (and ratings) of the various population subgroups are included in Chapter IV. Comparisons of the topic rankings of all respondents with topic rankings developed from referring to the AAA Committee Report<sup>15</sup> and a content analysis of the first four CMA examinations<sup>16</sup> are included in Chapter V.

#### Summary

Chapter III explains the methodology used to accomplish the objectives of this study. Procedures followed to develop and administer the research instrument and statistical measures used to analyze the response data are discussed in this chapter. Results of the analyses are presented in Chapter IV. Implications of the current study's results to the accounting curricula, the the CMA examination, and to the continuing education considerations for industrial accountants are presented in Chapter V.

#### FOOTNOTES

<sup>1</sup>Institute of Management Accounting, "Analysis of the 1975 CMA Examination," Management Accounting, Vol. LVII, No. 6 (December, 1975), p. 62.

<sup>2</sup>Institute of Management Accounting, Certificate in Management Accounting, 1976 Program Announcement (New York, 1975), pp. 5-9.

<sup>3</sup>Vernon T. Clover and Howard L. Balsley, Business Research Methods (Columbus, Ohio, 1974), pp. 77-78.

<sup>4</sup>Ibid.

<sup>5</sup>Ibid.

<sup>6</sup>Edward B. Deakin III and Edward L. Summers, "A Survey of Curriculum Topics Relevant to the Practice of Management Accounting," Accounting Review, Vol. L, No. 2 (April, 1975), pp. 380-383.

<sup>7</sup>Institute of Management Accounting, Certificate in Management Accounting, 1976 Program Announcement.

<sup>8</sup>Robert H. Roy and James H. MacNeill, Horizons for a Profession (New York, 1967).

<sup>9</sup>Dr. Bulloch is the Director of the Institute of Management Accounting.

<sup>10</sup>Institute of Management Accounting, Roster of Certificates in Management Accounting-July, 1975 (Ann Arbor, Michigan, 1975).

<sup>11</sup>Institute of Management Accounting, "117 Candidates Complete the CMA Examination in June, 1975," Management Accounting, Vol. LVII, No. 6 (December, 1975), pp. 59-61.

<sup>12</sup>Geographical regions of the United States according to the American Accounting Association.

<sup>13</sup>Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (New York, 1956), p. 202.

<sup>14</sup>Ibid.



<sup>15</sup>American Accounting Association, "Report of the 1973-74 and 1974-75 Committees on Professional Examinations," Supplement to Volume XLXI of the Accounting Review (1976), pp. 1-37.

<sup>16</sup>Neal R. VanZante, "The CMA Examination: Increasing Breadth and Rigor " (Unpub. manuscript, National Association of Accountants, 1976.)

## CHAPTER IV

### RESULTS OF RESPONSE ANALYSES

#### Introduction

Statistical measures used to analyze the response data are discussed in Chapter III. As mentioned in that chapter, respondents were requested to rate, on a scale of zero (no importance) to five (extremely important), the importance of selected management accounting topics to their present work experiences.

Chapter IV presents the results of the analyses on the respondents' ratings of topic importance. Implications of the results to the accounting curricula, to the CMA examination, and to the continuing education considerations for industrial accountants are discussed in Chapter V. Chapter IV contains two main sections. First, results of the analyses of the ratings of all respondents are presented. Then, results of the analyses to determine effects which demographic replies had on the various topic ratings are presented.

#### Results of Analyses on All Respondents

The mean rating of importance on each topic and the standard deviation of the ratings on each topic are shown in Table VII. The topics are listed in order of perceived importance. That is, the first topic listed is the one which achieved the highest mean rating, and the last topic listed is the one which achieved the lowest mean rating.

TABLE VII  
 MEAN RATING OF IMPORTANCE AND STANDARD DEVIATION  
 OF RATINGS ON EACH TOPIC - ALL RESPONDENTS

Rank of Topic 1 = High	Topic Titles (Order on Questionnaire)	Mean Rating*	Standard Deviation of Ratings
1	Cost Behavior (22)	4.07	1.15
2	Forecasting (20)	4.02	1.09
3	Variance Analysis (23)	3.97	1.16
4	Segment Accounting (21)	3.95	1.23
5	Computer Systems (26)	3.91	1.05
6	Information Content (6)	3.90	1.12
7	Financial Statement Preparation (9)	3.89	1.22
8	Capital Budgeting (19)	3.85	1.14
9	Working Capital Management (18)	3.61	1.35
10	Motivation and Perception (8)	3.57	1.05
11	Financial Statement Analysis (17)	3.56	1.35
12	Behavior Implications of Information (7)	3.53	1.10
13	Conventional Valuation Bases (10)	3.45	1.28
14	Ethical Considerations (5)	3.37	1.25
15	Long-term Finance (3)	3.30	1.31
16	Independent Auditing (24)	3.18	1.23
17	Internal Auditing (25)	3.14	1.26
18	Tax Regulations (13)	3.04	1.33
19	Major Regulatory Bodies (12)	3.01	1.37
20	Organization Theory (4)	3.00	1.13
21	Macroeconomic Theory (2)	2.76	1.29
22	Microeconomic Theory (1)	2.74	1.24
23	Other Valuation Bases (11)	2.61	1.27
24	Quantitative Methods (28)	2.44	1.42
25	Other Groups (14)	2.28	1.11
26	International Reporting (15)	1.91	1.63
27	Computer Programming (27)	1.77	1.31
28	Social Measurement and Reporting (16)	1.24	0.99
	Average Rating of Importance	3.18	
	Average Standard Deviation of Ratings		1.23

\*Zero (0)=No Importance, One (1)=Little Importance, Two (2) = Below Average Importance, Three (3)=Above Average Importance, Four (4)= Very Important, Five (5)=Extremely Important.

The average rating scale value was 2.50. The average rating of importance assigned to the various topics was 3.18. This phenomenon suggests that either the respondents as a group hesitated to use the lower end of the rating scale or the respondents as a group perceived relatively few of the topics as having below average importance to their present work experiences.

Except for two topics, every topic was assigned a rating of zero (no importance) by at least one respondent and was assigned a rating of five (extremely important) by at least one other respondent. No respondent rated "information content" as having no importance, and no respondent rated "social measurement and reporting" as having extreme importance.

The researcher divided the topics into five groups according to gaps between the mean ratings achieved by the various topics. The following five subsections of this chapter contain discussions of the topics included in each group.

#### Group One Topics

The mean rating of importance and the standard deviation of the ratings on each topic which achieved a mean rating of 3.85 or higher are listed in Table VIII. The standard deviation of the ratings on each of these Group One topics was equal to or smaller than the average standard deviation of the ratings on all topics. The smaller than average standard deviations of the ratings on the Group One topics indicate that the respondents in this study agree relatively more about the mean ratings of these topics than they do about the mean ratings of the majority of the questionnaire topics.

TABLE VIII  
 MEAN RATING OF IMPORTANCE AND STANDARD DEVIATION  
 OF RATINGS ON EACH GROUP ONE TOPIC --  
 ALL RESPONDENTS

Topic Titles	Mean Rating* of Topics	Standard Deviation of Ratings
Cost Behavior	4.07	1.15
Forecasting	4.02	1.09
Variance Analysis	3.97	1.16
Segment Accounting	3.95	1.23
Computer Systems	3.91	1.05
Information Content	3.90	1.12
Financial Statement Preparation	3.89	1.22
Capital Budgeting	3.85	1.14
Average Rating of Importance - All 28 Topics	3.18	
Average Standard Deviation of Ratings - All 28 Topics		1.23

\*Zero (0)=No Importance, One (1)=Little Importance, Two (2)=Below Average Importance, Three (3)=Above Average Importance, Four (4)=Very Important, Five (5)=Extremely Important.

The four topics which achieved the highest mean ratings ("cost behavior," "forecasting," "variance analysis," and "segment accounting") are the four questionnaire topics which accounting educators usually associate with subject matter covered in traditional managerial accounting courses. The relatively high mean ratings of these four topics seem to be what might be expected because the majority of the respondents (70.24%) are employed by manufacturing companies.

Except for the four traditional management accounting topics, the topic which achieved the highest rating is "computer systems." In addition, the standard deviation of the ratings on this topic is the

lowest of all Group One topics. The relatively high mean rating on this topic coupled with the relatively low standard deviation of the ratings on this topic seems to indicate that knowledge of the capabilities and control devices for computer systems and understanding how computers may be used for various business activities are very important subjects to industrial accountants.

The mean ratings and standard deviations of the ratings on the other Group One topics are shown in Table VIII. The relatively high mean ratings of "information content," "financial statement analysis," and "capital budgeting" do not seem unusual because the majority of the respondents (74.63%) are employed in top management (28.78%) or in middle management (45.85%) industrial accounting positions.

#### Group Two Topics

The mean rating of importance and the standard deviation of the ratings on each topic which achieved a mean rating of from 3.30 to 3.61 are shown in Table IX. These seven topics are labeled Group Two topics.

Inclusion of "working capital management," "financial statement analysis," and "long-term finance" in the Group Two topics coupled with the inclusion of "capital budgeting" in the Group One topics seems to indicate that subject matter usually covered in finance courses is very important to industrial accountants. The standard deviations of the ratings on the three finance topics included in Group Two are relatively higher than the standard deviation of the topic on most questionnaire topics. This phenomenon suggests that there is relatively less agreement among the respondents about the mean ratings of these topics than there is about the mean ratings of the majority of questionnaire topics.

TABLE IX  
 MEAN RATING OF IMPORTANCE AND STANDARD DEVIATION  
 OF RATINGS ON EACH GROUP TWO TOPIC --  
 ALL RESPONDENTS

Topic Titles	Mean Rating* of Topics	Standard Deviation of Ratings
Working Capital Management	3.61	1.35
Motivation and Perception	3.57	1.05
Financial Statement Analysis	3.56	1.35
Behavior Implications of Information	3.53	1.10
Conventional Valuation Bases	3.45	1.28
Ethical Considerations	3.37	1.25
Long-term Finance	3.30	1.31
Average Rating of Importance - All 28 Topics	3.18	
Average Standard Deviation of Ratings - All 28 Topics		1.23

\*Zero (0)=No Importance, One (1)=Little Importance, Two (2)=Below Average Importance, Three (3)=Above Average Importance, Four (4)=Very Important, Five (5)=Extremely Important.

