A STUDY OF SALES COMPENSATION IN THE ETHICAL PHARMACEUTICAL INDUSTRY, ITS ASSOCIATION WITH SALES EFFECTIVENESS, MANAGERIAL CONTROL, JOB REQUIREMENTS AND SALES MANAGERS' ATTITUDES TOWARD COMPENSATION CRITERIA

Thesis for the Degree of D. B. A.
MICHIGAN STATE UNIVERSITY
Gary A. Marple
1963

This is to certify that the

thesis entitled

A Study of Sales Compensation in the Ethical Pharmaceutical Industry: Its Association With Sales Effectiveness, Managerial Control, Job Requirements and Sales Managers' Attitudes Toward Compensation Criteria

presented by

Gary A. Marple

has been accepted towards fulfillment
of the requirements for

D. B. A. degree in Dept. of
Marketing and Transportation Administration
Graduate School of Business Administration

Major professor

Date August 23, 1963

ABSTRACT

A STUDY OF SALES COMPENSATION IN THE ETHICAL PHARMACEUTICAL INDUSTRY: ITS ASSOCIATION WITH SALES EFFECTIVENESS, MANAGERIAL CONTROL, JOB REQUIREMENTS AND SALES MANAGERS' ATTITUDES TOWARD COMPENSATION CRITERIA

by Gary A. Marple

The topic of this research is the association between sales compensation and various estimates of the marketing success of ethical pharmaceutical manufacturers who engage in presenting product information to physicians. Specifically, three subjects were investigated:

1. What are the existing sales compensation policies and practices of ethical pharmaceutical manufacturers?
2. Is compensation associated with various estimates of marketing effectiveness such as sales growth and product concentration?
3. What are the attitudes of sales managers toward the well-known criteria for designing compensation programs, namely, security of income, fairness to the company and the salesman, and incentive to perform the job? Furthermore, are these attitudes related to the company's compensation level?

The ethical pharmaceutical industry was selected due to its policy of not advertising to consumers and its necessity to provide a careful sales presentation to the prescribing physician. While exceptions can

be fou

follow

hundr

ethic

all of

is fou

saler

manu

large

twen

dents

indus

dom

samp

indu

twen

whic

adm

as a

but

tabl

scal

mea

anal

bas

Met

be found to these rules, they are nevertheless the ground rules generally followed by the industry.

While the industry describes itself as having more than eleven hundred members, forty-six firms which are primarily engaged in ethical pharmaceutical manufacturing and selling account for virtually all of the industry sales to wholesalers and pharmacists. The remainder is found in interplant sales to suppliers, generic manufactures by wholesalers and extremely small firms, sales to governments, and products manufactured by small firms which are distributed and promoted by the large firms.

A stratified sample of thirty-three firms was selected, with twenty-eight responding. The composition of these twenty-eight respondents by market share was as follows: The three largest firms in the industry responded and accounted for twenty and one-half percent of domestic ethical sales; seven of the next largest nine were included in the sample, all responded, accounting for twenty-seven percent of domestic industry sales; and finally, eighteen firms accounting for approximately twenty-two percent of industry sales responded. All five of the firms which did not respond belonged to this last stratum.

The questionnaire was constructed, pretested and revised for final administration. Twenty firms were interviewed using the questionnaire as a structuring device. Eight firms were not personally interviewed, but returned the completed questionnaire by mail.

Methods of analysis were the familiar two-by-two contingency tables, two-by-two-by-two contingency tables, rank correlation and scalogram analysis. The two-by-two tables utilized chi-square measures of significance while the two-by-two-by-two tables were analyzed factorially. All methods, excepting scalogram analysis, were based on A. E. Maxwell's work, Analysing Qualitative Data (London: Methuen and Co., Ltd., 1961).

The ethical pharmaceutical industry can be characterized as highly promotion-oriented, having one detailman for every fifteen physicians in the United States. The firms predominantly encourage their men via incentive compensation; the most frequently used plan is salary plus commission, and the next most frequently used plan is salary plus bonus.

The ethical pharmaceutical detailman is well-paid, in 1961, the top paid ten percent earned approximately $10,810.00 per annum, the lowest paid ten percent earned $6,270.00, and the over-all average of detailmen's income was $8,115.00. In addition, he is well provided for in terms of fringe benefits, with all firms offering pension plans, comprehensive medical and hospital insurance, and life insurance. In only two cases did the detailman have to pay for one or more of these services wholly on his own. In all other cases, the company paid for the complete cost or shared on a fifty-fifty or better basis.

In all cases, the salesman was provided an automobile at company expense. In five firms the automobile was used as an incentive, allowing the successful or long-service detailman to select an automobile of greater value than one of the low-priced three. In addition, his reasonable expenses in the course of doing business were reimbursed and not deducted from his commission income.

On the average, the detailman's product line obtained 37.0% of its sales from two products. Furthermore, he was often found competing against other companies and their detailmen who sold the same product with a different brand name.

Sales managers have become increasingly aware of the need for sound personnel policies and procedures as evidenced by the shift in number of firms using job descriptions, and the increasing sophistication of evaluation procedures. However, the firms have considerable room

for improvement in this area, as evidenced by the lack of completeness in job descriptions, roughly formulated standards of performance, and a lack of behavioral science measurement methods.

Sales managers felt that the most important criteria for designing a sales compensation program were: (1) the program should be fair to both the company and the salesman; (2) the program should provide incentive to the salesman to perform his job requirements; and (3) the program should be understandable to the salesman. When asked to answer attitude questions regarding fairness, security, and incentive values, the areas regarding fairness and incentive (rated (1) and (2) in importance) were the least clearly formulated and agreed upon by sales managers. Managers as a group could not decide on a common definition of fairness, and their attitudes toward the subject were non-linear. Similarly, they were not clear on a common meaning of incentive values, nor did they hold a linear attitude toward incentives. Only on the criterion which they had rated low in importance had they formulated a linear opinion and attitude, namely, the criterion of security.

Prudent acceptance levels found that: (1) high and low time-discretion requirements of the detailman's job are significantly associated with high and low average compensation levels; (2) high and low managerial control is not significantly associated with high and low turnover, high and low average compensation, or high and low time-discretion requirements of the detailman's job; (3) high and low time-discretion requirements of the detailman's job are not significantly associated with high and low turnover; and (4) while there was not a significant categorical association with high and low average compensation level with high and low turnover, rank correlation analysis indicated a significant negative association between turnover rankings and average compensation rankings of the firms.

man
disc
com
leve
leve
as n
by r
pres
cant
by l
asso
pres
the
(c)
disc
tion
deta
trap

Similar prudence in factorial analysis of product concentration, managerial control, compensation level, attitude score, and time-discretion required by the detailman's job indicates that: (1) managerial control, in the presence of product concentration and compensation level, is not a significant explanation of sales growth; (2) compensation level, in the presence of managerial control and product concentration, is not a significant explanation of sales growth; (3) product concentration by itself is a significant explanation of sales growth, but, when in the presence of managerial control and compensation level is not a significant explanation; (4) the lack of managerial control, when accompanied by low product concentration and a low attitude score, is significantly associated with low compensation levels; (5) attitude score, in the presence of product concentration and time-discretion requirements of the detailman's job is a significant explanation of compensation level; (6) product concentration, in the presence of attitude score and time-discretion requirements of the detailman's job, is a significant explanation of compensation level; and (7) time-discretion requirements of the detailman's job, in the presence of attitude score and product concentration, is a significant explanation of compensation level.

A STUDY OF SALES COMPENSATION IN THE ETHICAL PHARMACEUTICAL INDUSTRY: ITS ASSOCIATION WITH SALES EFFECTIVENESS, MANAGERIAL CONTROL, JOB REQUIREMENTS AND SALES MANAGERS' ATTITUDES TOWARD COMPENSATION CRITERIA

By

Gary A. Marple

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF BUSINESS ADMINISTRATION

Department of Marketing and Transportation Administration
Graduate School of Business Administration

1963

PREFACE

This dissertation is a result of what might be termed "an evolution by looking backward." During my doctoral course work, I have had the privilege of teaching courses in Salesmanship and Sales Management. Two subjects which, I must confess, did not appeal greatly to me at the time. While preparing material for these courses, I was impressed by the fact that the oldest field in marketing had the smallest body of soundly researched literature. This was truly the end of the marketing spectrum where everyone was his own expert because "everybody has to sell himself." While working with students, sales managers and others who were interested in or involved in selling, a number of potential dissertation topics presented themselves. Consequently, the selection of one topic was a most difficult task.

A number of things contributed to the selection of salesmen's compensation as a topic for a dissertation. One was that many students and colleagues questioned the importance of sales compensation as an effective instrument of marketing management. Another was that sales managers differed radically in their opinions regarding the value of different plans, even within the same industry.

In attempting to find answers to these questions, it became apparent that here was an area of needed research. Consequently, when an anonymous donor indicated an interest in sponsoring a survey of sales compensation policies and practices in the ethical pharmaceutical industry, the survey became the vehicle to explore and test associations between compensation and marketing effectiveness.

The purposes of the research were to: (a) comprehensively survey the sales compensation policies and practices of ethical

pharmaceutical manufacturers who promoted and sold through a detail sales force; and (b) conclusively analyze the association between compensation and company marketing effectiveness. However, as is often encountered in social research, exogenous variables limited the conclusiveness of this study. The most important of these was the industry's sensitivity to answering questions regarding dollar sales and profits. This can be understood in light of the fact that the United States Senate Subcommittee on Antitrust had finished its investigation less than one full year previous to this study and was at the time drafting a drug industry antitrust act. For this reason, a number of tests important to achieving the second purpose stated above could not be performed. While this leaves the study more in the realm of exploration than conclusion, the methods used, conclusions actually derived and the implications apparent in the actual strength of collected data should be of interest and importance to those attempting to evaluate the effectiveness of compensation.

Another item which also deserves mentioning here is the nature and financing of this research. Mr. John Wieland, a fellow doctoral student, wished to test an hypothesis involving the marketing concept and information flowing to and from the field sales force. A donor, who wishes to remain anonymous, gave equal research grants to John Wieland and myself for the purpose of conducting our research in the ethical pharmaceutical industry. The original plan called for separate surveys. However, many problems, including length of questionnaire, bias by one questionnaire preceding another, and the doubling of various costs of collecting the data, led Mr. Wieland and me to the decision of joint data collection. This shortened the estimated time for the respondent to complete the questionnaire by approximately one hour and reduced the number of manhours required for the responding firms to

assemble accounting data, not to mention cutting our costs of postage and secretarial time per respondent by almost one half. Consequently, the $1,500.00 grant covered all phases of this dissertation from inception to completion as well as allowing the more precise method of data collection by interview to be used in the case of twenty respondents.

In seeking out secondary sources of information I became acquainted with the very excellent and fascinating works of Elliott Jaques entitled Equitable Payment. Since studying his works, my thinking has been considerably revised and I believe that a meaningful behavioral-economic integration between the macro and micro aspects of compensation is not too distant.

Finally, I am forever indebted to all who assisted in making this dissertation project a reality. In particular, my thanks go to Dr. Duane Gibson of Michigan State University for implanting some important thoughts, the derivatives of which are evident in my writings; the many sales managers and their staffs who gave willingly of their time; John Wieland who served both as loyal opposition and fellow researcher; my wife, Sandra, who truly performed as an able research assistant; Doctors Frank Mossman and David Moore who have given their guidance and criticism as dissertation committee members; and most of all to my dissertation chairman, Dr. William J. E. Crissy.

TABLE OF CONTENTS

TABLE O

Chapter

IV.

V.

BIBLIO

TABLE OF CONTENTS - Continued

Table

LIST OF TABLES

LIST OF

Table

15.

16.

17.

18.

19.

20.

21.

22.

23.

24.

25.

LIST OF TABLES - Continued

LIST O

Table

26.

27.

28.

29.

30.

31.

32.

LIST OF TABLES - Continued

Exhibit

1. C

2. C

3. Q

4. E

5. E

6. E

7. E

6. S

9. S

10. S

11. S

12. D

13. D

LIST OF EXHIBITS

LIST OF E

Exhibit

14. Dr

15. Dr

16. Dr

17. Se

18. In

19. Fa

20. It

LIST OF EXHIBITS - Continued

Appendix

LIST OF APPENDICES

Nature and

The

monetary

it is conce

marketing

detail sale

Broa

of an exch

ceived, co

performar

is that of

Reg

study, the

an attemp

payments

attempted

[1] An

Homans'

Harcourt,

[2] C.

Assyrian

Sons, 19

CHAPTER I

INTRODUCTION

Nature and Concern of the Study

The general concern of this study is the relationship between monetary compensation and performance effectiveness. Specifically it is concerned with relationships between sales compensation and marketing effectiveness of ethical pharmaceutical firms employing detail salesmen to promote their products to physicians.

Broadly conceived, compensation is identified with the theory of an exchange basis of elementary social behavior.[1] Narrowly conceived, compensation refers to money payments to employees for the performance of certain tasks. An essential problem in either case is that of determining an equitable basis for calculating payment.

Regarding monetary compensation, which is the focus in this study, there have been many approaches taken throughout history in an attempt to determine an equitable measure for calculating money payments. Early attempts range from those of Hammurabi,[2] who attempted to codify wage payments, to the medieval writers concerned

---

[1]An exchange basis of human behavior is the thesis of George Homans' book, Social Behavior: Its Elementary Forms (New York: Harcourt, Brace & World, Inc., 1961).