Inclusion of two behavioral topics, "motivation and perception" and "behavior implications of information," in the Group Two topics seems to suggest that knowledge about how individuals react to management styles and policy changes and about how individuals react to information are very important subjects to industrial accountants. The relatively low standard deviation of the ratings on each of these behavioral topics suggests that the respondents are in relatively more agreement about the mean ratings of these two topics than they are about the mean ratings of the majority of questionnaire topics. Because "information content" is included in the Group One topics and "behavior implications of

information" is included in the Group Two topics, knowledge about the cost and value of information and means of communicating information evidently is perceived as having more importance to the respondents than is knowledge about how individuals react to information.

Table IX. includes the mean ratings and the standard deviations of the ratings on the other Group Two topics. Notice the relatively high mean rating of "ethical considerations" as compared with the mean ratings of some of the topics which are discussed in the following two subsections.

### Group Three Topics

Five questionnaire topics achieved a mean rating between 3.00 and 3.18. The mean rating of importance and the standard deviation of the ratings on each of these Group Three topics are listed in Table X.

"Independent auditing" achieved a higher mean rating and a lower standard deviation of ratings than did "internal auditing." Because the respondents in this study are employed in industrial accounting positions rather than in public accounting positions, it would have seemed logical for the respondents to rate knowledge of the activities of the internal auditor and methods of achieving good internal control higher than knowledge of the activities and responsibilities of the independent auditor. A possible explanation of the higher mean rating on "independent auditing" than on "internal auditing" is that the majority of respondents (74.63%) are employed in top management or middle management industrial accounting positions where they may have more exposure to the activities of the independent auditor and may be further removed from the details of achieving good internal control and of



internal audit techniques than would the beginning industrial accountant.

TABLE X  
MEAN RATING OF IMPORTANCE AND STANDARD DEVIATION  
OF RATINGS ON EACH GROUP THREE TOPIC --  
ALL RESPONDENTS

Topic Titles	Mean Rating* of Topics	Standard Deviation of Ratings
Independent Auditing	3.18	1.23
Internal Auditing	3.14	1.26
Tax Regulations	3.04	1.33
Major Regulatory Bodies	3.01	1.37
Organization Theory	3.00	1.13
Average Rating of Importance - All 28 Topics	3.18	
Average Standard Deviation of Ratings - All 28 Topics		1.23

\*Zero (0)=No Importance, One (1)=Little Importance, Two (2)=Below Average Importance, Three (3)=Above Average Importance, Four (4)=Very Important, Five (5)=Extremely Important.

Table X includes the mean ratings and the standard deviations of the ratings on the other Group Three topics. The relatively large standard deviations of the ratings on "tax regulations" and "major regulatory bodies" seems to suggest that the perceived importance of these two topics depends to a large extent on the respondent's responsibility for filing periodic reports with tax authorities and regulatory agencies.

Group Four Topics

Group Four topics include those topics which achieved a mean rating of from 2.28 to 2.76. The mean rating of importance and the standard deviation of the ratings on each Group Four topic are shown in Table XI.

TABLE XI  
MEAN RATING OF IMPORTANCE AND STANDARD DEVIATION  
OF RATINGS ON EACH GROUP FOUR TOPIC --  
ALL RESPONDENTS

Topic Titles	Mean Rating* of Topics	Standard Deviation of Ratings
Macroeconomic Theory	2.76	1.29
Microeconomic Theory	2.74	1.24
Other Valuation Bases	2.61	1.27
Quantitative Methods	2.44	1.42
Other Groups	2.28	1.11
Average Rating of Importance - All 28 Topics	3.18	
Average Standard Deviation of Ratings - All 28 Topics		1.23

\*Zero (0)=No Importance, One (1)=Little Importance, Two (2)=Below Average Importance, Three (3)=Above Average Importance, Four (4)=Very Important, Five (5)=Extremely Important

The slightly higher mean rating achieved by "macroeconomic theory" than by "microeconomic theory" suggests that knowledge about major economic trends and an understanding of the effects of monetary and fiscal policies on operations is more important to the respondents than is knowledge about supply and demand factors for the individual business

and an understanding of the effects which different types of competition have on prices. The standard deviation of the ratings on "macroeconomic theory" is slightly higher than the standard deviation of the ratings on "microeconomic theory." The relatively lower degree of agreement in the ratings of importance on "macroeconomic theory" seems normal because the respondents in this study are employed by companies with varying market areas.

The relatively low mean rating of "quantitative methods" seems to indicate that knowledge about specific high-level quantitative methods including the ability to apply them to specific cases is not of great importance to the industrial accountant. However, the standard deviation of the ratings on this topic was the second highest standard deviation of the ratings on all twenty-eight questionnaire topics. This phenomenon suggests that the respondent's rating depends to a great extent on his responsibility for the development of specific data used in decision-making.

#### Group Five Topics

Table XII presents the mean rating of importance and the standard deviation of the ratings on each topic which achieved a mean rating of 1.91 or less. These topics were labeled Group Five topics.

"International reporting" achieved one of the lowest mean ratings in this study. In addition, the standard deviation of the ratings on this topic was the highest of all topics. The relatively low mean rating and the relatively large standard deviation of the ratings on this topic might be caused by the diverse market areas served by the respondents' firms.

TABLE XII  
 MEAN RATINGS OF IMPORTANCE AND STANDARD DEVIATION  
 OF RATINGS ON EACH GROUP FIVE TOPIC --  
 ALL RESPONDENTS

Topic Titles	Mean Rating* of Topics	Standard Deviation of Ratings
International Reporting	1.91	1.63
Computer Programming	1.77	1.31
Social Measurement and Reporting	1.24	0.99
Average Rating of Importance - All 28 Topics	3.18	
Average Standard Deviation of Ratings - All 28 Topics		1.23

\*Zero (0)=No Importance, One (1)=Little Importance, Two (2)=Below Average Importance, Three (3)=Above Average Importance, Four (4)=Very Important, Five (5)=Extremely Important

The relatively low mean rating of "computer programming" coupled with the relatively high mean rating of "computer systems" (a Group One topic) suggests that knowledge about specific computer languages is of much less importance to the industrial accountant than is knowledge about computer capabilities and control devices. No respondent rated "computer programming" higher than "computer systems," and only those respondents who indicated that systems analysis was one of their major accounting responsibilities rated the topics of equal importance.

"Social measurement and reporting" achieved by far the lowest mean rating of all topics. This topic also achieved the lowest standard deviation of the ratings; in addition, no respondent rated this topic as having extreme importance. The relatively low mean rating of this

topic coupled with the relatively low standard deviation of the ratings on this topic suggests that "social measurement and reporting" is a topic of little importance to the industrial accountant.

#### Results of Analyses on the Various Subgroups of Respondents

Results of the analyses on the mean rating and the standard deviation of the ratings on each selected management accounting topic based on all respondents in this study were discussed in the preceding section. The current section presents the results of analyses to determine effects which the demographic replies had on the various topic ratings.

As mentioned in Chapter III, the mean rating of importance, the standard deviation of the ratings, the lowest rating, and the highest rating were determined for each management accounting topic based on each of the various population subgroups identified by the demographic replies. In addition, topic rankings for each of the population subgroups were developed, and Spearman rank correlation coefficients were computed between each pair of topic rankings.

The population subgroups identified from the demographic responses on the questionnaire and the number of respondents in each subgroup are detailed in Table XXIII in Appendix H. Spearman rank correlation coefficients were computed between topic rankings of each population subgroup to determine the extent of agreement in the topic rankings. The lowest value of the Spearman rho was computed between the rankings of the respondents who identified (circled or wrote-in) at least four major accounting responsibilities and those respondents who identified (circled or wrote-in) two or less major accounting responsibilities

which did not include "planning and budgeting." The Spearman rank correlation coefficient computed between the rankings of these two population subgroups was .837 (perfect agreement equals 1.000) which indicates a large extent of agreement in the topic rankings between even the two population subgroups which were most dissimilar in makeup.

Because the lowest association of the rankings was related to the respondent's major accounting responsibilities, one may conclude that a respondent's major accounting responsibilities seemed to influence his ratings of importance more heavily than did the other demographic factors. A review of the mean ratings of topic importance and the standard deviations of the ratings by population subgroups shows that respondents with relatively wide ranges of responsibilities rated more topics on the higher range of the rating scale, and the standard deviations of their ratings were smaller than those of the respondents with relatively narrow ranges of responsibilities. The average mean rating of all 28 topics by the respondents who circled or wrote-in at least four major accounting responsibilities was 3.46, and the average standard deviation of the total ratings was only 1.11. On the other hand, the average mean rating of all 28 topics by the respondents who circled or wrote-in two or less major accounting responsibilities which did not include "planning and budgeting" was only 3.00, and the average standard deviation of the ratings for this subgroup was a relatively large 1.35. A possible explanation for this phenomenon is that the respondents who indicated only one or two major accounting responsibilities represent several specific responsibilities (systems analysts, internal auditor, and so forth) so that no single topic achieved a particularly high mean rating by this population subgroup.

Analysis of the differences in individual questionnaire topic ratings based on the respondents' major accounting responsibilities would probably not be meaningful because of the representation of several specific responsibilities in the subgroup of respondents who identified two or less major accounting responsibilities. For that reason, the remainder of this chapter presents discussions of the major differences in individual topic rankings and ratings on the basis of the other three demographic factors (respondent's management level, respondent's firm's product, and market area of respondent's firm).

An analysis of the computed Spearman rhos, the topic rankings, the mean ratings of topic importance, and the standard deviations of the ratings shows that the demographic factor which most affected the ratings on the majority of questionnaire topics is the respondent's management level (top, middle, and staff or nonsupervisory). The demographic factor which affected the ratings least is the respondent's firm's market area (international, national, and regional or less).

#### Analysis of Ratings by Respondent's Management Level

Survey respondents were requested to indicate their current industrial accounting position by circling the number of the phrase which best described their current management level. The management levels provided on the questionnaire and the number of respondents circling each management level were "top management" (59), "middle management" (94), "staff function" (48), and "nonsupervisory employee" (4). For purposes of this study, respondents who circled "staff function" or "nonsupervisory employee" were grouped together.

The rankings and mean ratings of the individual management accounting topics by the three population subgroups identified by "management level" replies are shown in Table XIII. The topics are listed in the rank order of importance to the "middle management" population subgroup. Because the other demographic factors appeared to affect the ratings of importance on some topics more than did the "management level" factor, the discussion in this chapter subsection is limited to those topics which either (1) achieved a rank at least three ranks higher and a mean rating at least .30 higher by one "management level" subgroup than by another "management level" subgroup or (2) achieved a mean rating at least .40 higher by one "management level" subgroup than by another "management level" subgroup. The topics warranting discussion in this subsection because the rankings and mean ratings or the mean ratings which they achieved by the various "management level" population subgroups meet the criteria set forth are listed in Table XIV.

Analysis of Table XIV indicates that "top management" respondents rated each of the listed topics higher than did "middle management" and "staff and other" respondents. Also, "middle management" respondents rated each topic higher than did "staff and other" respondents except "capital budgeting" and "long-term finance." The topics listed in Table XIV can be classified into three major subject areas: finance, organization and behavior, and external forces.



TABLE XIII  
 RANKING AND MEAN RATING OF EACH TOPIC  
 BY RESPONDENTS' MANAGEMENT LEVEL

Topic Titles	Topic Ranks (Mean Ratings)*		
	Top Management	Middle Management	Staff and Other
Cost Behavior	5 (4.07)	1 (4.16)	1 (3.92)
Segment Accounting	11 (3.81)	2 (4.05)	3 (3.90)
Variance Analysis	7 (3.93)	3 (4.03)	4 (3.89)
Computer Systems	8 (3.92)	4 (3.96)	5 (3.85)
Forecasting	2 (4.24)	5 (3.95)	2 (3.91)
Information Content	6 (3.95)	5 (3.94)	7 (3.77)
Financial Statement Preparation	3 (4.22)	7 (3.82)	8 (3.66)
Capital Budgeting	4 (4.12)	8 (3.72)	6 (3.79)
Motivation and Perception	10 (3.83)	9 (3.69)	15 (3.04)
Behavior Implications of Information	16 (3.63)	10 (3.56)	10 (3.35)
Working Capital Management	1 (4.25)	11 (3.49)	13 (3.10)
Financial Statement Analysis	9 (3.86)	12 (3.46)	9 (3.40)
Conventional Valuation Bases	15 (3.66)	13 (3.40)	11 (3.31)
Ethical Considerations	12 (3.71)	14 (3.34)	16 (3.02)
Internal Auditing	18 (3.20)	15 (3.20)	14 (3.06)
Long-term Finance	13 (3.68)	16 (3.12)	12 (3.20)
Organization Theory	19 (3.19)	17 (3.11)	20 (2.65)
Independent Auditing	17 (3.51)	18 (3.10)	17 (2.94)
Major Regulatory Bodies	20 (3.15)	19 (3.00)	18 (2.88)
Tax Regulations	14 (3.67)	20 (2.89)	23 (2.61)
Microeconomic Theory	22 (2.83)	21 (2.71)	19 (2.71)
Macroeconomic Theory	21 (3.00)	22 (2.70)	21 (2.63)
Quantitative Methods	25 (2.25)	23 (2.54)	24 (2.48)
Other Valuation Bases	23 (2.73)	24 (2.52)	22 (2.62)
Other Groups	24 (2.53)	25 (2.24)	26 (2.06)
Computer Programming	27 (1.63)	26 (1.94)	27 (1.63)
International Reporting	26 (1.73)	27 (1.91)	25 (2.10)
Social Measurement and Reporting	28 (1.17)	28 (1.31)	28 (1.21)
Average Ratings of Importance	3.34	3.18	3.02

\*Rank: 1 = High, 28 = Low  
 Ratings: Zero (0) = No Importance, One (1) = Little Importance,  
 Two (2) = Below Average Importance, Three (3) = Above Average Importance,  
 Four (4) = Very Important, Five (5) = Extremely Important

TABLE XIV  
 RANKING AND MEAN RATING OF EACH TOPIC  
 BY RESPONDENTS' MANAGEMENT LEVEL--  
 DISCUSSION WARRANTED

Topic Titles	Topic Ranks (Mean Ratings)*		
	Top Management	Middle Management	Staff and Other
Financial Statement Preparation	3 (4.22)	7 (3.82)	8 (3.66)
Capital Budgeting	4 (4.12)	8 (3.72)	6 (3.79)
Motivation and Perception	10 (3.83)	9 (3.69)	15 (3.04)
Working Capital Management	1 (4.25)	11 (3.49)	13 (3.10)
Financial Statement Analysis	9 (3.86)	12 (3.46)	9 (3.40)
Ethical Considerations	12 (3.71)	14 (3.34)	16 (3.02)
Long-term Finance	13 (3.68)	16 (3.12)	12 (3.21)
Organization Theory	19 (3.19)	17 (3.11)	20 (2.65)
Independent Auditing	17 (3.51)	18 (3.10)	17 (2.94)
Tax Regulations	14 (3.67)	20 (2.89)	23 (2.61)
Other Groups	24 (2.53)	25 (2.24)	26 (2.06)
Average Ratings of Importance - All 28 Topics	3.34	3.18	3.02

\*Rank: 1 = High, 28 = Low  
 Ratings: Zero (0) = No Importance, One (1) = Little Importance,  
 Two (2) = Below Average Importance, Three (3) = Above Average Importance,  
 Four (4) = Very Important, Five (5) = Extremely Important

Finance topics include "capital budgeting," "working capital management," "financial statement analysis," and "long-term finance." The relatively higher ratings of these topics by the "top management" respondents seems normal because "top management" members of an organization usually have final responsibility for long-term investment and financing decisions and the liquidity of their firms. The relatively higher rating of "capital budgeting" and "long-term finance" by the "staff and other" population subgroup than by the "middle management" population subgroup might indicate that a large percentage of the respondents in the "staff and other" subgroup have responsibility for preparing analyses that top management uses in making long-run decisions.

"Motivation and perception" and "organization theory" were rated relatively higher by the "management groups" (top and middle management) of respondents than by the "staff and other" group of respondents. This may be due to the fact that management members of organizations are responsible for supervising the work of other organization members.

Topics representing external forces are "financial statement preparation," "ethical considerations," "independent auditing," "tax regulations," and "other groups." Because higher level management members of organizations are usually responsible for presenting financial statements to outsiders, for dealing with independent auditors, and for making decisions which are at least partially affected by requirements of external groups, the higher mean ratings of these topics by the "top management" population subgroup than by the other "management level" population subgroups might indicate their experience with these factors.

In addition to the topics presented in Table XIV, the ratings of four other questionnaire topics ("behavior implications of information,"

"conventional valuation bases," "major regulatory bodies," and "macro-economic theory") appeared to be partially affected by the respondents' replies to the "management level" portion of the demographic section of the final questionnaire. Each of these four topics was rated higher by the "top management" population subgroup than by the other "management level" population subgroups and was rated higher by the "middle management" population subgroup than by the "staff and other" population subgroup. Because these topics are related to other topics discussed in this chapter subsection, they are not further discussed here.

Analysis of Ratings by Respondents' Firm's  
Product

A review of the replies to the request for the respondent's firm's product shows that 144 respondents are employed by "manufacturing" companies and 61 respondents are employed by "nonmanufacturing" companies. The rankings and mean ratings of the individual management accounting topics on the basis of these two population subgroups are presented in Table XV. The topics are listed in the rank order of importance to the "manufacturing" respondents.

Several differences in the ranking and mean ratings are probably due to other demographic factors. For that reason, the discussion here focuses on those topics where differences in the topic rankings exceed three ranks and differences in topic ratings exceed .50. To understand how other demographic factors could affect the ratings of importance shown in Table XV and indicate major differences where none actually exist, the reader should look at the mean ratings of "international reporting" in that table. The mean rating of importance on this topic

TABLE XV  
RANKING AND MEAN RATING OF EACH TOPIC  
BY RESPONDENTS' FIRM'S PRODUCT

Topic Titles	Topic Ranks (Mean Ratings)*	
	Manu- facturing	Non-manu- facturing
Cost Behavior	1 (4.24)	8 (3.66)
Variance Analysis	2 (4.13)	10 (3.61)
Forecasting	3 (4.07)	3 (3.90)
Segment Accounting	4 (4.00)	5 (3.82)
Capital Budgeting	5 (3.93)	7 (3.67)
Financial Statement Preparation	6 (3.92)	4 (3.83)
Computer Systems	7 (3.89)	1 (3.97)
Information Content	8 (3.88)	2 (3.96)
Working Capital Management	9 (3.78)	15 (3.21)
Financial Statement Analysis	10 (3.67)	11 (3.30)
Motivation and Perception	11 (3.54)	9 (3.64)
Conventional Valuation Bases	12 (3.53)	12 (3.28)
Behavior Implications of Information	13 (3.47)	6 (3.68)
Ethical Considerations	14 (3.41)	14 (3.26)
Long-term Finance	15 (3.31)	13 (3.27)
Independent Auditing	16 (3.20)	18 (3.11)
Internal Auditing	17 (3.14)	16 (3.14)
Organization Theory	18 (3.02)	20 (3.02)
Tax Regulations	19 (3.01)	17 (3.13)
Major Regulatory Bodies	20 (3.00)	19 (3.03)
Macroeconomic Theory	21 (2.79)	22 (2.69)
Microeconomic Theory	22 (2.78)	23 (2.66)
Other Valuation Bases	23 (2.72)	24 (2.34)
Quantitative Methods	24 (2.33)	21 (2.70)
Other Groups	25 (2.26)	25 (2.33)
International Reporting	26 (2.25)	27 (1.10)
Computer Programming	27 (1.61)	26 (2.15)
Social Measurement and Reporting	28 (1.36)	28 (0.97)
Average Ratings of Importance	3.23	3.08

\*Rank: 1 = High, 28 = Low

Ratings: Zero (0) = No Importance, One (1) = Little Importance,  
Two (2) = Below Average Importance, Three (3) = Above Average Importance,  
Four (4) = Very Important, Five (5) = Extremely Important

by the "manufacturing" subgroup of respondents is 2.25, and the mean rating of importance on this topic by the "nonmanufacturing" subgroup of respondents is 1.10. Inspection of Table XXV in Appendix H reveals that a much larger percentage of "international firm" respondents are employed by "manufacturing" companies than are "noninternational firm" respondents. The difference in the ratings between the two "firm product" population subgroups, then, is probably due to the influence of the other demographic factor (respondent's firm's market area) which is discussed in the next subsection of this chapter.