[2]C. H. W. Johns, "The Code of Hammurabi," Babylonian and Assyrian Laws, Contracts and Letters (New York: Charles Scribner's Sons, 1904), pp. 44-66.

with "just w

stem from p

With t

al wage the

David Ricar

which held

the necessa

the supply

Follo

and Marie

theory. At

theory appl

productivit

Clark in 1

productivi

Acc

equal the

shown tha

can be bot

from that

being plac

---

[3] Joh
Transacti
Vol. XLI

[4] A
Wage and
Prentice-

[5] P.
Source R
Inc., 19

[6] Jo
Macmilla

with "just wages." The latter argued that the amount of payment should stem from position in the status hierarchy.[3]

With the coming of the Industrial Revolution, the so-called classical wage theories were developed. Adam Smith, Thomas Malthus, David Ricardo and John Stuart Mill contributed to the classical position which held that in the long-run, wages were just sufficient to reproduce the necessary labor, while in the short-run, wages were dependent on the supply of labor and amount of the wages fund available to buy labor.[4]

Following the classical position, Carl Menger, William Jevons, and Marie Walras developed the marginal utility approach to value theory. At the same time, Alfred Marshall also was developing marginal theory applied both to supply and demand. The position of the marginal productivity theory of wages was put forth systematically by J. B. Clark in 1899, and is essentially the basis for modern day marginal productivity theories.[5]

According to this theory, given perfect competition, wages will equal the marginal product of its labor. However, Mrs. Robinson has shown that under conditions of imperfect competition labor (any resource) can be both under-employed and underpaid while the product coming from that labor can be overpriced and lead to a disproportionate value being placed upon it as compared to the competitive case.[6]

---

[3]John W. Baldwin, "The Medieval Theories of the Just Price," Transactions of the American Philosophical Society, New Series, Vol. XLIX, Part 4, (July 1959).

[4]A concise treatment of this is to be found in David W. Belcher, Wage and Salary Administration, 2nd ed.; (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1962), pp. 30-32.

[5]P. C. Newman, A. D. Gayer, and M. H. Spencer, (eds.) Source Readings In Economic Thought (New York: W. W. Norton & Co., Inc., 1954), pp. 347-360.

[6]Joan Robinson, The Economics Of Imperfect Competition (London: Macmillan & Co., Ltd., 1959), Chaps. 25 and 26.

From the perspective of economics, money is the common denominator of measurement, so that even in the perfectly competitive case, money may not be an accurate estimate of the value of the product or the labor due to the assumption of supply and demand constraints. Alternatives to this problem have been posed by institutional theorists,[7] as well as persons not primarily concerned with wage theory.[8]

One outstanding alternative, developed by Elliott Jaques,[9] offers the possibility that the exchange basis of society and the equitable level and amount of payment are all related to an individual's time-discretion capacity. Briefly, this refers to an individual's ability to achieve goals over a certain time period. For example one individual may be able to plan and organize the required sequence of activities necessary to achieve specified goals a year hence, while another may only be able to do the same for a three month period. This will be referred to in this study as an individual's time-discretion capacity or ability.

Similarly, the job can be described in terms of time-discretion capacity required of the employee.[10] Jaques' assertion, based on sound research, is that wage and salary differentials among jobs should follow time-discretion differentials required by the jobs;[11] the longer the time-discretion required, the higher the level of compensation. Such a theory removes the requirement of monetary estimation of the value of

---

[7]See for example, George W. Taylor and Frank C. Pierson (eds.), New Concepts In Wage Determination (New York: McGraw-Hill Book Co., Inc., 1957), Chaps. 5 and 6.

[8]Cf., Chris Argyris, Understanding Organizational Behavior (Homewood, Ill.: The Dorsey Press, Inc., 1960).

[9]Elliott Jaques, Equitable Payment (New York: John Wiley & Sons, Inc., 1961). A synopsis of his theory is contained in Appendix XI.

[10]Ibid., p. 99. See also Appendix XI.

[11]Ibid., p. 166.

productivity related to the input value of the job. As such, it does not require the economic constraints of supply and demand in wage determination.

As an observation, it would appear that in terms of theory formulation a basis for integrating social exchange, economic exchange, and compensation is being developed. However, for the present, they are in an unanswered state of flux and are of critical importance to organization theory, economic theory, and practical business management. The present day manager is besieged to "scale values" and substitute less costly non-monetary compensation for more expensive monetary compensation.[12] On the other hand, there is data which would indicate that the emphasis is misplaced,[13] and that in the long run, status tends to equal financial reward and therefore the substitution is of limited value.[14]

Sales Compensation as a Field of Study

In order to hold as many variables constant as possible in the study, it was decided to select a single occupational group. The occupational group selected was one with which the writer was familiar, namely, salesmen.

Regarding salesmen's compensation, Professor Harry R. Tosdal made the following observation in 1953:

> The scientific literature upon salesmen's compensation is relatively meager. No academic studies have come to light beyond the limited treatment in one of the early bulletins of

---

[12]G. B. Strother and L. Johnson, "Scaling Non-Monetary Inducements To Employment," Personnel Journal, XXXIX (Feb. 1961), 363-365.

[13]Elliott Jaques, op. cit.

[14]D. C. Miller and Wm. H. Form, Industrial Sociology (New York: Harper & Brothers, 1951), p. 370.

the Bur
of Payi
Grocery
The onl
small v
pared b
New Yo

A searc

ditions: A.

Methods and

Austin, Tex

1957). Serie

and D. J. Lu

Bureau of Bu

Public Servi

Tosdal

salesmen fr

attempts to

respect to th

While Tosda

the formulat

more nearly

be assessed

Purposes of

In add

desirable to

[15]Har

Salesmen's

Research,

[16]Ibid.

the Bureau of Business Research, Harvard University: Methods of Paying Salesmen and Operating Expenses in the Wholesale Grocery Business in 1918, Bulletin No. 14, Cambridge, 1919. The only book devoted wholly to salesmen's compensation is the small volume entitled Tested Sales Compensation Plans, prepared by the staff of Printers' Ink, McGraw-Hill Book Company, New York, 1937.[15]

A search of the Library of Congress card files yielded only two additions: A. L. Seelye and Frank M. Bass, Sales Compensation Methods and Policies of Wholesalers: Grocery, Drug, Hardware. (Austin, Texas: Bureau of Business Research, University of Texas, 1957). Series on Studies in Marketing, No. 2; and Marvin Hoffman and D. J. Luck, Salesmen's Fringe Benefits (East Lansing, Mich.: Bureau of Business and Economic Research, College of Business and Public Service, Michigan State University, 1959). MTA Paper No. 6.

Tosdal's work, referred to above, is a broad study of outside salesmen from many industries with many different selling jobs and attempts to present: ". . . facts, analyses, and conclusions with respect to the various problems in salesmen's compensation."[16] While Tosdal's study is definitive and a general reference source for the formulation of this study, this study attempts to hold the selling job more nearly constant in order that compensation effectiveness might be assessed.

Purposes of the Study

In addition to holding the occupational group constant, it was also desirable to hold additional factors, such as market, product and

---

[15]Harry R. Tosdal, with the assistance of Waller Carson, Jr., Salesmen's Compensation (Boston: Harvard Business School, Div. of Research, 1953), Vol. I, pp. 16-17.

[16]Ibid., p. 18.

ıccupation

ompensat

te specifi

1. S

s

2. A

s

s

c

3. A

c

4.

5.

Topics I

Wi

held as

evaluati

1.

17

occupational content, constant.[17] Thus, in the context of sales compensation of detail salesmen in the ethical pharmaceutical industry, the specific purposes of the study were to:

1. Survey comprehensively the policies and practices regarding salesmen's compensation.
2. Ascertain through interview and statistical methods the significant associations between policies, practices, and successful fulfillment of various sales, profit and personnel criteria.
3. Assess the attitudes of sales managers regarding various criteria for designing compensation plans. Additionally, to analyze the attitudes which do seem to be scalable in light of significant associations previously derived.
4. Provide significant information for managerial decision-making and the effective design and use of sales compensation plans in the ethical pharmaceutical industry.
5. Indicate the nature and direction of other needed research.

Topics Investigated

With the occupational group, market and general product line held as constant as possible, certain topics bearing directly on the evaluation of compensation effectiveness were investigated:

1. In order to ascertain differences in tasks performed, complexity of tasks and latitude for discretion, the salesmen's job requirements were examined by obtaining a job description as well as asking selected questions on salesmen's procedures.

---

[17]See discussion on pages 11-13.

2. To
est
of
asp
fir
as
3. Wh
ex
we
to
th
at
4. To
we
sa
ar
sc
5. T
ex
6. F
ef
d
o
ir
a
a

Format of

Foll

over-all d

2. To further validate the topic investigated above, as well as estimate the effort expended by sales managers in the course of supervising and controlling salesmen's efforts, selected aspects of the sales manager's job were examined in each firm. Again, the procedure was to obtain job descriptions as well as by specific questioning.
3. While (1) and (2) above delineate the relevant areas for examination, an estimate of the most important aspects as well as a measurement of the length of time for the salesman to exercise discretion in his job was obtained by examining the frequency and complexity of the formal performance evaluation.
4. To see if personal factors of the policy-making executives were adequate explanations of compensation, the attitudes of sales managers toward various selected criteria for designing and operating a compensation program were assessed by scalogram analysis.
5. The actual compensation procedures and amounts paid were examined.
6. Finally, various measures of marketing and sales force effectiveness were sought. These included such items as dollar sales, dollar profits, product concentration, turnover of the sales force, etc. This was a key point in the total investigation and several items were not provided by an adequate number of sample respondents to allow a conclusive analysis of them.

Format of the Study

Following this introductory chapter, Chapter II is devoted to an over-all description of the research design and procedures.

Chapter II

represent

concerned

concern c

the resea

tests and

of the im

and an in

effective

and calcu

Chapter III is devoted to the presentation of selected survey findings representing the ethical pharmaceutical industry. Chapter IV is concerned with the statistical analysis of data relevant to the primary concern of this dissertation. Chapter V comprises an evaluation of the research as conducted, a conclusion in summary fashion of the tests and analyses contained in Chapter IV, an analytical interpretation of the implications for evaluating the effectiveness of compensation, and an indication of further research steps to be taken in understanding effective compensation program design. All relevant data, tabulations and calculations are to be found in the appropriate appendices.

The Nature
Ex Post Ag

The c

the importa

Basically,

(1) since th

to be tested

for logical

environme

ing the rel

there will

ative mea

is very de

task confr

premises

ships amo

Met

tainty are

statistical

[1]Cf.
& Co., L
(New Yor
Hypothesi

[2]Co

CHAPTER II

RESEARCH DESIGN

The Nature of Variables For an Ex Post Aggregate Study

The observational and experimental sciences have long stressed the importance of research design and the selection of variables.[1] Basically, the question of design involves three elements of importance: (1) since the purpose of scientific inquiry is explanation, the hypotheses to be tested in a given research project must be in the form of premises for logical conclusions; (2) the researcher must attempt to control the environment in such a way that causal inferences may be drawn regarding the relationships of the variables in the hypotheses; and (3) since there will be alternative designs for logical conclusiveness and alternative means of controlling the environment, the decision of selection is very dependent upon the judgment of the researcher. The decisional task confronting the researcher involves the logical relevance of premises and conclusions, and the causal relevance of the relationships among premise variables.[2]

Methods for determining causal inference with degrees of certainty are the familiar statistical tests, often referred to as methods of statistical inference. Relevance for statistical inference requires that

---

[1]Cf., A. E. Maxwell, Analysing Qualitative Data (London: Methuen & Co., Ltd., 1961), pp. 28-30; Irving M. Copi, Introduction To Logic (New York: The Macmillan Co., 1953), Chap. 13, "Science and Hypothesis."

[2]Copi, op. cit., pp. 251, 372, 390-4.

irrelevant premises or confounding variables be: (1) excluded from observation by design, or (2) effectively accounted for, by design, with known or estimatable degrees of certainty as to their effects. Thus, regarding sales compensation, the greater the number of similarities between the observational units, the greater precision in applying Mill's methods of estimating causal connections, and, in applying statistical tests.

A caution is that this can be carried to the point where everything is identical in nature, and statistics cannot differentiate significantly by degree. However, due to the qualitative nature of the study undertaken, the goal was to find a maximum of similarities for a sample population where $n > 20$.[3] From this it was expected that natural differences among the variables for testing should provide sufficient dispersion for significance.

In an ex post study, the independent variables and dependent variables cannot be ascertained with any degree of certainty with Mill's methods. Only the inference that there is some causal connection can be made. Assigning independence and dependence can be made only by argument, and the probabilistic value of the premises of that argument can only be tested in another research design.[4]

A few remaining comments on the aggregation of data: (1) when average values, such as mean income, are collected, very little is manifest regarding the distribution from which they came; (2) testing for significant differences between means, for which the distributions are unknown, may obscure as many important associations as it reveals.

---

[3]This is recommended as sound procedure as long as Fisher's exact tests are used or Yates corrections are applied. See for example, Maxwell, op. cit., p. 23.

[4]For an extremely well defined presentation of this position, see C. W. Churchman, Theory Of Experimental Inference (New York: The Macmillan Co., 1948), Chaps. X, XI, and XII.

However, as
means, poss
analyses of c
implications

The Sample

Beginn
select a sam
In such firm
procedures,
would tend t
maximum n
products, a
through inc
It was deci
would prov
the inter-ir
variables c
where thes

A nu
house-to-h
cleaning su
as electric
steel.

In th
vary to a c
sions to pu
Fuller Bru
and superv
relationsh

However, as the data were only available in the practical form of means, possible obscurities will be clearly indicated throughout the analyses of data so as not to mislead or provide a basis for unsound implications.

The Sample

Beginning with a focus on sales compensation, the desire was to select a sample from firms relying heavily on personal selling. In such firms, the relative importance of compensation policies and procedures, as well as sales management policies and procedures, would tend to be at a maximum. Also, it seemed desirable to have a maximum number of similarities between firms regarding markets, products, and distribution methods. This would improve precision through increased control of extraneous variables. From the above, it was decided that an industry which relied heavily on personal selling would provide the best available sample population. This is because the inter-industry variance due to market, product, and distribution variables can be expected to be greater than the intra-industry variance where these variables are more similar.

A number of industries were prospects for this research effort: house-to-house selling industries such as encyclopedias and sundry cleaning supplies; highly technical industrial product industries such as electrical switchgears and boilers; and other such as printing or steel.

In the house-to-house selling industries, markets and products vary to a considerable degree, and there are many alternative occasions to purchase. For example, many types of items sold by the Fuller Brush Company are also sold by variety stores, drug stores and supermarkets. Thus, company sales effectiveness may have little relationship to selling effectiveness of the sales force. On the other

and, highly

ales job fur

ales engine

chnical qu

job functio

payments to

While

ethical phar

pharmaceuti

d market, p

and relies qu

An eth

(1) it manufa

(2) it promot

physicians a

industry, th

The consum

be purchase

of the indust

being direct

sales job-fu

the purposes

Regar

as designate

States Burea

---

[5]Elliot

would also a

variance cou

hand, highly technical industries have a considerable variation in the sales job function, with some companies using sales teams, others sales engineers, and still others using only engineers to answer technical questions at the initiative of the prospective customer. If job functions vary considerably, one would not expect compensation payments to be accurately related to performance effectiveness.[5]

While a number of industries would meet the study criteria, the ethical pharmaceutical industry was the one selected. The ethical pharmaceutical industry fulfills the criteria of inter-firm similarities of market, product, distribution and sales job-function to a high degree, and relies quite heavily on personal selling.

An ethical pharmaceutical company is identified by two criteria: (1) it manufactures pharmaceutical preparations for human use, and (2) it promotes the preparations only by providing information to physicians and pharmacists. Thus, in the ethical pharmaceutical industry, the primary purchase decision resides with the physician. The consumer receives a prescription which, in most cases, can only be purchased from a registered pharmacist, and, the ethical concept of the industry has precluded advertising, promotion, or information being directed to the consumer. Thus, the market, distribution, and sales job-functions are very similar within the industry as defined for the purposes of this study.

Regarding the complete pharmaceutical preparations industry as designated by Standard Industrial Classification 2834, the United States Bureau of Census states:

---

[5]Elliott Jaques, op. cit., pp. 19-20. Note that the criticism would also apply to an inter-industry sample where the job-function variance could be expected to be greater than intra-industry variance.

Si
ments i
primary
presenc
approxi
fied in t
the com

It is to

ompanies.

ments are ow

ments existin

As establishm

be an individu

population ex

Also, S.I.C.

to consumers

many are in t

sold to ethica

them and dist

fied by Dow C

establishmen

Charles Pfiz

Accord

Largest U. S

having 500 o

---

[6]U. S.
1958, Vol. I
(Washington,

[7]Ibid.,

[8]1961 F
Industrial Co
Fortune, 196

> Since specialized equipment or relatively large investments in capital are not prerequisites for many products primary to the industry, the industry is characterized by the presence of a relatively large number of small firms. In 1954, approximately 62 percent of the 1,163 establishments classified in this industry had fewer than 10 employees, and in 1958 the comparable percentage is 59 percent.[6]

It is to be noted that this refers to "establishments" and not companies. In a number of cases numerous manufacturing establishments are owned by one corporation. However, of the 1,114 establishments existing in 1958, only 58 have 250 or more total employees.[7] As establishments with fewer than 250 employees would probably not be an individual firm with a national detailing sales force, the sample population excluded all establishments with fewer than 250 employees. Also, S.I.C. 2834 includes proprietary firms who advertise directly to consumers. For example, "One-a-day" brand vitamins. Finally, many are in the field of manufacturing raw materials which are in turn sold to ethical pharmaceutical manufacturers who further process them and distribute them in final dosage form. Such firms are exemplified by Dow Chemical Company and E. I. DuPont, as well as several establishments which are owned by American Cyanamid Company and Charles Pfizer & Company.

According to the 1961 Plant and Product Directory; The 500 Largest U. S. Industrial Companies,[8] there are 12 establishments having 500 or more total employees which are either engaged primarily

---

[6]U. S. Bureau of the Census, U. S. Census of Manufactures: 1958, Vol. II, Industry Statistics, Part 1, Major Groups 20 to 28. (Washington, D. C., U. S. Government Printing Office, 1961), p. 28c-2.

[7]Ibid., p. 28c-7.

[8]1961 Plant and Product Directory; The 500 Largest U. S. Industrial Companies (New York: Market Research Department, Fortune, 1961).

supplying pha

proprietary pha

consumer. If t

50 or more tot

possible sample

percent of th

the remaining 3

percent.[10]

As the w

various corpor

were suppliers

was selected b

sample was to

the compositio

stratum of 3 fi

were all inclu

accounting for

the market, w

34 firms, acc

firms, accoun

in the sample.

By appr

estimate aggr

[9]From p

[10]This is

the Census, c

and private so

import sales

included, the

in supplying pharmaceutical chemicals or manufacturing and selling proprietary pharmaceuticals which are advertised directly to the consumer. If these are subtracted from the 58 establishments having 250 or more total employees, this leaves 46 establishments as the total possible sample population. Of these 46, 12 account for approximately 59 percent of the total domestic ethical pharmaceutical market[9] with the remaining 34 accounting for virtually all of the remaining 41 percent.[10]

As the writer was not familiar as to which divisions of the various corporations were ethical pharmaceutical divisions and which were suppliers or proprietary divisions, the actual sample of 33 firms was selected by an industry authority. The population from which the sample was to be drawn was arbitrarily divided into three strata, and the composition of the sample selected was as follows: The first stratum of 3 firms accounting for 20.5% of the domestic ethical market were all included in the sample; from the second stratum of 9 firms, accounting for 38.5% of the market, 7 firms, accounting for 27% of the market, were included in the sample; from the third stratum of 34 firms, accounting for approximately 41% of the total market, 23 firms, accounting for an unknown percent of the market, were included in the sample.

By appropriately weighting sample strata, it is possible to estimate aggregate figures for the industry, as defined, with a

---

[9]From private source which does not wish to be disclosed.

[10]This is inferential only and uses data from U. S. Bureau of the Census, op. cit., and 1961 Plant and Product Directory; op. cit., and private sources not to be disclosed. If inter-plant transfers, import sales and proprietaries advertised directly to consumers are included, the percentages are quite different.

nsiderable de

nd response bi

ctions will be

s defined in th

Survey Method

Six topic

questionnaire:

sales manager

performance;

designing and

sation procedu

marketing and

profits, produ

As origi

administered

would then be

would then be

sample. Thi

naire in final

During

problems bec

[11]With

sample figur

figures. Th

sample figur

market shar

stratum is n

M. H. Hans

Methods and

John Wiley a

Sampling" a

considerable degree of reliability.[11] Certain unknown procedural and response biases are probable, and aggregate estimates and conclusions will be valid only for the ethical pharmaceutical industry as defined in the preceding pages.

Survey Method

Six topics relating to this study were to be investigated via the questionnaire: (1) the salesman's job; (2) selected aspects of the sales manager's job; (3) procedures for evaluating detail salesmen's performance; (4) sales managers' attitudes toward various criteria for designing and operating a compensation program; (5) actual compensation procedures and amounts; and (6) various measures of company marketing and sales force effectiveness such as dollar sales, dollar profits, product concentration and sales force turnover.

As originally planned, a questionnaire was to be designed and administered by interview to a pretest sample. The pretest results would then be used to revise and improve the questionnaire which would then be administered as a mail survey to the remainder of the sample. This was accomplished and a specimen copy of the questionnaire in final form is included in Appendix II.

During the pretest, numerous semantic difficulties and response problems became evident. A decision was then made to personally

---

[11]With known values of sample strata which can be used to weight sample figures, ratio estimations should yield accurate industry figures. The problem of placing confidence intervals on estimates and sample figures is a more delicate one. However, the skewed nature of market share figures would indicate that the possible bias in the third stratum is not too significant a distortion to confidence intervals. See M. H. Hansen, W. N. Hurwitz, and W. G. Madow, Sample Survey Methods and Theory: Vol. I: Methods and Applications. (New York: John Wiley and Sons, Inc., 1953), Chap. 5, "Stratified Simple Random Sampling" and Chap. 2, Sec. 2, "Purposive Sampling."

dminister the q

within certain li

nterviewed usir

As a result the

nterview in dep

ered to the ren

previously men

all interviewed,

mail responden

firms responde

In additio

related to the s

were collected

jobs, procedur

Tests[12]

For the

desired, howe

published sour

data on ethica

ance of speci

complete rega

and sales, the

to give inform

figures. In v

[12]Basic

following: Ma

and B. Ostle,

College Press

administer the questionnaire to as many of the sample as possible within certain limits of cost. Thus, twenty firms were personally interviewed using the questionnaire as the basic structuring device. As a result the survey method could best be described as a structured interview in depth with twenty firms, with a mail questionnaire administered to the remaining eight respondents. Of the three strata previously mentioned, sample respondents in strata one and two were all interviewed, while in stratum three there were ten interview, eight mail respondents and five non-respondents. A total of twenty-eight firms responded.

In addition, various forms, documents, and statements which related to the selling job, evaluation procedure, and sales management were collected from each firm. This allowed cross-comparisons of jobs, procedures and changes in each.

Tests[12]

For the purpose of statistical tests, 100 percent cooperation was desired, however, it was not forthcoming. And, indeed, no other published source available to the author has managed to obtain complete data on ethical pharmaceutical industry profits, sales, or the importance of specific products to specific firms. Cooperation was relatively complete regarding questions of procedure. On questions of profits and sales, the companies were very sensitive with seventeen refusing to give information on profits and eleven refusing to provide sales figures. In view of the recent Senate Subcommittee investigations with

---

[12]Basic references for all test designs and analyses are the following: Maxwell, op. cit.; Hansen, Hurwitz and Madow, op. cit.; and B. Ostle, Statistics In Research (Ames, Iowa: The Iowa State College Press, 1954).

the attendant n

standable.[13]

With the

the qualitative

analyses used

gers' attitude

operating a co

managerial co

and income; (

control, time

and attitude s

of the finding

studies.

[13]The

complete da

Congression

Drugs (Wash

Also, U. S.

Industry Ant

Government

the above pu

the attendant newspaper publicity, such hesitance is probably understandable.[13]

With the survey procedure used, the industry as defined, and the qualitative as well as quantitative answers sought, the tests and analyses used were: (1) scalogram and item analysis of sales managers' attitudes toward criteria recommended for use in designing and operating a compensation plan; (2) analysis of associations between managerial control, time-discretion required by the job, turnover, and income; (3) factorial analysis of the associations among managerial control, time-discretion required by the job, product concentration, and attitude scores of sales managers; and (4) examining the consistency of the findings with conclusions and inferences drawn in other selected studies.

---

[13]The U. S. Senate Subcommittee on the Judiciary did not publish complete data on sales and profits for the industry. See: U. S. Congressional Senate Committee on the Judiciary, Administered Prices: Drugs (Washington, D.C.: U. S. Government Printing Office, 1961); also, U. S. Congressional Senate Committee on the Judiciary, Drug Industry Antitrust Act: Hearings, 7 parts (Washington, D.C.: U. S. Government Printing Office, 1961 and 1962). Relevant statistics from the above publications are included in Appendix VII.

Compensation

Early in
evident that va
commission a
plan was nece
bonus, or som
number of cor

Table 1. Met

Compe
Salary only
Salary plus b
Salary plus c
Salary plus b
Commission
Total

[a] One c
a company f
only. Thes

[b] Thre
and experie
the question

CHAPTER III

PRESENTATION OF SURVEY FINDINGS

Compensation Plans Used

Early in the course of developing the questionnaire, it became evident that various sales managers used the term bonus in place of commission and vice versa. Thus, an analysis of each compensation plan was necessary to properly categorize it as salary, commission, bonus, or some combination of the three. The various plans and number of companies using each is shown in Table 1.

Table 1. Methods of Compensating Detailmen

Compensation Methods	Number of Respondents Using The Method to Compensate:	
	Trainees	Experienced Men
Salary only	12	2
Salary plus bonus	1	6
Salary plus commission	9	15
Salary plus bonus plus commission	1	5
Commission only	0	1[a]
Total	23[b]	29

[a]One case was discovered where certain detailmen had been with a company for many years and held contracts for commission payment only. These men did not comprise a large part of the sales force.

[b]Three firms indicated there was no distinction between trainees and experienced men, and two firms failed to reply to this portion of the question.

Regardi

ze company r

while the rema

which was dis

three compani

the remaining

dependent on

procedures a

Salesmen's J

Sales m

job descripti

obtained for

of job descri

Table 2. Us

Firms havin	
Firms not h	
Total	
Firms addi	
Firms delet	
Net new firm	

Of the

analysis re

Regarding those firms using a true bonus system, three used the company rate of return as the basis for determining the bonus, while the remaining three used a district or division commission pool which was distributed as a bonus. To allocate the bonus shares, three companies used a formula based on salary classification, while the remaining three used systems which could be classified as partly dependent on managerial judgment. Typical compensation plans and procedures are to be found in Appendix III.

Salesmen's Job Descriptions

Sales managers were asked whether or not their salesmen had job descriptions. If they did, a copy of the job description was obtained for the purpose of further analysis. A tabulation of the use of job descriptions follows in Table 2.

Table 2. Usage of Salesmen's Job Descriptions

	1956	Present
Firms having job description	13	20
Firms not having job description	15	8
Total	28	28
Firms adding job description since 1956		8
Firms deleting job description since 1956		1
Net new firms using job description		7

Of the firms presently claiming to have job descriptions in effect, analysis revealed that only one measured up to the full meaning of a

job descriptio

firms had adeq

some semblan

statements of

of performanc

company evalu

to the total job

In fact, only n

the total job p

nine firms he

Specimen cop

job descriptio

Fringe Benef

Fringe

Table 3.