Three topics in Table XV indicate differences in the topic rankings by the "manufacturing" subgroup and the "nonmanufacturing" subgroup which exceed three ranks and differences in the topic ratings between the two "firm product" population subgroups which exceed .50. The three topics ("cost behavior," "variance analysis," and "working capital management") are shown in Table XVI.

"Cost behavior" and "variance analysis" ranked relatively higher to and were rated relatively higher by the "manufacturing" respondents than the "nonmanufacturing" respondents. Both of these topics are closely associated with cost gathering and controlling activities of manufacturing companies. For that reason, the relatively higher rankings (and mean ratings) of these two topics by the "manufacturing" subgroup of respondents appears reasonable.

"Working capital management" was rated higher by the "manufacturing" population subgroup than by the "nonmanufacturing" population subgroup. This seems to indicate that respondents employed by manufacturing companies are more sensitive to working capital considerations than are respondents employed by companies which are not engaged in manufacturing

TABLE XVI  
 RANKING AND MEAN RATING OF EACH TOPIC  
 BY RESPONDENTS' FIRM'S PRODUCT--  
 DISCUSSION WARRANTED

Topic Titles	Topic Ranks (Mean Ratings)*	
	Manufacturing	Non-manufacturing
Cost Behavior	1 (4.24)	8 (3.66)
Variance Analysis	2 (4.13)	10 (3.61)
Working Capital Management	9 (3.78)	15 (3.21)
Average Ratings of Importance - All 28 Topics	3.23	3.08

\*Ranks: 1 = High, 28 = Low  
 Ratings: Zero (0) = No Importance, One (1) = Little Importance,  
 Two (2) = Below Average Importance, Three (3) = Above Average Importance,  
 Four (4) = Very Important, Five (5) = Extremely Important

activities. Because manufacturing companies typically have large investments in various inventories, and because the cash flows of manufacturing companies are usually more unpredictable than they are for nonmanufacturing firms such as insurance companies and banks, the suggestion that respondents employed by manufacturing companies are more sensitive to appropriate techniques of managing working capital accounts seems reasonable.

### Analysis of Ratings by Respondents'

#### Firm's Market Area

Respondents were asked to indicate their employer's market area by circling or writing in the phrase which best described the market area served by their firm. The firm market areas and the number of respondents employed by firms with those market areas are "international" (94), "national" (70), and "regional, state, local, or other" (41). The rankings and mean ratings of the individual questionnaire topics by these three population subgroups are shown in Table XVII. The topics are listed in the rank order of importance to the "national firms" respondents.

Many of the differences in topic rankings and mean ratings are probably due to the effects of other demographic factors so only a few differences in the topic rankings and mean ratings are discussed in this chapter subsection. The topics discussed are listed in Table XVIII.

Although "tax regulations" was rated substantially higher by the "other firms" subgroup of respondents than by the respondents employed by firms with relatively wide market areas, the relatively higher rating of this topic by the "other firms" population subgroup is probably due partially to the higher percentage of "top management" respondents in the



TABLE XVII

RANKING AND MEAN RATING OF EACH TOPIC BY  
RESPONDENTS' FIRM'S MARKET AREA

Topic Titles	Topic Ranks (Mean Ratings)*		
	Inter- national Firms	National Firms	Other Firms
Cost Behavior	2 (4.15)	1 (4.17)	5 (3.73)
Forecasting	3 (4.05)	2 (4.09)	2 (3.83)
Variance Analysis	5 (4.03)	3 (4.03)	4 (3.74)
Information Content	7 (3.96)	4 (3.93)	6 (3.73)
Segment Accounting	1 (4.19)	5 (3.91)	11 (3.45)
Capital Budgeting	8 (3.89)	6 (3.89)	7 (4.71)
Computer Systems	6 (3.98)	7 (3.86)	1 (3.85)
Financial Statement Preparation	4 (4.04)	8 (3.76)	3 (3.80)
Working Capital Management	11 (3.72)	9 (3.56)	12 (3.44)
Conventional Valuation Bases	14 (3.50)	10 (3.44)	13 (3.38)
Financial Statement Analysis	9 (3.76)	11 (3.41)	14 (3.37)
Behavior Implications of Information	12 (3.65)	12 (3.39)	9 (3.49)
Motivation and Perception	10 (3.73)	13 (3.31)	8 (3.61)
Ethical Considerations	13 (3.54)	14 (3.21)	16 (3.22)
Long-term Finance	15 (3.43)	15 (3.11)	15 (3.34)
Independent Auditing	18 (3.22)	16 (3.10)	17 (3.30)
Internal Auditing	17 (3.26)	17 (3.00)	18 (3.10)
Organization Theory	19 (3.03)	18 (2.99)	19 (3.01)
Tax Regulations	20 (2.97)	19 (2.90)	10 (3.46)
Major Regulatory Bodies	16 (3.28)	20 (2.84)	22 (2.71)
Other Valuation Bases	24 (2.82)	21 (2.51)	25 (2.29)
Quantitative Methods	25 (2.40)	22 (2.46)	23 (2.51)
Macroeconomic Theory	21 (2.94)	23 (2.40)	21 (2.95)
Microeconomic Theory	22 (2.93)	24 (2.34)	20 (3.00)
Other Groups	26 (2.24)	25 (2.20)	24 (2.49)
Computer Programming	27 (1.63)	26 (1.94)	26 (1.80)
International Reporting	23 (2.90)	27 (1.33)	28 (0.61)
Social Measurement and Reporting	28 (1.40)	28 (1.16)	27 (1.02)
Average Ratings of Importance	3.31	3.08	3.07

\*Rank: 1 = High, 28 = Low

Ratings: Zero (0) = No Importance, One (1) = Little Importance,  
Two (2) = Below Average Importance, Three (3) = Above Average Importance,  
Four (4) = Very Important, Five (5) = Extremely Important

TABLE XVIII  
 RANKING AND MEAN RATING OF EACH TOPIC BY  
 RESPONDENTS' FIRM'S MARKET AREA--  
 DISCUSSION WARRANTED

Topic Titles	Topic Ranks (Mean Ratings)*		
	Inter- national Firms	National Firms	Other Firms
Segment Accounting	1 (4.19)	5 (3.91)	11 (3.45)
Financial Statement Analysis	9 (3.76)	11 (3.41)	14 (3.37)
Tax Regulations	20 (2.97)	19 (2.90)	10 (3.46)
Major Regulatory Bodies	16 (3.28)	20 (2.84)	22 (2.71)
Macroeconomic Theory	21 (2.94)	23 (2.40)	21 (2.95)
International Reporting	23 (2.90)	27 (1.33)	28 (0.61)
Social Measurement and Reporting	28 (1.40)	28 (1.16)	27 (1.02)
Average Ratings of Importance - All 28 Topics	3.31	3.08	3.07

\*Ranks: 1 = High, 28 = Low  
 Ratings: Zero (0) = No Importance, One (1) = Little Importance,  
 Two (2) = Below Average Importance, Three (3) = Above Average Importance,  
 Four (4) = Very Important, Five (5) = Extremely Important

"other firms" subgroup than in the subgroups of respondents employed by firms with relatively wide market areas (see Table XXV in Appendix H). The relatively high mean rating of "macroeconomic theory" by the "other firms" subgroup as compared with the "national firms" subgroup is also probably due partially to the higher percentage of "top management" respondents in the "other firms" subgroup of respondents.

The topic which ratings appeared to most influenced by the respondent's firm's market area is "international reporting." The mean ratings of importance on "social measurement and reporting" seem to indicate that this topic is relatively more important to respondents employed by firms with relatively wide market areas. The relatively higher mean rating of "social measurement and reporting" by the respondents employed by firms with relatively wide market areas is not unusual because firms with relatively wide market areas usually have a wider range of social responsibilities than do firms with relatively narrow market areas.

"Segment accounting," "financial statement analysis," and "major regulatory bodies" were each rated highest by the "international firms" population subgroup and lowest by the "other firms" population subgroup. The higher mean rating of "segment accounting" by the respondents employed by firms with relatively wide market area appears reasonable because firms with relatively wide market areas are usually separated into more divisions, departments, products, and so forth than are firms with relatively narrow market areas. The accounting statements and merger activities of firms with relatively wide market areas typically come under closer scrutiny by outsiders than do the accounting statements and merger activities of firms with relatively narrow market areas. For

that reason, the higher mean ratings of "financial statement analysis" and "major regulatory bodies" by the respondents employed by firms with relatively wide market areas also appears to be reasonable.

#### Summary

Chapter IV contains two major sections. The first section of this chapter presents the mean rating of importance and the standard deviation of the ratings on each of the 28 questionnaire topics. The topics were divided into five groups based on gaps in the mean ratings of the various selected topics.

The highest mean ratings were achieved by the four questionnaire topics which accounting educators usually associate with coverage in traditional managerial accounting courses. Knowledge of computer capabilities and control devices was rated substantially higher than knowledge about computer programming. Several finance and behavioral topics achieved relatively high ratings. Relatively low mean ratings were assigned to topics such as economics and quantitative methods. These observations and others are discussed in Chapter V, and results of this study which were discussed in the first section of Chapter IV are compared with findings of other studies to determine implications of this study's results to the accounting curricula and to the CMA examination.