Table 3. Fr

Pension or	
Hospitalizat	
Insurance fo fees	
Life Insura	
Auto Insura	

[1]Harc
ed.; New Y
315.

job description as specified in Maynard and Davis.[1] Four of these firms had adequate statements of duties and responsibilities plus some semblance of standards of performance. The remainder used statements of primary duties or responsibilities, and left the standards of performance to individual managerial discretion. Regarding company evaluation procedures, the majority of plans were not related to the total job description, but emphasized only one or two aspects. In fact, only nine of the twenty-eight firms placed major emphasis on the total job performance in evaluating the detailmen; only two of these nine firms held it to be the most important evaluation criterion. Specimen copies of the least complete, normal, and most complete job descriptions used in 1962 are contained in Appendix IV.

Fringe Benefits Used

Fringe benefits are prevalent in this industry as shown in Table 3.

Table 3. Fringe Benefits

	No. of Firms Offering	Paid by		
		Company	Salesmen	Both
Pension or retirement	28	15	---	13
Hospitalization Insurance	28	9	2	17
Insurance for physician's fees	28	6	1	21
Life Insurance	28	7	---	21
Auto Insurance	28	26	---	2

[1]Harold H. Maynard and James H. Davis, Sales Management (3rd ed.; New York: The Ronald Press Co., 1957), pp. 84, 85, 292, 311-315.

Furthe

more attract

plans, and th

sample resp

ity of the fir

the costs of

Automobile

Autom

Table 4. A

Purchased

Purchased

Leased by

Optional le

Total

[a]Ref

ditional fir

the lease-

Five

These plan

standards

as Buick a

[2]"St

Sales Man

Furthermore, many firms sought to make their fringe package more attractive. For example, four firms offered stock option plans, and the Wm. H. Rorer Company, which was not included among sample respondents, has received publicity on its effects.[2] A majority of the firms offered an education plan whereby the company shares the costs of attending night college programs.

Automobile Acquisition Policies

Automobile acquisition plans are indicated in Table 4.

Table 4. Automobile Acquisition by Source

	No. of Firms Using
Purchased by company[a]	2
Purchased by salesman only	0
Leased by company	14
Optional lease car or salesman purchase	12
Total	28

[a]Refers to companies which use company cars only. Two additional firms own some company cars which are used to supplement the lease-car and salesman-purchase car plans.

Five firms used the automobile as an incentive for detailmen. These plans allowed the men to drive, according to years of service or standards of performance, automobiles in the middle price class such as Buick and Oldsmobile. The remaining twenty-one firms which

[2]"Stocks Spur Salesmen," [W. H. Rorer, Inc., Stock Bonus Plan] Sales Management, Vol. LXXXVIII (March 2, 1962), p. 50.

allowed m

same choi

Plymouth.

own autom

extended i

Expense A

All

lodging.

three spe

cretion.

amounts.

even thos

have info

For exam

"I know t

over expe

An

the quest

expense c

the detail

of expens

draft.

Number o

The

in 1961) c

manufactu

of detailm

allowed men a choice of automobiles, indicated that each man had the same choice from low-price automobiles such as Ford, Chevrolet or Plymouth. Only two firms which allowed detailmen to purchase their own automobile gave any assistance in this purchase. Both firms extended interest-free auto loans.

Expense Accounts

All firms, as expected, reimbursed detailmen for meals and lodging. Of the twenty-eight, ten specified fixed limits per day while three specified a budgeted amount over which the detailman had discretion. Two firms both specified daily limits and gave budgeted amounts. In questioning the sales managers it became apparent that even those without specified limits or budgeted amounts did in fact have informal limits prescribed by field supervisory procedures. For example, several sales managers expressed the following: "I know the territories, hotels and eating establishments, and a glance over expense reports will show whether the man is reasonable or not."

An interesting trend, which was not specifically sought out during the questioning, is the shift by a number of firms to the self-signed expense check (four firms mentioned this voluntarily). In this process the detailman draws an expense check to himself, pays for the items of expense, submits a report, and reconciles the difference on the next draft.

Number of Detailmen

The number of detailmen in the sample (8,441 in 1956, 11,316 in 1961) can be used to estimate the total number of pharmaceutical manufacturer's detailmen. This is performed by summing the number of detailmen in each of the three sample strata and multiplying by the

inverse of the sampling fraction, then summing the estimates for the three strata. For 1956, the estimated total number of detailmen is 11,727, while in 1961, the comparable figure is 16,350. This is a rate of increase which exceeds the rate of increase for industry sales volume. Similarly, the detailman to physician ratio has declined from one detailman for 18.8 physicians in 1956, to one detailman for every 14.6 physicians in 1961.

Regarding turnover of detailmen, a mean of company turnover rates is not a meaningful figure due to the fact that the mean is influenced by the extremes. Thus, a very small sales force with an extremely high turnover would substantially raise the mean turnover rate. An estimate with less bias is that of taking the actual number of men leaving a sales job and the actual number of detailmen, multiplying each by the inverse of the weighted sample fraction and expressing the results as a turnover rate for the industry. Thus, the turnover rate increased from 11.3% in 1956, to 13.1% in 1961. Among the ten major firms of the sample, the increase was from 8.8% to 11.4%. While these figures are less than the industry figures for both years, the amount of increase is almost one and one-half times the industry increase. Such a level of turnover for the industry (13.1%) represents severe selection and training cost losses, which, if capitalized, would require that the sales force of the average firm earn a 13.1% rate of return on total selection and training costs to break even with the costs due to turnover.

Salesmen's Evaluation Procedures

While in any case there must be some formal or informal evaluation of a man, only two major areas of evaluation were explored. The first regarded the manager's criteria for evaluating a man for pay

purposes. The second regarded formal evaluations, using written forms and carried out between the detailman and his immediate supervisor. Results are summarized in Table 5.

Table 5. Criteria Used in Compensation Evaluation

Criterion	No. of Firms Using
Total sales increase	24
Total sales quota	19
Sales increase on particular products	18
Sales quota on particular products	13
Performance appraisal	9
Call coverage	6

When asked to rank the importance of these criteria, both as used in 1956 and at present, all criteria showed an increase in importance except for the total sales increase criterion. This criterion declined markedly in importance from 1956. Two directions of trend were evident: (1) an increasing use of multiple criteria; and (2) an increasing importance on the refinement of criteria continuing to be used.

When queried about formal evaluation procedures, twenty respondents stated that such procedures were used. Replies are portrayed in Table 6.

In addition to the criteria set forth in Table 6, there were eleven additional criteria which received only one or two mentions each. This is indicative of one of the most important problems in the ethical pharmaceutical industry, namely, how to effectively evaluate the

Table 6. Criteria Used in Formal Evaluations

Criterion	No. of Firms Using at Present
Sales results	15
Attitude	6
Personal progress	5
Performance	4
Product knowledge	4
Territory coverage	3
Sales ability	3

performance of detailmen. Management is keenly aware of evaluation shortcomings as evidenced by the fact that the most frequently used criterion (sales results) was also mentioned as being the most subject to serious error because sales figures are difficult to ascribe to specific territories.

Monetary Compensation Payments

To obtain more accurate compensation figures, companies were asked to provide estimated figures for the average pay of the highest paid ten percent of their detailmen; the average pay of the lowest paid ten percent of their detailmen; and the overall average of all detailmen employed. Means of these company averages were computed. These represent the average payment of the average firm in the industry. Next, company estimates were weighted by their number of detailmen and mean figures computed. These represent the average income for detailmen in the industry. Estimates obtained are shown in Table 7.

Table 7. Annual Compensation Payments for the Pharmaceutical Industry, 1956 and 1961

Compensation Category	1956		1961	
	Average Payment of Firm	Average Detailman's Income	Average Payment of Firm	Average Detailman's Income
Average monetary payment to highest paid ten percent of pharmaceutical detailmen	$8,550.00	$9,035.00	$10,265.00	$10,810.00
Average monetary payment to lowest paid ten percent of pharmaceutical detailmen	5,017.00	5,249.00	6,044.00	6,270.00
Average monetary payment to all pharmaceutical detailmen	6,453.00	6,850.00	7,762.00	8,115.00

Product Concentration

Firms were queried as to the percent of total sales generated by their two largest selling products. This was distinguished from their two largest selling dosage forms of product. Thus, one product could have many dosage forms and all dosage form sales were still counted as sales for the basic product. In 1956, the industry mean of firms' sales derived from two products was 41.0% per firm with the median figure being 35.0%. By 1961, the mean and median figures were 37.0% and 38.0% respectively.

Further inquiry on the subject of product concentration was undertaken from secondary sources and interviews with persons not wishing to be quoted or identified. On the face of the 37.0% average concentration figure, this would not seem an overly significant figure. However, when the question of control of product enters a significantly different picture emerges. Many firms purchase a product accounting for a significant proportion of their business from another firm which also does a significant proportion of its business in the same generic product with a different brand name. This is further complicated by the fact that several United States firms will import under license, or manufacture under license, the same generic product with differing brand names. These facts indicate that detailing and the influencing of physicians to prescribe by brand name is of significant importance to firms. A correction factor to arrive at an unbiased or absolute measure of detailing effectiveness is not possible, although some interesting analyses of concentration data will be found in Chapter IV as well as in Appendix VIII.

Sales and Profits

Sales figures and profit figures were the most difficult to obtain, caused the greatest alarm on the part of the respondents, and are the

most subject to considerable bias in collection. The major problem is one of distinguishing domestic sales and profits from export sales and profits. To this problem no satisfactory solution, other than going to secondary sources, was available. The most reliable industry sales figures are shown in Table 8; industry profits in Table 9. Additional secondary sources of sales and profits are to be found in Appendix VII.

Table 8. Domestic Pharmaceutical Sales Figures 1954, 1958 and 1960[a]

	1954	1958	1960[b]
Prescription sales[c]	$ 536,954,000.00	$ 851,658,000.00	$ 930,806,400.00
Hospital and Institutional sales	225,540,000.00	295,520,000.00	323,588,800.00
Physician purchases	196,895,000.00	263,344,000.00	288,216,000.00
Total domestic Ethical sales	959,389,800.00	1,410,522,000.00	1,542,611,500.00
Proprietaries (OTC)	369,226,000.00	576,582,000.00	616,940,000.00
Total pharmaceuticals for human use - Domestic consumption[d]	$1,328,615,800.00	$1,987,104,000.00	$2,159,551,500.00

[a]Source: Medical Marketing Guide (Minneapolis, Minnesota: Modern Medicine Publications, Inc., 1960), p. 6.

[b]Estimated figures.

[c]All figures are manufacturer's sales dollars.

[d]Figures are adjusted by Modern Medicine Publications, Inc., for interplant transfers and export-import balance excluding preparations for veterinary use and taken from U. S. Census of Manufacturers for 1954 and 1958.

Table 9. Profits After Taxes, 1949-1961[a]

Year	Percent Profit Per Dollar of Sales	
	Anderson Report[b]	FTC-SEC[c]
1949	13.8%	
1950	13.8	
1951	10.1	
1952	9.3	
1953	9.5	
1954	10.3	
1955	12.5	
1956	13.8	
1957	14.4	10.4%
1958	13.5	10.2
1959		10.3
1960		9.9
1961		9.8
Average	12.5%	10.1%

[a]Source: Prescription Drug Industry Fact Book (Washington, D. C.: PharmaceuticalManufacturers Association, 1962), pp. 1-3.

[b]The Arthur Anderson & Co. Report was prepared for PMA, covering 50 reporting PMA member firms (1959).

[c]The FTC-SEC publishes quarterly a financial summary of the operations of about 80 companies representative of the ethical and proprietary drug manufacturing business. Data was not published prior to 1957.

Scalogram
of Sales M

Thre

(1) it must

company a

the man.

sales man

managers'

of crystall

questions

were analy

correlatio

the analys

Attit

lized and f

than recon

ducibility

acceptable

The first c

is the mos

category,

amount of

good salesr

opportunity

CHAPTER IV

ANALYSIS OF SURVEY DATA

Scalogram Analysis of the Attitudes of Sales Managers

Three often-invoked criteria of a sales compensation plan are: (1) it must provide incentive to the man; (2) it must be fair to the company and the salesman; and (3) it must provide income security to the man. These are conscientiously referred to in virtually every sales management class, and yet, very little is known regarding sales managers' attitudes toward them. In order to ascertain the existence of crystallized attitudes regarding these three areas, twenty-five questions were constructed to administer to the sample. The responses were analyzed by Guttman scaling techniques, item analysis, and rank correlation. Appendix IX presents the data and calculations used in the analyses.

Attitudes Toward Security.--The only area which was crystallized and fairly consistent was that of security. The sample is less than recommended by Guttman. However, the coefficient of reproducibility is .902 and the coefficient of scalability is .63. Both are acceptable. The scale breaks into three major attitude categories. The first category, which includes the six largest firms in the industry, is the most conservative. A total of eleven firms are included in this category, and subscribe to the attitude that: (1) there is a minimum amount of security needed in a compensation plan to attract and hold good salesmen; (2) the experienced and competent salesman thinks of opportunity rather than security of income; and (3) the important factor

is not security of income, but rather the salesman's self-confidence in his sales ability.

The second category subscribed to the foregoing statements plus the further assertions that: (4) salesmen as a group are generally less concerned with security of income than are other employee groups; (5) the experienced and competent salesman is not concerned regarding week-to-week or month-to-month fluctuations in earnings, but concentrates on total annual earnings; and (6) too much security of income will cause poor salesmanship. Twelve respondents are included in this category.

The third category is most liberal regarding security. Beside affirming the foregoing statements they further agree that: (7) their company sales compensation plan is too concerned with security; and (8) salesmen in the ethical pharmaceutical field today have too much income security. The latter would seem to be those that subscribe to the theory that the best salesman is a hungry one. Interestingly enough, this last group of five respondents includes three of the fastest growing, large firms in the industry.