The second major section of Chapter IV contains discussions of effects which respondents' demographic replies had on the various topic ratings. Topics which ratings appeared to be most affected by the respondents' management level were classified as finance, behavioral, and external force subjects. Topics which ratings seemed to be most affected by the respondents' firm's product were two traditional

managerial accounting subjects and one finance subject. Except for "international reporting" the topics which ratings appeared to be most affected by the respondents' firm's market area may generally be termed external force subjects. Results of the analyses on effects which demographic replies had on the topic ratings are discussed according to the implications they have to the continuing education considerations for industrial accountants.

## CHAPTER V

### IMPLICATIONS OF THE RESULTS AND RECOMMENDATIONS

#### Introduction

This study set out to determine and analyze the perceptions of industrial CMAs on the importance of selected management accounting topics in meeting their professional responsibilities. In addition, an attempt was made to determine the impact of certain demographic factors (respondent's management level, respondents' firm's product, and respondents' firm's market area) on the ratings of importance on the various management accounting topics.

To accomplish the objectives of this study, a reliable and valid questionnaire was developed. The procedures followed to develop and administer the questionnaire were discussed in Chapter III. When the questionnaires were returned, the response data were subjected to statistical analyses described in Chapter III. Observations made based on the statistical analyses were included in Chapter IV. Implications of this study's results are discussed in the current chapter.

This chapter contains four main sections. First, implications of this study's results to the accounting curricula are presented. Second, implications of this study's results to the five-part CMA examination are discussed. Third, implications of this study's results to the continuing education considerations for industrial accountants are listed.

Last, the author's recommendations for future research are presented.

### Implications of Results to the Accounting Curricula

A major purpose of accounting education is to provide accounting graduates with a basic foundation of knowledge so they will be equipped to meet the demands of future employers. To determine if the results of the current study indicated possible changes in the current accounting curricula, the researcher compared the rankings of the selected management accounting topics presented in Table VII of Chapter IV with the rankings of the selected management accounting topics which he developed by referring to a recent study of the accounting curricula by an AAA committee.<sup>1</sup>

One of the objectives of the AAA committee's study was to compare the content and coverage levels of three professional accounting examinations, as perceived by the committee, with content and coverage levels of the current accounting curricula as perceived by respondents to a curriculum survey. The respondents in the AAA committee survey were department chairpersons at 203 American colleges and universities which offer accounting programs leading to a baccalaureate and/or master's degree with an accounting concentration.

The list of 72 topics which the AAA committee used in their study is presented in Table IV of the current study. The committee's report showed the percentage of replies on content levels in undergraduate programs for each of the 72 topics using the following scale:

Level 0: The topic either is not covered in a program or it is offered in a course taken by fewer than one-third of all accounting students in a program.

- Level 1: Introductory level knowledge, implying an awareness and general understanding of principal topics.
- Level 2: Application of knowledge and demonstration of analytical capability on the solution of specific problem situations.
- Level 3: An extension of Level 2 capabilities to include interpretation, evaluation, and synthesis of complex situations. Level 3 implies an in-depth understanding of the topic and an ability to communicate conclusions.

For purposes of the current study, the researcher calculated the average content level response for each of the 72 topics. Then, each topic on the AAA list was placed in one of the 28 categories used in the current study. The average content level of each questionnaire topic in the current study was calculated as the mean of the average content levels of the AAA topics included in each of the current study's categories. Then, the average content level of each questionnaire topic was ranked from one (highest average content level) to 28 (lowest average content level). Table XIX shows a comparison of these topic rankings with the topic rankings presented in Table VII of the current study.

The adequacy of the current coverage of the various management accounting topics cannot be determined by comparing the topic rankings in Table XIX because the rankings only indicate the relative coverage of each topic in the accounting curricula and the relative importance of each topic as perceived by the respondents in this study. That is, even though a topic may rank high in importance to industrial CMAs but rank low in the relative coverage which it receives in the current accounting curricula; the amount of coverage given to the topic in the current accounting curricula may be adequate. On the other hand, a topic may rank low in importance to industrial CMAs but rank high in the relative



TABLE XIX

COMPARISON OF THIS STUDY'S TOPIC RANKINGS WITH  
TOPIC RANKINGS DEVELOPED FROM CURRICULUM  
SURVEY RESPONSES

Topic Titles	Rank of Topic This Study	Rank of Topic AAA Study
Cost Behavior	1	4
Forecasting	2	10
Variance Analysis	3	2
Segment Accounting	4	18
Computer Systems	5	19.5*
Information Content	6	24
Financial Statement Preparation	7	5
Capital Budgeting	8	9
Working Capital Management	9	6
Motivation and Perception	10	22
Financial Statement Analysis	11	15
Behavior Implications of Information	12	16
Conventional Valuation Bases	13	1
Ethical Considerations	14	25
Long-term Finance	15	7
Independent Auditing	16	17
Internal Auditing	17	13
Tax Regulations	18	12
Major Regulatory Bodies	19	21
Organization Theory	20	14
Macroeconomic Theory	21	11
Microeconomic Theory	22	8
Other Valuation Bases	23	23
Quantitative Methods	24	3
Other Groups	25	28
International Reporting	26	26
Computer Programming	27	19.5*
Social Measurement and Reporting	28	27

\*Only one topic on the AAA topic list dealt with computers.

coverage which it receives in the current accounting curricula, and the amount of coverage given to the topic in the current accounting curricula may be inadequate.

What may be implied by comparing the topic rankings in Table XIX are possible changes in the relative amount of coverage which each of the selected management accounting topics receives in the current accounting curricula. The reader should remember, though, that the rankings of the management accounting topics based on the responses in the current study represent the perceptions of importance of industrial accountants who have several years of accounting experience.

Comparison of the topic rankings in Table XIX indicates that relatively more coverage may need to be given to the following topics in the accounting curricula than they currently receive:

1. Cost behavior
2. Segment accounting
3. Computer systems
4. Information content
5. Motivation and perception
6. Ethical considerations.

Comparison of the topic rankings in Table XIX also indicates that relatively less coverage may need be given to the following topics in the accounting curricula than they currently receive:

1. Conventional valuation bases
2. Long-term finance
3. Tax regulations
4. Organization theory
5. Macroeconomic theory
6. Microeconomic theory
7. Quantitative methods
8. Computer programming.

### Implications of Results to the CMA Examination

To determine if the results of the current study indicated possible changes in the content of future CMA examinations as compared with the content of the first four CMA examinations, rankings of the selected management accounting topics presented in Table VII of Chapter IV were compared with rankings of the selected management accounting topics developed from an analysis of the content of the first four CMA examinations.<sup>2</sup> A list of 20 topics (Table V in Chapter IV) was developed by referring to the 1976 CMA Program Announcement.<sup>3</sup> The examination analysis consisted of a review of each problem and question on each of the first four CMA examinations to determine the appropriate time assignment to specific topics. Optional problems were assigned only partial amounts of time. For example, if a candidate was required to work only two of three optional problems, only 2/3 of the allotted time on each of the three problems was assigned to the topic(s) identified on the problem. If a problem included subject matter in two or more topics, the time assignment was based on the author's estimate of the amount of time necessary to complete the requirements of each topic. Unofficial answers to the problems were also used to help evaluate the appropriate time assignments where multiple-topics were included in one problem.

The total number of minutes of examination time that were devoted to each of the 28 selected management accounting topics were determined, and each topic was ranked according to the number of minutes devoted to it. Table XX shows the resulting topic rankings as compared with the topic rankings which were presented in Table VII of Chapter IV.

TABLE XX  
 COMPARISON OF THIS STUDY'S TOPIC RANKINGS WITH  
 TOPIC RANKINGS DEVELOPED FROM ANALYSIS  
 OF CMA EXAMINATIONS

Topic Titles	Rank of Topic This Study	Rank of Topic Exam Time
Cost Behavior	1	1
Forecasting	2	25
Variance Analysis	3	10
Segment Accounting	4	2
Computer Systems	5	19
Information Content	6	23
Financial Statement Preparation	7	4
Capital Budgeting	8	13
Working Capital Management	9	11
Motivation and Perception	10	9
Financial Statement Analysis	11	12
Behavior Implications of Information	12	8
Conventional Valuation Bases	13	16
Ethical Considerations	14	17
Long-term Finance	15	7
Independent Auditing	16	18
Internal Auditing	17	14
Tax Regulations	18	6
Major Regulatory Bodies	19	15
Organization Theory	20	21
Macroeconomic Theory	21	3
Microeconomic Theory	22	20
Other Valuation Bases	23	24
Quantitative Methods	24	5
Other Groups	25	22
International Reporting	26	28
Computer Programming	27	26
Social Measurement and Reporting	28	27

A comparison of the topic rankings in Table XX does not say anything about the adequacy of the coverage given the various topics on the first four CMA examinations because the rankings only indicate the relative coverage of each topic on the first four CMA examinations and the relative importance of each topic as perceived by the respondents in the current study. Comparison of the topic rankings do, however, imply possible changes in the content of future CMA examinations regarding the relative amount of coverage which should be given to each topic. Relatively more coverage may need to be given to the following topics on future CMA examinations:

1. Forecasting
2. Variance analysis
3. Computer systems
4. Information content
5. Capital budgeting.

On the other hand, relatively less coverage may need to be given to the following topics on future CMA examinations:

1. Long-term finance
2. Tax regulations
3. Macroeconomic theory
4. Quantitative methods.

The final questionnaire in Appendix D contains descriptions of each of the topics listed in this and the preceeding sections of the chapter. The next section of this chapter outlines implications of the current study's results to the continuing education considerations for industrial accountants.

Implications of Results to the Continuing  
Education Considerations for Industrial  
Accountants

A major objective of continuing education is to maintain the professional competence of the individual. Another objective of continuing education is to prepare the individual for future advancement or for changing employers. Decisions concerning the subject matter to be included in continuing education programs should be made according to an individual's personal goals.

The implications of the current study's results to continuing education considerations for industrial accountants are based on differences in perceived importance of the selected management accounting topics between the various population subgroups. The following discussion is based on the information presented in Tables XIV, XVI, and XVIII in Chapter IV.

Respondents in relatively high management level positions rated several topics higher than did respondents in relatively low management level positions. The individual who wishes to advance to a higher level industrial accounting position should consider concentrating his continuing education efforts on the following topics:

1. Financial statement preparation
2. Capital budgeting
3. Working capital management
4. Motivation and perception
5. Financial statement analysis
6. Ethical considerations
7. Long-term finance
8. Independent auditing
9. Tax regulations
10. Organization theory
11. Other groups
12. Other external forces.

Respondents employed by manufacturing companies rated three topics substantially higher than did respondents employed by nonmanufacturing companies. The individual whose personal goals include moving from a position with a nonmanufacturing company to a position with a manufacturing company should give consideration to the following three topics for possible subjects of continuing education to include in his program:

1. Cost behavior
2. Variance analysis
3. Working capital management.

Respondents employed by firms with relatively wide market areas rated several topics higher than did respondents employed by firms with relatively narrow market areas. The individual who is contemplating a move from an industrial accounting position in a firm with a relatively narrow market area to an industrial accounting position in a firm with a relatively wide market area should consider concentrating his continuing education efforts on the following topics:

1. Segment accounting
2. Financial statement analysis
3. Major regulatory bodies
4. International reporting
5. Social measurement and reporting

Implications of the results in the preceding discussion are based on the differences in the mean ratings achieved by the various management accounting topics between the population subgroups which were identified in this study. The following section of this chapter presents the author's recommendations for future research in an area which he feels is in need of more research: educational considerations of industrial accountants.

### Recommendations for Future Research

The scope of this study was narrow. For that reason, more questions may have been raised in the reader's mind than were answered. Even though the results of this study represent the perceptions of importance on the various management accounting topics of industrial accountants who have several years of experience, the results contain implications for possible changes in the relative amount of coverage given to several topics in the accounting curricula and on CMA examinations.

A more indepth study of industrial accountants is probably necessary to determine the need for specific changes in the accounting curricula and future CMA examinations. Perhaps a study of the perceptions of industrial accountants on the importance of selected management accounting topics should be undertaken by an accounting organization with adequate time and funds. The study should survey a wider range of respondents than did the current study (include more less-experienced industrial accountants) and should somehow equate the perceptions of the respondents to current accounting curricula coverage of the selected management accounting topics.

A study which would compare the perceptions of industrial accountants on the importance of selected management accounting topics with the subject matter covered in recent professional examinations would probably be useful to examination administrators in making decisions about the content of future professional examinations. The perceptions of the respondents would somehow need to be equated with the content coverage of each topic on recent professional examinations.



Because educational needs of accountants are constantly changing, follow-up studies of the kinds described above should be conducted on a periodic basis. Continuing information about the subject matter which is considered important to the actual users of accounting education would provide inputs to professional examination content decisions and to the decisions of accounting educators who desire to keep their curriculum requirements and course contents relevant to the needs of the users of the educator's product.

FOOTNOTES

<sup>1</sup>American Accounting Association, "Report of the 1973-74 and 1974-75 Committees on Professional Examinations," Supplement to Volume XLXI of the Accounting Review, pp. 1-37.

<sup>2</sup>Neal R. VanZante, "The CMA Examination: Increasing Breadth and Rigor " (Unpub. manuscript, National Association of Accountants, 1976.)

<sup>3</sup>Institute of Management Accounting, Certificate in Management Accounting, 1976 Announcement (New York: National Association of Accountants, 1975), pp. 5-9.

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APPENDIX A

OUTLINE OF QUESTIONNAIRE DEVELOPMENT PROCEDURES

1. A list of management accounting topics was developed from each of five sources. (See Chapter II for a discussion of each source.)
  - a. CMA Program Announcements.
  - b. AAA Committee study.
  - c. Krogstad and Harris study.
  - d. Deakin and Summers study.
  - e. Content analysis of the first four CMA examinations.
2. A list of forty-nine (40) management accounting topics was developed by combining the five topic lists developed in step (1).
3. A list of twenty-seven (27) management accounting topics was developed by combining narrow topics in step (2) in an attempt to include approximately the same breadth of subject matter within each topic.
4. A brief description for each topic was developed by referring to textbooks and Horizons for a Profession.
5. A tentative questionnaire was developed by combining the list of management accounting topics in step (3), the brief topic descriptions in step (4), and a request for certain demographic information.
6. A test questionnaire (Appendix C) was developed after obtaining the comments of several industrial accountants, three accounting professors, and Dr. James Bulloch.\*
7. A final questionnaire (Appendix D) was developed after a pretest consisting of eighteen industrial accounting members of the Oklahoma City Chapter of the National Association of Accountants and after further discussions with accounting professors.

\*The suggestions of Dr. James Bulloch, Director of the Institute of Management Accounting, were most helpful to the researcher in developing the demographic portion of the questionnaire.



APPENDIX B

OUTLINE OF QUESTIONNAIRE DISTRIBUTION PROCEDURES

1. Official mailing labels for all CMAs were received from the Institute of Management Accounting.
2. CMAs obviously employed by public accounting firms, management consulting firms, educational institutions, and governmental agencies were eliminated by referring to the Roster of CMAs as of June, 1975 and a list of successful candidates on the June, 1975 examination published in the December, 1975 issue of Management Accounting.
3. Each remaining CMA was assigned a number to be used for identification purposes throughout the remainder of the questionnaire distribution process.
4. Two hundred thirty-three (233)\* cover letters (Appendix E), questionnaires (Appendix D), and stamped return envelopes were mailed to the remaining group of CMAs. An identification number was placed at the top of each questionnaire.
5. Sixty-one (61) second cover letters (Appendix F), questionnaires, and stamped return envelopes were mailed to the remaining group of CMAs who had not responded by the cut-off date. After the second mailing, several questionnaires were received from the first mailing.
6. Twenty-nine (29) final requests (Appendix G), questionnaires, and stamped return envelopes were mailed to the remaining group of CMAs who had not responded within two weeks after the second mailing. After the third mailing, several questionnaires were received from the first and second mailings.

Final usable responses from each mailing was as follows:

First	178
Second	18
Final	<u>9</u>
Total	<u>205</u>

\*During the questionnaire distribution process, fifteen (15) CMAs were eliminated from the study because they were not industrial CMAs. The further elimination was expected because the firm names of some CMAs did not allow for obvious elimination prior to the original mailing.

APPENDIX C

TEST QUESTIONNAIRE

INSTRUCTIONS: Please circle the number to the left of each topic which indicates your opinion of how important the topic is to you in meeting the responsibilities of your current position. The following guideline is presented to aid you in your ratings:

Zero (0)-----No importance  
 One (1)-----Little importance  
 Two (2)-----Below average importance  
 Three (3)-----Above average importance  
 Four (4)-----Very important  
 Five (5)-----Extremely important

- 0 1 2 3 4 5 Microeconomic Theory. Knowledge of supply and demand and the underlying factors for the individual business; understanding of the effects of different types of competition on prices.
- 5 4 3 2 ] 0 Macroeconomic Theory. Knowledge of major economic trends, national and international economic issues; understanding of the effects of monetary and fiscal policies on operations.
- 0 1 2 3 4 5 Long-term Finance. Knowledge of investment theory and the underlying factors of a firm's cost-of-capital; understanding of the cost of alternative sources of capital.
- 5 4 3 2 1 0 Organizational Theory. Knowledge of hierarchial, line, and staff structures; understanding of the advantages and disadvantages of different organizational plans and structures.
- 0 1 2 3 4 5 Ethical Considerations. Knowledge of the management accountant's commitments and responsibilities to his employer, his profession, and to society; understanding of the underlying rationale of professional ethics.
- 5 4 3 2 1 0 Information Content. Knowledge of the cost and value of information and means of communicating information including report design; understanding of the knowledge as it is utilized in planning and administering information systems.
- 0 1 2 3 4 5 Behavior Implications of Information. Knowledge of how individuals react to information and the effects on behavior of different communication methods; understanding of the knowledge as it is utilized in planning and administering information systems.
- 5 4 3 2 1 0 Motivation and Perception. Knowledge of human needs and self-fulfillment and the effects of different management styles on behavior; understanding of employee motivation and effects of policy changes on employee behavior.
- 0 1 2 3 4 5 Financial Statement Preparation. Knowledge of principal financial statements and disclosure requirements; understanding of the effects of using alternative generally accepted accounting principles.

- 5 4 3 2 1 0 Conventional Valuation Bases. Knowledge of generally accepted valuation bases for external reporting; understanding of what constitutes generally accepted accounting principles.
- 0 1 2 3 4 5 Other Valuation Bases. Knowledge of valuation bases which are not currently generally accepted for external reporting; understanding of the advantages and disadvantages of other valuation bases.
- 5 4 3 2 1 0 Major Regulatory Bodies. Knowledge of the activities of the FASB, the CASB, and the SEC including their influence on reporting requirements; understanding of the influence which these bodies have on generally accepted accounting principles.
- 0 1 2 3 4 5 Tax Regulations. Knowledge of specific tax laws and tax report preparation; understanding of the effects which tax regulations have on decision-making.
- 5 4 3 2 1 0 Other Groups. Knowledge of the activities of other regulatory agencies, labor unions, consumer groups, etc., understanding of the effects which these groups have on reporting requirements and business operations.
- 0 1 2 3 4 5 International Reporting. Knowledge of international reporting standards; understanding of foreign currency translation including the ability to apply understanding to specific circumstances.
- 5 4 3 2 1 0 Social Measurement and Reporting. Knowledge of techniques available to measure the meeting of social responsibilities; understanding of appropriate reporting methods.
- 5 4 3 2 1 0 Financial Statement Analysis. Knowledge of techniques for analyzing principal financial statements including use of this knowledge for decisions involving consolidations, mergers, and acquisitions; understanding of the utilization of specific analytical measures.
- 0 1 2 3 4 5 Working Capital Management. Knowledge of policies and procedures which effect working capital accounts; understanding of methods available for planning and controlling specific accounts.
- 5 4 3 2 1 0 Capital Budgeting. Knowledge of budgeting techniques for long-run decision-making; understanding of methods available for evaluating alternatives.
- 0 1 2 3 4 5 Forecasting. Knowledge of forecasting techniques as utilized in the preparation of budgets; understanding of the different variables and their interrelationships as utilized in forecast preparation.