Item analysis yielded the following two items as being significantly related to over-all score on the security inventory; (1) if the respondent agrees that the experienced and competent salesman is not concerned with week-to-week and month-to-month fluctuations in earnings, but concentrates on total annual earnings, his score is high;[1] (2) similarly if the respondent agrees that salesmen as a group are less concerned with security of income than other employee groups, his score is also high.[2]

---

[1]The chi-square value of the association of this item with a score of five or more out of a possible eight is 5.08. This is significant at the .05 level. See Appendix IX for calculations.

[2]The chi-square value of the association of this item with a score of five or more out of a possible eight is 10.82. This is significant at the .01 level. See Appendix IX for calculations.

Attitudes Toward Incentives.--Regarding the question of an attitude toward incentives, the scale was non-linear which could validly imply that either: (a) the attitudes regarding incentives are more complex than the questions in the inventory; or (b) sales managers are sharply divided on what incentives are "right" and proper to use in the ethical pharmaceutical industry. Similarly, the coefficient of reproducibility was high, .886, while the coefficient of scalability, .429, was below acceptable levels. The latter is due to the poor scale configuration and lends little value in implying whether alternative (a) or (b), above, is the correct one. The relatively high coefficient of reproducibility lends strength to alternative (b), although, in fact, it is quite probable that both alternatives (a) and (b) are involved.

Regarding the scale categories of sales managers' attitudes toward incentives, only two are evident. The first included sixteen of the respondents and was characterized by the agreement that: (1) a good sales compensation plan always provides an incentive to the salesman to earn more money; (2) an automobile is an extremely important incentive to salesmen; (3) a sales compensation plan should not have a maximum earnings limitation; the salesman should be able to earn as much as he is able, even if it is more than the manager's income; and (4) money is probably the strongest incentive affecting salesmen's performance.

The second category, although subject to more errors and non-linearities than the former, includes the remaining twelve firms and is characterized by agreement that: (5) one of the major problems in using a commission plan is that it tends to cause salesmen to "oversell" the customers; (6) sales contests tend to undermine the professional attitude toward selling; (7) there is probably too much emphasis on incentives today; either a man is an interested and effective salesman or he isn't, and incentives won't change his behavior very much.

It

associat

At

sales ma

crystalli

a coeffici

five majo

with high

The

agree wit

agreed.

pattern co

this group

able compo

siders as f

The

agreed with

measurable

and not yea

in college,

results; and

regardless

A thir

to agreeing

not be allow

superior, be

[3]Using

ation of item

the .0092 lev

of item (6) wi

calculations.

Items (5) and (6) above were highly significant, being closely associated with high scores on the incentive inventory.[3]

Attitudes Toward Fairness.--The third area tested was that of sales manager's attitudes toward fairness. This area was the least crystallized of all, yielding a coefficient of reproducibility of .80 and a coefficient of scalability of .44. The respondents separated into five major scale categories and two items were significantly associated with high scores on the inventory.

The first category consisted of six respondents who refused to agree with any question on which a majority of the remaining firms agreed. They all agreed with at least one item even though not in a pattern consistent with the other firms. The grestest agreement by this group was that what a manager considers as being a fair and equitable compensation plan is often different from what a salesman considers as fair and equitable.

The second category included ten respondents who generally agreed with the following assertions: (1) in the final analysis, it is measurable sales results that should determine a man's income, and not years of service, amount of responsibility, degrees received in college, or any other basis which is not directly related to sales results; and (2) men of equal productivity should receive equal pay regardless of time with the company.

A third category consisted of three respondents who, in addition to agreeing with the above, further agreed that: (3) a salesman should not be allowed to earn an income which is equal to or greater than his superior, because the salesman does not have managerial

---

[3]Using Fisher's exact tests, the level of significance of the association of item (5) with a score of five or more out of a possible ten is at the .0092 level. Similarly, the level of significance of the association of item (6) with a score of five or more is .057. See Appendix IX for calculations.

responsibilities to perform; and (4) a guaranteed minimum income is fair to the salesman, and a guaranteed maximum [income] is fair to the company.[4]

A fourth category of three respondents, while agreeing with (1) through (4) above, also agreed that: (5) what a manager considers as being a fair and equitable compensation plan is often different from what a salesman considers as fair and equitable.

The fifth category of six respondents further agreed that: (6) a sales compensation plan should provide additional income for additional investments of the salesmen's leisure time in such activities as night school, extra training sessions, special duties, etc.

Item analysis showed that item (4) was closely associated with high scores on the fairness inventory.[5]

Attitudes Toward Fairness, Security and Incentives.--If the attitudes toward fairness, security, and incentives are opposed, a negative rank correlation could be expected. Similarly, if they were additive, a positive correlation could be expected. Correlation between security and incentive rank was -.308, but was not significant at the .10 level with a "t" value of 1.655. Similarly, the correlation between incentive and fairness ranks was -.145 and not significant. Correlation between fairness and security rank was +.208, and, again, of no significance. Such relationships were to be expected in view of the relatively low coefficients of scalability for the fairness and incentive scales.

---

[4]This involves the problem of a "run-away" product on which a commission is paid.

[5]The chi-square value of the association of this item with a score of three or more out of a possible seven is 5.19 and significant at the .05 level. See Appendix IX for calculations.

Whe

associated

the over-a

expected fr

incentives.

more out o

allowed to

superior,

bilities to

more out o

income is

is fair to t

and the imp

mediates b

security an

Appa

formulated

sharply div

if the two d

managemen

of attitudes

which to bas

---

[6]The c

scores by re

[7]The c

scores by re

See Appendix

When item analysis was employed, two items were significantly associated with high scores on the over-all inventory, even though the over-all inventory was non-linear and insignificant as was to be expected from the inadequate scale configurations for fairness and incentives. The first was that respondents with a score of eleven or more out of a possible eighteen agreed that a salesman should not be allowed to earn an income which is equal to or greater than his superior, because the salesman does not have managerial responsibilities to perform.[6] The second was that with a score of eleven or more out of a possible eighteen agreed that a guaranteed minimum income is fair to the salesman, and a guaranteed maximum [income] is fair to the company.[7] Both relate to a sense of equity or fairness and the implication is that the sales manager's sense of fairness mediates between the somewhat opposed forces of the concern for security and the incentive to perform.

Apparently, a basic attitude and opinion on security is well formulated among sales managers. Furthermore, they are fairly sharply divided into two categories on the question of incentives. If the two differing categories stem from differing philosophies of management, this would explain the errors and lack of crystallization of attitudes toward fairness. However, one does not have data upon which to base such a conclusion.

---

[6]The chi-square value of the association of this item with high scores by respondents is 4.42 and is significant at the .05 level.

[7]The chi-square value of the association of this item with high scores by respondents is 7.27 and is significant at the .01 level. See Appendix IX for calculations.

Analysis of Potential Associations Between Managerial Control, Job Requirements, Turnover, and Income

Five elements of managerial supervision were assessed and dichotomized. The first was the control of the detailman's routing. If the company indicated that they attempted to control the detailman's routing in the territory by means other than general supervision, they were rated high on this element. Next was the freedom for the detailman to develop his own detail. If, in the job description, the company referred to a memorized detail or a pre-planned detail, the company was given a high rating on this element. Third, if the job description referred specifically to duties in the nature of trade relations (e.g. conventions, wholesaler's association meetings, etc.), the company was rated high on this element. Fourth, if the company gave the detailman an expense budget or fixed limits per day for food and lodging, it was rated as high. Finally, an over-all estimate of the detailman's freedom on the job was determined on the basis of the number and complexity of evaluations for determining compensation. This was also rated high if there were many items of evaluation or a total performance review. From these five elements, the companies having three or more high ratings were classified as having high over-all managerial control over the detailmen. Similarly, if they had fewer than three high elements, they were rated "low."

Next, firms were cross-classified as to whether they were above, or not above, the median for companies in the sample regarding: (a) turnover rate, and (b) average compensation payment. The resulting contingency tables, presenting the incidence of (a) and (b) in firms categorized as having high or low managerial control of detailmen's activities, are shown as Tables 10 and 11.

Table 10. Incidence of Turnover in Firms Categorized as Having High or Low Managerial Control of Detailmen's Activities

	Low Managerial Control	High Managerial Control
Turnover not above median rate (13.3%)[a]	10	4
Turnover above median rate	6	7
Total	16	11

[a]Only 27 respondents provided turnover data.

Chi-square value: .629 (not significant)

Table 11. Incidence of High and Low Compensation Level In Firms Categorized as Having High or Low Managerial Control of Detailmen's Activities

	Low Managerial Control	High Managerial Control
Firm's average compensation payment at or below median	9	5
Firm's average compensation payment above industry median	8	6
Total	17	11

Chi-square value: .00 (not significant)

Firms which had high or low managerial control ratings were then classified again as to whether they had high or low time-discretion requirements for the detailman's job. This was accomplished by examining the frequency of required reports submitted by the detailmen and the frequency of the formal performance evaluation. If detailmen were required to submit daily reports and were evaluated quarterly or bi-monthly, the time-discretion requirement was judged to be short or low as compared to the firm where detailmen submitted reports weekly and were evaluated annually. The resulting contingency table is shown as Table 12.

Table 12. Incidence of High and Low Time-Discretion Requirements In Firms Categorized as Having High or Low Managerial Control of Detailmen's Activities

	Low Time-Discretion	High Time-Discretion
Low managerial control	10	7
High managerial control	5	6
Total	15	13

Chi-square value: .141 (not significant)

Two analyses which provided significant implications were: (1) high and low turnover figures cross-categorized with high and low time-discretion requirements of the job; and (2) high and low average compensation level cross-categorized with high and low time-discretion requirements. These are shown as Tables 13 and 14 respectively.

Table 13. Incidence of High and Low Time-Discretion Requirements With High and Low Turnover Figures

	Low Time-Discretion	High Time-Discretion
Turnover figure of company at or below median for industry	5	9
Turnover figure of company above median for industry	10	3
Total	15	12

Chi-square value: 2.675 (not significant at the .05 level)

Table 14. Incidence of High and Low Time-Discretion Requirements With High and Low Average Compensation Payments

	Low Time-Discretion	High Time-Discretion
Firm's average detailing payment at or below industry median	10	4
Firm's average detailing payment above industry median	5	9
Total	15	13

Chi-square value: 6.74 (significant at the .01 level)

Wh

were onl

figures f

Elliott Ja

requirem

education

discretio

by an abi

for lower

Det

majoring

level of ti

to be fair

communic

homogene

turnover

should re

shows tha

not statist

it does im

jobs with

cretion ca

considers

compensat

than the ch

ments and

Data

were prim

continuous

compensati

While the figures for Table 13 were not significant, as there were only twenty-seven respondents who provided turnover data, the figures for Table 14 were very significant. Both are consistent with Elliott Jaques' assertion that compensation level and time-discretion requirements of the job are related. A person's intelligence and education should correlate fairly well with his ability to exercise discretion over periods of time, higher education being characterized by an ability to plan for relatively long time periods and vice versa for lower intelligence and/or education.

Detailmen, being predominantly drawn from college graduates majoring in the life sciences, can be expected to have a fairly high level of time-discretion ability. Furthermore, one would expect them to be fairly homogeneous with respect to this ability as they must communicate effectively with physicians. Assuming they comprise a homogeneous group, chi-square analysis of the association between turnover and time-discretion requirements of the detailman's job should reveal a significant negative association. Inspection of Table 13 shows that they are negatively associated although the association is not statistically significant. While the association is not conclusive, it does imply the validity of Jaques' assertion that individuals seek jobs with time-discretion requirements which equal their time-discretion capacities. The implication is also strengthened when one considers that the chi-square value of the association of average compensation level and turnover (see Table 15) is considerably less than the chi-square value of the association of time-discretion requirements and turnover.

Data on managerial control and time-discretion requirements were primarily of a qualitative nature and could not be arrayed in a continuous manner. On the other hand, data on turnover and average compensation level were specific figures and could be continuously

arrayed from highest to lowest in the industry. Whereas the chi-square analysis of average compensation level and turnover was not significant, rank correlation indicated that a significant negative relationship existed (rho = -.542, significant at the .01 level). Thus, while a significant categorical association is absent from the data a significant positional association is evident.

Table 15. Incidence of High and Low Turnover In Firms Categorized as Having a High or Low Average Compensation Level

	Firm's Average Compensation Payment at or Below the Industry Median	Firm's Average Compensation Payment Above the Industry Median
Turnover rate not above median rate (13.3%)[a]	6	8
Turnover above median rate	8	5
Total	14	13

[a]Only 27 respondents provided turnover data.

Chi-square value: .360 (not significant)

Factorial Analyses

Dichotomized elements (managerial control, average compensation level, time-discretion requirements, product concentration, and attitude scores) were combined in several ways to arrive at three, 2 x 2 x 2 contingency tables. Due to the small sample size, the tables were limited to three elements yielding eight combinations. These tables are shown as Tables 16, 17, and 18 respectively.

Table 16. Incidence of Managerial Control, Product Concentration and Compensation Level With High Sales Growth of Sample Firms

No. of Firms	27							
Compensation Level[1]	16(low)				11(high)			
Managerial Control[2]	10(low)		6(high)		4(low)		7(high)	
Product Concentration[1]	5(low)	5(high)	5(low)	1(high)	4(low)	0	2(low)	5(high)
Proportion With High Sales Growth[1]	1	5	2	0	0	0	1	2

[1]Basis for assigning to high category was whether the average payment of the firm exceeded the detailmen's mean for this figure.

[2]Same basis for dichotomization as described in the preceding section. See page 37.