- 5 4 3 2 1 0 Segment Accounting. Knowledge of techniques utilized in evaluating performance of divisions, departments, products, etc.; understanding of the effects which alternative allocation methods have on performance evaluation.
- 0 1 2 3 4 5 Cost Behavior. Knowledge of cost behavior such as fixed-variable relationships including break-even analysis, understanding of direct costing versus absorption costing including the advantages and disadvantages of each.
- 5 4 3 2 1 0 Variance Analysis. Knowledge of techniques used for determination of variances from established forecasts; understanding of necessary corrective actions based on the analysis of variances.
- 0 1 2 3 4 5 Independent Auditing. Knowledge of the reasons for independent audits and the ethical and legal responsibilities of the independent auditor; understanding of the relationship of the independent auditor to his client and to outsiders.
- 5 4 3 2 1 0 Internal Auditing. Knowledge of the activities of the internal auditor and of the differences between internal and independent auditing; understanding of specific techniques utilized by the internal auditor and of specific methods of achieving good internal control.
- 0 1 2 3 4 5 Computer Systems. Knowledge of computer systems including their capabilities and control devices; understanding of how the computer may be utilized for various activities including the ability to participate in actual programming.
- 5 4 3 2 1 0 Quantitative Methods. Knowledge of specific higher-level quantitative methods such as queing theory, simulation methods, etc.; understanding of these methods including the ability to apply them to specific circumstances.

INSTRUCTIONS: For each item below, please circle the number (or numbers) of the phrase (or phrases) which best describe your current position and your current firm.

Your Position

1. Top Management
2. Middle Management
3. Staff Functions
4. Employee Within a Department

Your Major Accounting Responsibilities

1. Cost Accounting
2. Financial Analysis
3. Planning and Budgeting
4. General Accounting
5. Systems Analysis
6. Other (specify) \_\_\_\_\_

Your Firm's Market Area for Which You are Responsible

1. International
2. National
3. Regional
4. State
5. Local
6. Other (specify) \_\_\_\_\_

Your Firm's Product

1. Manufacturing
2. Distribution
3. Service

APPENDIX D

FINAL QUESTIONNAIRE



INSTRUCTIONS: Please circle the number to the left of each topic which indicates your opinion of how important the topic is to you in meeting the responsibilities of your current position. The following guideline is presented to aid you in your ratings:

Zero (0)-----No importance  
 One (1)-----Little importance  
 Two (2)-----Below average importance  
 Three (3)-----Above average importance  
 Four (4)-----Very important  
 Five (5)-----Extremely important

- 0 1 2 3 4 5 Microeconomic Theory. Knowledge of supply and demand and the underlying factors for the individual business; understanding of the effects of different types of competition on prices.
- 5 4 3 2 1 0 Macroeconomic Theory. Knowledge of major economic trends, national and international economic issues; understanding of the effects of monetary and fiscal policies on operations.
- 0 1 2 3 4 5 Long-term Finance. Knowledge of investment theory and the underlying factors of a firm's cost-of-capital; understanding of the cost of alternative sources of capital.
- 5 4 3 2 1 0 Organization Theory. Knowledge of hierarchial, line, and staff structures; understanding of the advantages and disadvantages of different organizational plans and structures.
- 0 1 2 3 4 5 Ethical Considerations. Knowledge of the management accountant's commitments and responsibilities to his employer, to his profession, and to society; understanding of the underlying rationale of professional ethics.
- 5 4 3 2 1 0 Information Content. Knowledge of the cost and value of information and means of communicating information including report design; understanding of the knowledge as it is utilized in planning and administering information systems.
- 0 1 2 3 4 5 Behavior Implications of Information. Knowledge of how individuals react to information and the effects on behavior of different communication methods; understanding of the knowledge as it is utilized in planning and administering information systems.
- 5 4 3 2 1 0 Motivation and Perception. Knowledge of human needs and self-fulfillment and the effects of different management styles on behavior; understanding of employee motivation and effects of policy changes on employee behavior.

- 0 1 2 3 4 5 Financial Statement Preparation. Knowledge of principal financial statements and disclosure requirements; understanding of the effects of using alternative generally accepted accounting principles.
- 5 4 3 2 1 0 Conventional Valuation Bases. Knowledge of generally accepted valuation bases for external reporting; understanding of what constitutes generally accepted accounting principles.
- 0 1 2 3 4 5 Other Valuation Bases. Knowledge of valuation bases which are not currently generally accepted for external reporting; understanding of the advantages and disadvantages of other valuation bases.
- 5 4 3 2 1 0 Major Regulatory Bodies. Knowledge of the activities of the FASB, the CASB, the SEC, etc., including their influence on reporting requirements; understanding of the influence which these bodies have on generally accepted accounting principles.
- 0 1 2 3 4 5 Tax Regulations. Knowledge of specific tax laws and tax report preparation; understanding of the effects which tax regulations have on decision-making.
- 5 4 3 2 1 0 Other Groups. Knowledge of the activities of other regulatory agencies, labor unions, consumer groups, etc.; understanding of the effects which these groups have on reporting requirements and business operations.
- 0 1 2 3 4 5 International Reporting. Knowledge of international reporting standards; understanding of foreign currency translation including the ability to apply understanding to specific circumstances.
- 5 4 3 2 1 0 Social Measurement and Reporting. Knowledge of techniques available to measure the meeting of social responsibilities, understanding of appropriate reporting methods.
- 0 1 2 3 4 5 Financial Statement Analysis. Knowledge of techniques for analyzing principal financial statements, including use of this knowledge for decisions involving consolidations, mergers, and acquisitions; understanding of the utilization of specific analytical measures.
- 5 4 3 2 1 0 Working Capital Management. Knowledge of policies and procedures which affect working capital accounts; understanding of methods available for planning and controlling specific accounts.
- 0 1 2 3 4 5 Capital Budgeting. Knowledge of budgeting techniques for long-run decision-making; understanding of methods available for evaluating alternative proposals.

- 5 4 3 2 1 0 Forecasting. Knowledge of forecasting techniques as utilized in the preparation of budgets; understanding of the different variables and their interrelationships as utilized in forecast preparation.
- 0 1 2 3 4 5 Segment Accounting. Knowledge of techniques utilized in evaluating performance of divisions, departments, products, etc.; understanding of the effect that alternative interdepartmental charges have on performance evaluation.
- 5 4 3 2 1 0 Cost Behavior. Knowledge of cost behavior such as fixed-variable relationships including profit-volume analysis; understanding of the knowledge as it affects managerial decision-making.
- 0 1 2 3 4 5 Variance Analysis. Knowledge of techniques used for determination of variances from established forecasts; understanding of necessary corrective actions based on the analysis of variances.
- 5 4 3 2 1 0 Independent Auditing. Knowledge of the reasons for independent audits and the ethical and legal responsibilities of the independent auditors; understanding of the relationship of the independent auditor to his client and to outsiders.
- 0 1 2 3 4 5 Internal Auditing. Knowledge of the activities of the internal auditor and of the differences between internal and independent auditing; understanding of specific techniques utilized by the internal auditor and of specific methods of achieving good internal control.
- 5 4 3 2 1 0 Computer Systems. Knowledge of computer systems including their capabilities and control devices; understanding of how the computer may be utilized for various business activities.
- 0 1 2 3 4 5 Computer Programming. Knowledge of computer programming language(s); understanding of the knowledge including the ability to participate in actual programming.
- 5 4 3 2 1 0 Quantitative Methods. Knowledge of specific higher-level quantitative methods such as queing theory, simulation methods, etc.; understanding of these methods including the ability to apply them to specific cases.

INSTRUCTIONS: For each item below, please circle the number (or numbers) of the phrase (or phrases) which best describes your current position and your current firm.

Your Position

1. Top Management
2. Middle Management
3. Staff Function
4. Non-supervisory Employee

Your Major Accounting Responsibilities

1. Cost Accounting
2. Financial Analysis
3. Planning and Budgeting
4. General Accounting
5. Systems Analysis
6. Other (specify) \_\_\_\_\_

Your Firm's Market Area for Which you Are Responsible

1. International
2. National
3. Regional
4. State
5. Local
6. Other (specify) \_\_\_\_\_

Your Firm's Product

1. Manufacturing
2. Distribution
3. Service
4. Other (specify) \_\_\_\_\_

APPENDIX E

COVER LETTER - FIRST MAILING



CENTRAL STATE UNIVERSITY / EDMOND, OKLAHOMA 73034

*School of Business*

March 23, 1976

Dear Mr. Smith:

Will you please take a few minutes to give me your ideas on the importance to your job of topics typically covered in university accounting programs?

You and your fellow CMAs employed in industrial accounting positions are the only individuals who will receive a copy of the attached questionnaire, so your responses will be extremely important to me. Your answers will help accounting teachers develop study plans that produce graduates qualified for industrial accounting jobs.

Please mail your completed questionnaire to me by April 10. Thank you.

Sincerely,

Neal R. VanZante, CMA  
Department of Accounting

Attachment  
Enclosure

APPENDIX F

COVER LETTER - SECOND MAILING



CENTRAL STATE UNIVERSITY / EDMOND, OKLAHOMA 73034

School of Business

April 13, 1976

Dear Mr. Smith:

On March 23 I mailed a copy of the attached questionnaire to you and your fellow industrial CMAs. The majority of the questionnaires have been returned, and several CMAs have expressed appreciation for the opportunity to contribute their valuable opinions to my study.

If you are among those who have not yet responded I would appreciate your taking a few minutes to complete your questionnaire and return it to me. If you have already mailed your questionnaire please ignore this second request and accept my thanks for your cooperation.