Table 17. Incidence of Attitude Score, Product Concentration and Managerial Control in Firms with an Average Compensation Level Above the Mean for Detailmen

No. of Firms	28							
Attitude Score[1]	15(low)				13(high)			
Product Concentration[2]	8(low)		7(high)		8(low)		5(high)	
Managerial Control[2]	5(low)	3(high)	3(low)	4(high)	4(low)	4(high)	5(low)	0
Proportion with High Compensation[2]	1	0	0	3	3	2	3	0

[1] High scores are those in which respondents agreed with three or more of the questions numbered 56, 57, 65, 66, 76 and 77.

[2] Same basis for dichotomization as in Table 16.

Table 18. Incidence of Attitude Score, Product Concentration and Time-Discretion Requirements of Job in Firms With an Average Compensation Level Above the Mean for Detailmen

No. of Firms	28							
Attitude Score[1]	15(low)				13(high)			
Product Concentration[2]	8(low)		7(high)		8(low)		5(high)	
Time-Discretion Required by Job[3]	6(low)	2(high)	2(low)	5(high)	4(low)	4(high)	3(low)	2(high)
Proportion With High Compensation[2]	0	1	1	2	3	2	1	2

[1]Same basis for dichotomization as in Table 17.

[2]Same basis for dichotomization as in Table 16.

[3]Same basis for dichotomization as in the preceding section. See page 39.

Each of these tables was treated by the Dyke and Patterson method outlined in A. E. Maxwell's book.[3] Matrices were constructed, iterated, and then inverted by an IBM 1620 computer in the Massachusetts Institute of Technology computer laboratory. The weighted main effects, products of post-multiplying main effects by the inverse matrices, standard errors, and the significance of each main effect for each of the contingency tables (Tables 16, 17, and 18) are shown as Tables 19, 20, and 21 respectively.

From Table 19, it is evident that in the presence of managerial control and product concentration, compensation level is negatively associated to some extent with sales growth. However, the association is not significant at the .10 level. While this is a strange inference and one might be tempted to say that such a result is due to chance, it nevertheless is consistent with other findings. First, compensation level and number of detailmen are positively correlated. Second, product concentration and sales growth are significantly related, high product concentration yielding high sales growth and low concentration yielding low sales growth. Finally, there is a tendency for product concentration to decline with increasing firm size. Thus, low compensation levels associated with high product concentration and small firms would be expected to account for a considerable number of occurrences of high sales growth.

Similarly, managerial control in the presence of product concentration and compensation level is not significant in explaining sales growth. However, when managerial control is viewed in relation to the fact that product concentration in the presence of compensation level and managerial control is not a significant explanation of sales growth,

---

[3]A. E. Maxwell, op. cit., Chap. VI. For the specific procedures used, see Appendix X.

managerial control becomes more important. This is because in the absence of managerial control and compensation level, product concentration is a very significant explanation of sales growth (chi-square = 6.97; $P < .01$). The implication is that managerial control and compensation level would be significant in explaining why companies with low product concentration show higher than expected sales growth, and companies with high product concentration show lower than expected sales growth. However, such an hypothesis cannot be tested by the data collected in this survey.

Table 19. Significance of Association of Managerial Control, Product Concentration and Compensation Level With the Sales Growth of Sample Firms

	Weighted Effect	Main Effect	Std Error	C.R.	Significant Level
m'	-4.474	-1.394	.97	-1.44	N.S.
Product Concentration	1.814	.087	.28	.31	N.S.
Managerial Control	.712	.035	.28	.13	N.S.
Compensation	3.112	-1.167	.98	-1.19	N.S.

A test of the model, as suggested by Maxwell, shows that it is not a significant explanation of the data, and that the interactions would be likely to more fully explain the data. This supports the reasoning above; however, the sample size is not sufficient to proceed with an 8 x 8 matrix. A further inference is to be had upon inspection of Tables 20 and 21.

In Table 20, the only element approaching a safe level of significance is that of being low on managerial control, product concentration,

Table 20. Significance of Association of Managerial Control, Product Concentration and Attitude Score With Compensation Level of Sample Firms

	Weighted Effect	Main Effect	Std Error	C.R.	Significant Level
m'	-5.430	-1.798	.71	-2.53	P < .02
Managerial Control	1.868	- .560	.47	-1.19	N.S.
Product Concentration	.756	- .510	.41	-1.24	N.S.
Attitude score	-1.794	.739	.52	1.42	N.S.

Table 21. Significance of Association of Attitude Score, Product Concentration and Time-Discretion Requirements of Job With Compensation Level of Sample Firms

	Weighted Effect	Main Effect	Std Error	C.R.	Significant Level
m'	1.349	- .0016	.40	- .000	N.S.
Attitude Score	3.893	1.201	.51	2.37	P < .05
Product Concentration	3.811	1.112	.48	2.32	P < .05
Time-Discretion	- .027	1.300	.62	2.10	P < .05

and attitude score (m'). This is significantly related to low compensation levels. Similarly, high attitude scores are indicative of a fairly well crystallized criteria of security, incentive, and fairness. The positive relationship, (1.42) while not significant at the .10 level, implies that attitude scores are associated, positively, with the company's compensation level of detailmen.

A test of the model again indicates that interactions of management and product concentration with attitude score might be significant in a further explanation of compensation levels.

Finally, Table 21 indicates that time discretion, product concentration, and attitude score, in the presence of each other, are all related to the compensation level of the firm. Furthermore, the significance of product concentration, in the presence of attitude score and time-discretion supports the problem voiced by several managers regarding "run-away" products which add to detailmen's commissions. It also is relevant to the problem of a lack of crystallization of attitudes among managers regarding incentives and fairness. A test of the model indicates that the model is not a complete explanation of the data and that interaction effects would probably be significant. Product concentration, interacting with attitude score, would likely be the most significant and supports the unresolved attitudes of sales managers, in the aggregate, toward the criterion of fairness. Following this, product concentration, interacting with time-discretion, would likely be of significance in explaining compensation levels.

Relation of Findings to General Conclusions of Other Studies

Sixteen years ago, a National Industrial Conference Board Report stated: "There is a contention, in fact, that sales management has been slow to adopt personnel practices and policies which have won wide

acceptance in the field of industrial relations."[4] Examination of the pharmaceutical industry revealed that presently only twenty out of twenty-eight firms had any semblance of a job description, with only one being a full description as specified by Maynard and Davis. Furthermore, only nine of twenty-eight firms placed major emphasis on total job performance when evaluating detailmen's performance, while only two of the nine held it to be the most important evaluation factor. This would indicate that even at present, the pharmaceutical industry could make greater use of scientific personnel policies and practices.

Similarly, Tosdal and Carson in 1952 stated:

> As the analysis of business experience shows, it is both in the failure to understand the nature of the task to be performed and in the executive's inability to evaluate performance accurately that much controversy in connection with salesmen's compensation arises. Only a limited portion of salesmen's performance lends itself to accurate measurement; for instance, the clearly understandable figures of sales volume and the somewhat more difficult items of profits, margins, and sales costs.[5]

Sales managers in the pharmaceutical industry today look at the problem in almost precisely this fashion. None of the companies gave salesmen information on margins, profits, or sales costs for their territories. Also, in evaluating salesmen's performance for determining compensation, only nine firms used a total performance evaluation, and of these nine, only three could be categorized as using behavioral science measurement methods.

---

[4]Elmer W. Earl, Jr., Salesmen's Compensation Plans. N.I.C.B. Studies in Personnel Policy, No. 81. (New York: National Industrial Conference Board, Inc., 1947), p. 7.

[5]Tosdal and Carson, op. cit., pp. 302-303.

Another point made by Tosdal and Carson was that: "In general, commission plans of compensation were accompanied by higher turnover than salary; salary and incentive plans fell between."[6] The data in this study fit the pattern; however, tests of association were not significant.

Similarly, the above authors found: "As might be expected, high average earnings were accompanied generally by relatively low turnover, whereas low earnings were most frequently accompanied by higher turnover."[7] Pharmaceutical data fit this configuration with a rank correlation of -.542 and a "t" value of 3.23. This was significant with a chance probability of occurring of less than .01.

In a 1955 study, R. J. Leavesy found a higher median income for detailmen employed by companies having more than 100 men.[8] In an attempt to see if this was a general and continuous phenomenon, a rank correlation between average income and number of detailmen employed was calculated. The results were significant, with rho = .468 and "t" = 2.65; chance probability is .02 or less.

Norman Hawkins, E. J. Hall and N. S. Birkett found a median income for pharmaceutical detailmen in 1958 of $7,606.00. They hypothesized that this may have been biased on the high side due to their sample.[9] This compares favorably with a mean estimated income of $8,115.00 for 1961, and a median of $8,190.00. They concluded that

---

[6]Ibid., p. 403.

[7]Ibid., p. 407.

[8]R. J. Leavesy, "Recruiting Detailmen," Medical Marketing, Vol. V (January, 1956), pp. 1-5.

[9]N. Hawkins, E. J. Hall and N. S. Birkett, "The Detailman's Side of the Controversy," The Pennsylvania Medical Journal, Vol. LXIII (June, 1960), pp. 865-869.

the figure of $7,606.00 was "middle-class," however, in 1958 this placed detailmen in the upper 26.5% of income earners,[10] while $8,190.00 in 1961, placed them in the upper 28.0%.[11]

---

[10]U. S. Dept. of Commerce, Office of Business Economics, Survey of Current Business, Vol. XLI, No. 5 (May, 1961), p. 13.

[11]U. S. Dept. of Commerce, Office of Business Economics, Survey of Current Business, Vol. LXII, No. 4 (April, 1962), p. 10.

CHAPTER V

SUMMARY AND CONCLUSIONS

An Appraisal of the Research

Probably the most appropriate item for beginning a criticism of any research is the basis upon which it was formulated. The basic question involved here is the importance of compensation as a managerial tool for control of marketing activity by the sales force. While the data collected indicates that compensation can be important to marketing effectiveness, it is not conclusive and final. This is due to a number of identifiable problems. The first is a lack of reliable criteria. While most firms cooperated on procedural questions, many refused to cooperate on questions which would allow evaluation of corporate effectiveness. For example, almost one-third of the sample refused to give any profit information; another one-third refused to give absolute profit figures. Similarly many firms did not have data other than sales data on which to evaluate corporate marketing effectiveness. Furthermore, many firms even refused to give dollar sales figures. Of the important criteria questions the only salvageable ones were sales increase figures, sales force turnover figures, figures on the number of products sold, and product concentration figures.

The company's rate of sales increase, while a good quantitative criterion, is lacking as a qualitative criterion. Had actual sales dollars been available, sales per man, sales per channel, dollars of product concentration, and other important criteria could have been calculated.

Similar problems exist with the company's rate of profit increase. Furthermore, industry cooperation was not sufficient to allow the use of any profit criteria in the research. A repeat of this research would lead one to focus more carefully on sales and profits by attempting to discriminate more effectively between competitive sales and profits, and oligopolistic sales and profits. This would require a longer period of survey time and much greater cooperation, which would probably not be forthcoming from the industry. However, as previously mentioned, the hesitancy is understandable in view of the recent investigations and publicity. Thus, the basis upon which the research was founded, was and is sound--the effectiveness was limited, as is most behavioral research, to the amount of cooperation available.

Regarding the research design, this will be treated in the separate parts: (1) sample; (2) questionnaire; and (3) interview procedure. The sample was well-drawn, with ratio estimates very closely approximating known industry data such as total sales and sales growth. If further aggregate measures for weighting sample strata had been available, the sample would have been considerably more valuable. For example, aggregate channel sales, correctly classified and then used to weight sample strata, would have yielded an ethical pharmaceutical distribution profile. This would have been of value to participating firms. The conclusion to be drawn regarding sample selection is that comparison with known figures shows it to be an accurate, stratified sample which would be further strengthened by additional means of weighting.

The questionnaire posed more problems and theoretical issues. First, it was longer than desired, complicated, and subject to semantical error when used as a mail device. This was recognized at the time of design, with the result that interview collection was obtained for twenty of the firms in the sample. During each interview the questionnaire was used as a structuring device.

Second, the questionnaire was both too detailed and not detailed enough. It was too detailed in the sense that subtle differences between questions were often overlooked by respondents with the obvious result of confounding replies and increasing the probable response bias. On the other hand, the questionnaire was not detailed enough to accommodate subtle distinctions in the respondent's replies to a given question. This was corrected to a considerable extent by the use of interview procedure.

Third, the questionnaire was worded precisely and effectively for careful thought, but to the limited attention span available to an executive it sometimes appeared too carefully drawn to be trusted. Several respondents stated out loud: "Now I'd better be careful or I'll appear inconsistent." Similarly, many wished to know the motives for certain questions, especially cross-reference, corporate effectiveness criterion, and validating questions.[1]

Regarding the industry cooperation, sophistication of firms' accounting, operational importance of policies, and the effectiveness of memory, the questionnaire was very adequate in terms of the range and complexity of questions.

Finally, regarding its appearance and format, the questionnaire was very effective. Following the outline of questionnaire construction given by Boyd and Westfall,[2] and considering the nature of the research, the questionnaire was operationally very satisfactory. Similarly, the pretest and analysis contributed substantially to the reorganization of the questionnaire and data collection procedure.

---

[1]It should be remembered that these executives had been involved with recent FTC questionnaires and Senate Subcommittee examinations which made them very cautious in answering a questionnaire.

[2]Harper W. Boyd, Jr., and Ralph Westfall, Marketing Research (Homewood, Ill.: Richard D. Irwin, Inc., 1956), Chapter 7, "Data Collection Forms."

Interview procedure is the most nebulous to appraise. While one can cognitively know and understand personality traits, what to observe in a specific reaction, the appropriateness of deliberately biasing a question, as well as understanding the procedure of non-directive probing, the behavioral effectiveness of an interviewer only comes with experience. Similarly, the objective and integrated appraisal of an interviewer can only be performed by an experienced and effective interviewer aware of cultural differences, role differences, and attitude sets. Consequently, appraising one's own interviewing effectiveness is similar to shaking hands with one's-self--it depends on an interpretation of a handshake and at best is backward to inter-personal procedures. However, at the cognitive level, this researcher felt quite adequate to the task. At the behavioral level, self-perceived effectiveness increased throughout the series of interviews, thus implying that behavioral flexibility and effectiveness suffered relatively in the first half of the research due to a lack of experience. The co-interrogator's cultural background, understanding of the executive role, and attitude set (being himself a seasoned, policy-level executive) qualified him as a more effective interviewer throughout the research. Thus, interviews and elicited responses for the complete survey can best be judged as exceeding the normal effectiveness of business research interviews.

In conclusion, the basis of research formulation was, and is, sound; the sample was accurate and representative, and could be expected to be valuable as a paired sample for further observations at a later date; the questionnaire was operationally satisfactory as an interview structuring and data gathering device; and the interviewing effectiveness was probably above that of similar research problems.

A Summary of Main Findings

The ethical pharmaceutical industry can be characterized as highly promotion-oriented, having one detailman for every fifteen physicians in the United States. The firms predominantly encourage their men via incentive compensation; the most frequently used plan is salary plus commission, and the next most frequently used plan is salary plus bonus.

The ethical pharmaceutical detailman is well-paid; in 1961, the top paid ten percent earned approximately $10,810.00 per annum, the lowest paid ten percent earned $6,270.00, and the over-all average of detailmen's income was $8,115.00. In addition, he is well provided for in terms of fringe benefits, with all firms offering pension plans, comprehensive medical and hospital insurance, and life insurance. In only two cases did the detailman have to pay for one or more of these services wholly on his own. In all other cases, the company paid the complete cost or shared on a fifty-fifty or better basis.

In all cases, the salesman was provided an automobile at company expense. In five firms the automobile was used as an incentive, allowing the successful or long-service detailman to select an automobile of greater value than one of the low-priced three. In addition, his reasonable expenses in the course of doing business were reimbursed and not deducted from his commission income.

On the average, the detailman's product line obtained 37 0% of its sales from two products. Furthermore, he was often found competing against other companies and their detailmen who sold the same product with a different brand name.

Sales managers have become increasingly aware of the need for sound personnel policies and procedures as evidenced by the shift in number of firms using job descriptions, and the increasing sophistication of evaluation procedures. However, the firms have considerable room

for improvement in this area, as evidenced by the lack of completeness in job descriptions, roughly formulated standards of performance, and a lack of behavioral science measurement methods.

Sales managers felt that the most important criteria for designing a sales compensation program were: (1) the program should be fair to both the company and the salesman; (2) the program should provide incentive to the salesman to perform his job requirements; and (3) the program should be understandable to the salesman. When asked to answer attitude questions regarding fairness, security, and incentive values, the areas regarding fairness and security (rated (1) and (2) in importance) were the least clearly formulated and agreed upon by sales managers. Managers as a group could not decide on a common definition of fairness, and their attitudes toward the subject were non-linear. Similarly, they were not clear on a common meaning of incentive values, nor did they hold a linear attitude toward incentives. Only on the criterion which they had rated as low in importance had they formulated a linear opinion and attitude, namely the criterion of security.

Prudent acceptance levels found that: (1) high and low time-discretion requirements of the detailman's job are significantly associated with high and low average compensation levels; (2) high and low managerial control is not significantly associated with high and low turnover, high and low average compensation, or high and low time-discretion requirements of the detailman's job; (3) high and low time-discretion requirements of the detailman's job are not significantly associated with high and low turnover; and (4) while there was not a significant categorical association of high and low average compensation level with high and low turnover, rank correlation analysis indicated a significant negative association between turnover rankings and average compensation rankings of the firms.

Similar prudence in factorial analysis of product concentration, managerial control, average compensation level, attitude score, and time-discretion required by the detailman's job indicates that: (1) managerial control, in the presence of product concentration and average compensation level, is not a significant explanation of sales growth; (2) average compensation level, in the presence of managerial control and product concentration, is not a significant explanation of sales growth; (3) product concentration by itself is a significant explanation of sales growth, but, when in the presence of managerial control and compensation level is not a significant explanation; (4) the lack of managerial control, low product concentration, and low attitude score is significantly associated with low average compensation levels; (5) attitude score, in the presence of product concentration and time-discretion requirements of the detailman's job is a significant explanation of average compensation level; (6) product concentration, in the presence of attitude score and time-discretion requirements of the detailman's job, is a significant explanation of average compensation level; and (7) time-discretion requirements of the detailman's job in the presence of attitude score and product concentration, is a significant explanation of compensation level.

A Guide For Sales Managers

The sales manager who would improve or revise his company's compensation program should not begin with the compensation program itself. Instead, he must analyze and carefully re-evaluate the salesman's job. A once effective compensation program does not become ineffective--the job changes. These changes may be quantitative or qualitative, the latter being more difficult to assess, and are the cause of the required change in the compensation program.

A company has certain objectives to be achieved by the marketing division, and the methods selected to achieve these objectives will determine which functions are to be performed by the sales force. The functions of the sales force, when divided into geographic areas, customer requirements and product differences, yield the raw components for job compositions. These raw components, when weighted by value in achieving over-all objectives and arranged so that individual men can perform them, are jobs. A formal statement of the job and the methods required to perform the job is a statement of the job requirements.

Job requirements may be categorized as requiring high, average, or low amounts of self-management in the form of time-discretion.[3] A salesman capable of fulfilling the company's job requirements can be identified via modern personnel selection methods, and the firm can be categorized as having high, average, or low selection requirements. From the two measures preceding, plus a categorization of the company's mean sales force compensation as to whether it is high, average, or low in the industry, one can begin to diagnose sales force performance.

There are a number of ways in which job requirements, compensation level, and salesmen's selection requirements interrelate.[4] First, if job requirements, compensation level, and salesmen's selection requirements are all high, the firm will experience low turnover, highly effective performance by the sales force, and a minimum

---

[3]The average referred to here is the industry average. By using the industry average, a normative base for measurement is available, thus giving operationally meaningful measures.

[4]See Elliott Jaques, op. cit., for a discussion of individual development in "The Work-Payment-Capacity Nexus," pp. 213-225. See also Appendix XI for a brief explanation of his theory.

of required supervision as compared to industry averages. However, it should be noted that high job requirements, high compensation level, and high salesmen's capabilities cannot make up for poor products. Similarly, they cannot overcome severe cyclical or secular decline. However, industry marketing statistics should allow one to estimate whether such declines are in evidence.

Second, if job requirements, compensation level, and salesmen's selection requirements are average, the areas of turnover, salesmen's effectiveness, and supervision required will all approximate the industry averages. This is due to a lack of a maximum cut-off point in selection testing, something which is a well-known phenomenon to personnel executives. The result is that while company selection requirements are of average stringency in the industry, it does not reject those men capable of handling substantially more difficult jobs. Thus, after a while, these highly capable men move on to jobs which are more challenging and which pay more.

Third, if job requirements, compensation level, and salesmen's selection requirements are low, several peculiarities will show up: (a) sales force effectiveness will be extremely low as compared to the industry; (b) the supervision required will be much higher than expected for similar job requirements in other companies, and the company will find it difficult to hire and retain field sales managers; and (c) turnover will not be a reliable index of worker satisfaction, compensation levels, or managerial effectiveness. This latter problem is due to the compounding effects of low job requirements, low compensation level, and low selection requirements, all of which are causes for leaving such a job. In some cases, it might even be hypothesized that the company would have a very low turnover rate because the men knew they wouldn't be hired by any other firm.

Fourth, if job requirements are high, compensation level low, and selection requirements high, the company will find turnover is high, and that it is extremely difficult to obtain the kind of man possessing the required capabilities. Sales force effectiveness will likely be high, due to the fact that the men who have been hired possess the capabilities to perform the job requirements. Morale will be suffering, with an expectation of grousing about pay, and the required supervision will be higher than expected due to the rationale: "If they want me to perform a top-notch job they should pay me for it." The alternatives for correction here are to increase the compensation level or lower the job and selection requirements.

Fifth, if job requirements are high, compensation level low, and selection requirements low, turnover will be high, with sales force effectiveness considerably below the industry average, and required supervision will be very high. This is due mainly to the low selection requirements which allows men of low capability to be hired and trained. This problem can be suspected when one finds that many of the men leaving the employ of the company were not performing up to the job requirements. The remedy is either to lower the job requirements or raise compensation and selection requirements.

Sixth, if job requirements are high, compensation level high, and selection requirements low, the turnover will be higher than expected, sales force effectiveness will be less than expected, and the managerial supervision required will be greater than expected. This is due to men of less than high capability being attracted to high paying jobs, being unable to perform effectively and yet unwilling to leave such a well-paying job. The key to recognizing such a situation is when the proportion of men leaving the company, due to a lack of performance, is considerably greater than the proportion leaving other high compensation and high job requirement firms for the same reason.

The remedy to this situation is to raise and improve selection requirements.

Seventh, if job requirements are low, compensation level low and selection requirements high, the turnover will be excessively higher than the industry average, sales force effectiveness will be above that expected, and the amount of supervision required will be less than expected. The higher turnover is due to men with high capabilities moving on to better jobs and/or better compensation. These men with capabilities in excess of the requirements will cause the effectiveness to be greater than expected and require less supervisory control than expected. The remedy here is to either increase the job requirements and compensation, or put an upper limit on capability when selecting new employees.

Eighth, if job requirements are low, compensation level high, and capability low, the turnover will be low and mainly due to better qualified men moving on to jobs with a greater challenge. Similarly, sales force effectiveness will be less than expected when compared to companies with the same compensation level. Furthermore, supervision required will be less than expected due to the men who haven't moved on to better jobs. The remedy here is to either lower the compensation level or increase job and selection requirements.

Ninth, if job requirements are low, compensation level high, and selection requirements high, turnover will be above the industry average and mainly due to men leaving of their own volition to accept more challenging jobs elsewhere. Sales force effectiveness will be greater than expected for the low job requirements, and supervision required will be less than expected as the men are capable of handling much more demanding job requirements. The remedy here is either to lower the selection requirements and institute a maximum cut-off point plus lower the compensation level, or raise job requirements.

While similar interpretations could be applied to average versus high and average versus low measures, a problem of significance arises. Namely, average compensation level, high job requirements and high selection requirements might not yield a meaningfully higher than expected turnover rate.

The key to the whole analysis, as outlined above, is the area of job requirements. Job requirements are dependent upon the objectives to be achieved by the marketing division and the arrangement of the raw components into jobs. Once the job requirements are set, the key to optimum effectiveness is in bringing compensation level and selection requirements into line with the job requirements. While job requirements can be raised or lowered, they are generally confined within a range dictated by the sophistication of the purchaser, complexity of the market, and the technical nature of the product. However, it should be pointed out that these are subject to change via a change in marketing and/or product strategy.

Regarding the compensation program, the manager who would improve or revise his company's compensation program is still not ready to do so. He must assess the information coming from the salesman, the information going to the salesman, and set standards of performance--qualitative and quantitative. A salesman cannot be responsible for his performance unless he receives a valid and continuous feedback from management in the form of reports and work-with evaluations. Similarly, if the sales manager's objectives are not relevant to the feedback going to the salesman, the salesman cannot remedy any shortcomings himself but must rely upon management to call it to his attention and explain what the problem is. Many insecure managers probably limit the information going to the sales force in an attempt to justify their existence. However, this gets into the realm of communications analysis, which is beyond the scope of this dissertation.

Once the manager has examined and re-evaluated the job, reasoned through the questions of job requirements, compensation level, and standards for selection; plus reassessed the standards of performance, and evaluated the communications to and from the salesman for relevance, he is then ready to improve or revise his compensation plan.

All of the foregoing is necessary because the level of compensation and the procedures of evaluation are probably more important in the pharmaceutical field than is the method of compensation. In fact, the more complex the job, and its requirements and capacities needed, the more important are the behavioral methods for evaluation. With the behavioral methods of evaluation, commission plans based on total sales, or sales of particular products, are not very relevant. A commission based on profitability of the territory and merit increases for excellence are probably much more relevant as they are more closely related to the total job requirements than are commissions on total sales and sales of specific products.

A company which expects a high element of growth in sales and profits probably would do better to have some form of commission on profits rather than rely solely upon merit increases. Similarly, a company which is very large with many products, without an exceptionally strong concentration on any one or two products, can probably expect to grow at about the industry average, and probably would do better to rely upon high compensation levels with merit increases, as they will dealing with a number of products which are in the nature of "loss-leaders."

Finally, the manager must come to grips with what is a meaningful incentive to his men. In the pharmaceutical industry, call commissions, contests, sales increase commissions, etc., probably are not very meaningful to the men owing to the strong success of

firms which have a high concentration in a few fine products--a situation over which the salesman has little control. Furthermore, he must decide on a criterion of fairness which is acceptable to him and his men--otherwise there is likely to be a serious misunderstanding regarding "run-away" products, a "plum" territory, wholesale and house account sales, and finally, adverse economic conditions.

Interpretive Conclusions

This section is not devoted to the acceptance or rejection of hypotheses, but has the purpose of inferring further research. The most concise explanation for such an attempt is that given by Sir Ronald A. Fisher:

> Convenient as it is to note that a hypothesis is contradicted at some familiar level of significance such as 5% or 2% or 1% we do not, in Inductive Inference, ever need to lose sight of the exact strength which the evidence has in fact reached, or to ignore the fact that with further trial it might be stronger, or weaker.[5]

First, regarding compensation, it is apparent from this research, the excellent work of Elliott Jaques,[6] and present day behavioral management theorists that: (1) compensation level is an important factor in effective job performance;[7] (2) the compensation program is effective only in so far as it compensates for the total job performance; (3) the parameters for compensation level are the time-discretion

---

[5]Sir Ronald A. Fisher, The Design of Experiments, 7th ed. (New York: Hafner Publishing Company, Inc., 1960), p. 25.