Sincerely,

*Neal*

Neal R. VanZante, CMA  
Department of Accounting

Enclosure  
Attachment

*Please, I need your help.*



APPENDIX G

COVER LETTER - FINAL MAILING



CENTRAL STATE UNIVERSITY / EDMOND, OKLAHOMA 73034

School of Business

April 27, 1976

Dear Mr. Smith:

On March 23 and April 13 I mailed copies of the enclosed questionnaire to you and other industrial CMAs. So far, over 90 percent of the questionnaires have been completed and returned.

Would you please complete your questionnaire and return it to me? If not would you check the appropriate response below? I would appreciate hearing from you by May 7. Thank you.

Sincerely,

*Neal*

Neal R. VanZante, CMA  
Department of Accounting

I am not an industrial CMA.

I am an industrial CMA but do not wish to participate in this study.

APPENDIX H

DEMOGRAPHIC INFORMATION

TABLE XXI  
 DISTRIBUTION OF SURVEY RESPONDENTS BY AAA REGION\*

AAA Region	No. of Questionnaires Mailed	No. of Usable Responses	Response Percent By Region	Percent of Total Usables
Northeast	39	37	94.87	18.05
Middle Atlantic	28	25	89.29	12.19
Southeast	30	29	96.67	14.15
Midwest	82	78	95.12	38.05
Southwest	16	15	93.75	7.32
West	<u>23</u>	<u>21</u>	<u>91.30</u>	<u>10.24</u>
Totals	218	205	94.04	100.00

\*Geographic regions of the United States according to the American Accounting Association.

TABLE XXII  
 DISTRIBUTION OF SURVEY RESPONDENTS BY STATES  
 IN EACH AAA REGION\*

AAA Region	Name of State (Number of Usable Responses/Total Mailed) In Alphabetical Order
Northeast	Connecticut(8/9); Maine(2/2); Massachusetts(9/9); New Hampshire(2/2); New York(16/17); Rhode Island(0/0); Vermont(0/0)
Middle Atlantic	Delaware(0/0); District of Columbia(0/0); Maryland(0/0); New Jersey(17/19); Pennsylvania(7/8); West Virginia(1/1)
Southeast	Alabama(4/4); Florida(2/2); Georgia(6/6); Kentucky(3/3); Mississippi(0/0); North Carolina(7/8); South Carolina(3/3); Tennessee(4/4); Virginia(0/0)
Midwest	Illinois(24/26); Indiana(4/5); Iowa(2/3); Kansas(1/1); Michigan(2/2); Minnesota(14/14); Missouri(2/2); Nebraska(5/5); North Dakota(0/0); Ohio(14/14); South Dakota(0/0); Wisconsin(10/10)
Southwest	Arkansas(0/0); Louisiana(4/4); New Mexico(0/0); Oklahoma(1/1); Texas(10/11)
West	Alaska(0/0); Arizona(1/2); California(13/13); Colorado(1/1); Hawaii(0/0); Montana(0/0); Nevada(0/0); Oregon(2/2); Utah(0/0); Washington(3/4); Wyoming(0/0)

\*States with no industrial CMAs--17 of 51 (including District of Columbia). States with only one or two industrial CMAs--13 of 51 representing only 9.76% of responses. States with ten or more industrial CMAs--8 of 51 representing 57.56% of responses.

TABLE XXIII  
DISTRIBUTION OF DEMOGRAPHIC RESPONSES

Category	Number	Percent
<u>Management Level:</u>		
Top Management	59	28.78
Middle Management	94	45.85
Staff and Non-supervisory Employees	<u>52</u>	<u>25.37</u>
	205	100.00
<u>Firm Market Area:</u>		
International	94	45.85
National	70	34.15
Regional, State, Local	<u>41</u>	<u>20.00</u>
	205	100.00
<u>Firm Product:</u>		
Manufacturing and Manufacturing Plus Others*	144	70.24
Nonmanufacturing	<u>61</u>	<u>29.76</u>
	205	100.00
<u>Major Accounting Responsibilities:</u>		
At least four marked (all included item #3**)	53	25.85
Item #3 included (one-three marked)	90	43.90
Other (less than three marked and #3 not included)	<u>62</u>	<u>30.25</u>
	205	100.00

\*Manufacturing included the extractive industries. Also 27 of the 144 marked an additional classification.

\*\*Item #3 (planning and budgeting) was chosen as a group because it was the responsibility chosen more times than any other.

TABLE XXIV  
DISTRIBUTION OF DEMOGRAPHIC RESPONSES  
BY AAA REGION

Cate- gory	Number (Percent of Regional Responses) by AAA Region					
	Northeast	Atlantic	Southeast	Midwest	Southwest	West
<u>Management Level:</u>						
Top	10(27.03)	7(28.00)	9(31.03)	18(23.08)	6(40.00)	9(42.86)
Middle	20(54.05)	12(48.00)	14(48.28)	35(44.87)	5(33.33)	8(38.10)
Staff, etc.	7(18.92)	6(24.00)	6(20.69)	25(32.05)	4(26.67)	4(19.04)
	<u>37( 100)</u>	<u>25( 100)</u>	<u>29( 100)</u>	<u>78( 100)</u>	<u>15( 100)</u>	<u>21( 100)</u>
<u>Firm Market:</u>						
Int.	21(56.76)	12(48.00)	9(31.04)	34(43.59)	8(53.33)	10(47.62)
National	9(24.32)	11(44.00)	10(34.48)	27(34.62)	5(33.33)	8(38.10)
Reg., etc.	7(18.92)	2( 8.00)	10(34.48)	17(21.79)	2(13.34)	3(14.28)
	<u>37( 100)</u>	<u>25( 100)</u>	<u>29( 100)</u>	<u>78( 100)</u>	<u>15( 100)</u>	<u>21( 100)</u>
<u>Responsibilities:</u>						
Four +	9(24.32)	7(28.00)	10(34.48)	15(19.23)	7(46.66)	5(23.81)
Resp. #3*+	20(54.05)	10(40.00)	12(41.38)	34(43.59)	4(26.67)	10(47.62)
Other	8(21.63)	8(32.00)	7(24.14)	29(37.18)	4(26.67)	6(28.57)
	<u>37( 100)</u>	<u>25( 100)</u>	<u>29( 100)</u>	<u>78( 100)</u>	<u>15( 100)</u>	<u>21( 100)</u>
<u>Firm Product:</u>						
Manfg.	26(70.27)	20(80.00)	16(55.17)	55(70.51)	12(80.00)	15(71.42)
Non-Mfg.	11(29.73)	5(20.00)	13(44.83)	23(29.49)	3(20.00)	6(28.58)
	<u>37( 100)</u>	<u>25( 100)</u>	<u>29( 100)</u>	<u>78( 100)</u>	<u>15( 100)</u>	<u>21( 100)</u>

\*Planning and budgeting.

TABLE XXV  
SELECTED BREAKDOWNS OF DEMOGRAPHIC RESPONSES

Category	Number (Percent of Firm Level Responses)			Number (Percent of Firm Product Responses)	
	Int.	National	Other	Mfg.	Non-Mfg.
<u>By Management Level:</u>					
Top	28(29.79)	18(25.71)	13(31.71)	43(29.86)	16(26.23)
Middle	40(42.55)	34(48.58)	20(48.78)	66(45.83)	28(45.90)
Staff, etc.	<u>26(27.66)</u>	<u>18(25.71)</u>	<u>8(19.51)</u>	<u>35(24.31)</u>	<u>17(27.87)</u>
	94( 100)	70( 100)	41( 100)	144( 100)	61( 100)
<u>By Firm Product:</u>					
Manufacturing	80(85.11)	51(72.86)	13(31.71)		
Non-Mfg.	<u>14(14.89)</u>	<u>19(27.14)</u>	<u>28(68.29)</u>		
	94( 100)	70( 100)	41( 100)		

\*The breakdowns of demographic responses shown in this table were chosen by the researcher because they are most significant to the objectives of this study. Also, other breakdowns which could be presented are consistent with what the reader may expect after inspection of this table.



VITA 2

Neal Roger VanZante

Candidate for the Degree of

Doctor of Philosophy

Thesis: A SURVEY OF THE PERCEPTIONS OF INDUSTRIAL CMAs ON THE  
IMPORTANCE OF SELECTED MANAGEMENT ACCOUNTING TOPICS

Major Field: Business Administration

Biographical:

Personal Data: Born in Ashland, Kentucky, October 28, 1946, the  
son of Mr. and Mrs. Herman L. VanZante.

Education: Graduated from Harding High School, Oklahoma City,  
Oklahoma in January, 1964; received Bachelor of Science degree  
in Management from Central State University, Edmond, Oklahoma  
in May, 1969; received Master of Science degree in Accounting  
from Oklahoma State University in May, 1970; completed require-  
ments for the Doctor of Philosophy degree at Oklahoma State  
University in December, 1976.

Professional Experience: District Circulation Manager, Zone Circu-  
lation Supervisor, and Country Circulation Manager, Oklahoma  
Journal Publishing Company, Oklahoma City, Oklahoma 1965-68;  
Instructor, Oklahoma School of Banking and Business, Oklahoma  
City, 1969-70; Staff Accountant, Thomas and Company, CPAs,  
Oklahoma City, Oklahoma, Spring, 1970; Assistant Internal  
Auditor, Oklahoma State University, Summer, 1970; Instructor  
and Assistant Professor, Central State University, Edmond,  
Oklahoma, 1970-76. Part-time public accounting practice,  
Edmond, Oklahoma, 1971-76; Assistant Professor and Associate  
Professor, Concordia University, Montreal, Quebec, Canada,  
June, 1976-present.

Professional Organizations: American Accounting Association;  
American Institute of Certified Public Accountants, Edmond  
Chamber of Commerce; Institute of Management Accounting;  
National Association of Accountants; Oklahoma Accounting  
Educators; Oklahoma Society of Certified Public Accountants.

Other Information: Certified Public Accountant, Oklahoma, 1971-  
present; holder of Certificate in Management Accounting, 1975-  
present; listed in Outstanding Young Men of America, 1971;  
listed in Who's Who in Oklahoma, 1974.