[6]Elliott Jaques, op. cit.

[7]Jaques further asserts that it is important to individual development and mental health.

ability of
job; and
science u
evaluate

An
is prima
detailma
seem to
Furthern
effective
utilize th

Ne
grams, t
to the co
items ar
incentive
the reas
of import
attitudes
Incentive
they do n
more eff
and (2) th
capabiliti

The
is that of
person to
require a
time-disc

ability of the individual and the time-discretion requirements of the job; and (4) the parameter for a compensation program is the behavioral science understanding on the part of management, i.e., the ability to evaluate the total job.

An important implication of this research is that high turnover is primarily a function of low time-discretion requirements of the detailman's job. If so, job design and evaluation procedures would seem to be important variables which can be controlled by management. Furthermore, it is probable that managerial control can add to the effectiveness of high time-discretion requirements and more fully utilize the abilities of college graduates recruited by the industry.

Next, regarding the criteria for designing compensation programs, the most important are: (1) incentive value, and (2) fairness to the company and the detailman. Among sales managers, these two items are a source of disagreement. It is probable that security and incentives are inversely related to a significant degree. However, the reason for their being inversely related is not known and would be of importance in further research. Similarly, a study of detailmen's attitudes toward security and incentives would be most helpful. Incentive values, as traditionally conceived, are over-simplified as they do not encompass the notions that: (1) an incentive can be no more effective than the evaluation procedure upon which it is paid; and (2) the basic incentive of a person is to realize fully his own capabilities of which time-discretion is one measure.

The most promising relationship to be tested in further research is that of time-discretion ability and incentives designed to allow a person to earn more money for a fuller use of this ability. This would require a closer look, in depth, at the detailman's job, job satisfaction, time-discretion ability required to communicate effectively with

physicians, and their relation to profits, turnover, sales, and various qualitative standards of performance.

Finally, with further research using more precise definitions and measures, management would probably be found to be the single most important variable determining and explaining marketing effectiveness. This would result in a much greater emphasis on comprehensive management development.

Ethical pharmaceutical sales management is more sophisticated than most industries, but it also has greater opportunities to improve.

Prior

I

numbe

The sc

trainin

ing str

basis f

product

Structu

T

isolate

The tas

figures

company

human u

and use

This me

tise or p

the consu

Fr

preparat

purpose

supplier.

APPENDIX I

SAMPLE SELECTION

Prior Experience of the Researcher

During the previous three years, this writer has studied a number of the ethical pharmaceutical industry marketing problems. The scope of these problems ranged from detailing, and sales training to physical distribution, product strategy and general marketing strategy. The experience gained has provided a more insightful basis for gathering and evaluating information regarding market strata, product areas, marketing procedures and industry characteristics.

Structure of the Industry

The domestic ethical pharmaceutical industry is difficult to isolate in terms of identifying the firms comprising the industry. The task is even more difficult when accurate industry sales and profit figures are sought. The definition of an ethical pharmaceutical company is: (1) It manufactures pharmaceutical preparations for human use; and (2) promotional information for deciding to purchase and use the product is given only to the physician and pharmacist. This means that an ethical pharmaceutical manufacturer cannot advertise or promote a product by advertising or promoting directly to the consumer.

From this definition, a company which produces pharmaceutical preparations for human use but sells only to other companies for the purpose of promotion and distribution is an ethical pharmaceutical supplier. Similarly, if a company manufactures pharmaceutical chemicals

for sale t

forms, th

The

ethical ph

products

with phar

areas of

of this th

primarily

preparati

Rep

of Censu

me

pri

pre

app

fie

the

Sin

of establi

are proba

Many est

establish

A f

have 250

a compan

an effecti

supplier.

---

[1]U.

[2]Ibi

for sale to other companies who in turn reprocess and prepare dosage forms, then the company is an ethical pharmaceutical industry supplier.

The Standard Industrial Classification, number 2834, includes ethical pharmaceutical suppliers, proprietary firms which advertise products to the consumer (e.g., "One-A-Day" brand vitamins), firms with pharmaceutical by-products which are primarily engaged in other areas of manufacturing, and finally the firms which are the concern of this thesis: ethical pharmaceutical firms which are wholly or primarily engaged in manufacturing and selling pharmaceutical preparations for human use.

Regarding S.I.C. 2834 as an industry, the United States Bureau of Census states:

> Since specialized equipment or relatively large investments in capital are not prerequisites for many products primary to the industry, the industry is characterized by the presence of a relatively large number of small firms. In 1954, approximately 62 percent of the 1,163 establishments classified in this industry had fewer than 10 employees, and in 1958 the comparable percentage is 59 percent.[1]

Since the United States Bureau of the Census collects data in terms of establishments (a manufacturing location) and not companies, there are probably considerably fewer companies engaged in the industry. Many establishments can be eliminated as being suppliers or proprietary establishments or not primarily engaged in ethical pharmaceuticals.

A further categorization reveals that only 58 establishments have 250 or more total employees.[2] With less than 250 employees, a company would probably be unable to field and back up administratively an effective regional sales force and thus would have to be primarily a supplier. From this base of 58, one must subtract the 12 establishments

---

[1]U. S. Bureau of the Census, op. cit., p. 28c-2.

[2]Ibid., p. 28c-7.

having more than 500 employees and which are primarily suppliers and/or proprietary non-ethical pharmaceutical establishments. This leaves 46 establishments which are virtually the ethical pharmaceutical manufacturing and sales industry.

Market share information for 1959 is shown in Table 22. This is the latest information of a meaningful nature available to this researcher.

As an establishment and a company are not the same, and the researcher did not have information to judge what division of what company was primarily ethical as opposed to a proprietary or pharmaceutical chemical supplier, an executive for an ethical pharmaceutical company identified the thirty-four unknown establishments and selected the sample. For the sake of simplicity, the sample establishments are hereafter referred to as firms.

The weighting plan was simple and consisted of three population strata, each with a known percentage of the market. Thus, market share figures would be the basis for weighting sample values to arrive at an unbiased estimate of aggregate industry values. However, the firms involved would not give actual dollar sales figures so an alternative plan of weighting was used. The first stratum, consisting of the first three firms in Table 22, was given a weight of 20.5% of total industry sales, and sample respondents were given a weight of 1.0. The second stratum, consisting of the fourth through the twelfth firm in Table 22, was given a weight of 30.0% of total industry sales, and aggregate estimates for this stratum, based on sample respondents (seven of the nine were included in the sample and all seven responded), were given a weight of 1.34%. The third population stratum, consisting of the thirty-four remaining firms, was given a weight of 41.5% of total industry sales. The eighteen respondents posed a slightly different problem in that neither their 1959 nor 1961 percentage share of the

Table 22. Domestic Ethical Pharmaceutical Market Shares - 1959

Company	1959 Percent of Market
Eli Lilly	7.5
Upjohn	6.9
Smith, Kline & French	6.1
Lederle	5.9
Parke-Davis	5.8
Wyeth	5.2
Merck	5.2
Squibb	4.4
Abbott	3.8
Pfizer	2.6
CIBA	2.6
Schering	2.5
All others (34 companies)	41.5
	100.0%

Source: Private and not to be disclosed.

market was known. Thus, aggregate estimates for this stratum were assigned a simple weight of the inverse of the sampling fraction for this stratum, or a value of 1.89.

A total of thirty-three firms were selected from the forty-six comprising the industry. Interviews were sought with twenty-three firms and obtained from twenty.

Of the three firms refusing to be interviewed, two pleaded a lack of time for an interview and one, after agreeing to an interview, refused to answer questions.

One firm, which refused to be interviewed, completed a mail questionnaire. The remaining ten firms were mailed a questionnaire and seven responded. Thus, from a population of forty-six, thirty-three firms were selected to be included in the sample, and twenty-eight of the thirty-three responded.

APPENDIX II

DESIGN AND ADMINISTRATION OF THE QUESTIONNAIRE

Design of the Questionnaire

Six primary topics were selected as the focus of investigation:

1. The salesman's job requirements
2. Selected aspects of the sales manager's job.
3. Procedures for evaluating salesmen's performance.
4. Attitudes of sales managers toward various selected criteria for designing a compensation program.
5. Actual compensation procedures used in the ethical pharmaceutical industry.
6. Various measures of corporate effectiveness.

First, regarding the salesman's job requirements, if companies have carefully and thoroughly formulated a job description, complete with standards of performance, no other information would be required. However, it was expected that there would be great differences in the completeness and specificity of job descriptions, so three items were included in the questionnaire in order to give a gross estimation of whether job requirements were high or low. These items were: (1) the desired and required level of education for salesmen; (2) managerial efforts to control salesmen's routing and detailing efforts; and (3) the frequency and complexity of formally evaluating detail salesmen's performance.

Second, selected aspects of the sales manager's job regarding supervision were assessed. While a complete job description would

have sufficed, it was again expected that there would be great differences in the completeness and specificity of sales managers' job descriptions. Consequently, additional items were included in the questionnaire to give gross approximations as to whether supervision requirements were high or low. These items were: (1) whether or not the company attempted to control the salesman's routing of his territory by means other than general supervision; (2) whether or not the company required the salesman to use a memorized or preplanned detail; (3) whether or not the field selling force was responsible for trade relations and trade conventions; (4) whether or not the company gave the salesman an expense budget or specified fixed limits per day for food and lodging; and (5) the frequency and complexity of evaluations for determining compensation and apprising the salesman of his performance.

Third, the procedures for evaluating the salesman's performance were examined in terms of: (1) whether or not field sales managers completed a written evaluation with a standard format or printed form and discussed the results of evaluation with each man; (2) how frequently the salesman was formally evaluated; and (3) the procedures and criteria used for evaluating performance. From each company performing a formal evaluation, a copy of the evaluation form, along with instructions for the sales manager's use of the form, was requested.

Fourth, sales managers' attitudes toward various selected compensation criteria were assessed in two ways: (1) three behavioral criteria were to be measured by constructing attitude inventories for each, administering the inventories and analyzing replies according to Scalogram procedure;[1] and (2) seven frequently mentioned criteria (including the three in (1) above) were to be placed in rank order by each respondent from most important to least important.

---

[1]The inventory was designed to be analyzed by Guttman techniques. The basic reference for this technique is found in Samuel Stouffer, et al., Measurement and Prediction (Princeton, N. J.: Princeton University Press, 1950).

An attitude inventory was constructed for each of the following three criteria: (1) that a compensation plan should provide security for the salesman; (2) it should also provide an incentive to the man to perform his job requirements; and (3) the plan should be fair to the salesman and the company. The foregoing criteria plus the following four were to be ranked in order of importance: (4) the compensation plan should be easily administered; (5) it should have sufficient flexibility to meet changing requirements; (6) it should be understandable to the salesman; and (7) the plan should not be expensive to compute and operate.

Fifth, actual compensation procedures were assessed by: (1) determining the actual amounts paid to the salesman by the sample companies; (2) determining the method of computation used; (3) determining how joint bonuses or commissions are divided; and (4) requesting a copy of the company's written compensation policy and/or program.

Finally, the last section of the questionnaire was reserved for assessing various measures of corporate effectiveness. These measures were: (1) turnover; (2) number of sales districts; (3) number of managerial field units consisting of a manager and his subordinate salesmen; (4) salesmen's expense as a percentage of total sales; (5) the number of pharmaceutical invoice lines sold during the year; (6) the number of pharmaceutical orders per year; (7) the number of different pharmaceutical products sold by the company; (8) product concentration estimates; (9) total pharmaceutical sales for the year; (10) fiscal year net profit on pharmaceutical sales; and (11) the methods of distribution used and the amount of total sales sold through each method of distribution. The key items above are sales in dollars and profits in dollars as they are the common base upon which to calculate meaningful ratios and estimates from the other items.

Administration of the Questionnaire

Once the questionnaire was designed, a pretest sample of four firms was selected. The questionnaire was then administered by interview procedure to policy-level sales and marketing executives of these firms. The purpose of the pretest was to examine the effective range and semantic difficulty of questions.

From the pretest interviewees' responses to the questionnaire several important changes were made. (1) A number of questions were found to be semantically meaningless in that what meant one thing to one executive meant something else to another. These questions were revised, and special terms were more carefully defined. (2) Where two questions were intended to approach the same area or topic from a different viewpoint, executive respondents often did not perceive the intended distinction. Consequently a number of questions were deleted. (3) From discussion with the interviewees, a number of questions which had not been included were formulated and included in the final questionnaire. (4) In view of the amount of information to be elicited from busy executives, a major change in sampling procedure was made. Rahter than rely upon responses by mail, it was decided to interview as many firms as possible within budget limitations, and use the mail for the remainder.

The questionnaire, as finally administered by interview to twenty firms and by mail to eight firms, proved more than adequate in its range and in the complexity of questions. While more complex questions and data were desired by the investigator, such data were not available without considerable cost to the firms and were outside the budget of the investigator. Similarly, a number of questions, phrased simply and in a straightforward manner, were not answered by respondents due to a policy of secrecy in some cases and a lack of the desired data in others.

The approach used to solicit cooperation was different for interview respondents as compared to mail respondents. Both groups were mailed a questionnaire with a signed certification regarding the confidential nature of survey replies. In addition, a cover letter was enclosed which urged the recipients to agree to become sample respondents. The letter used for the mail sample is shown as Exhibit 1. The interview sample was mailed a different letter (Exhibit 2) pointing out that they would be telephoned in the next few days to set up an interview date and time.

Interviews were sought from twenty-three firms, twenty-one agreed to be interviewed, and twenty were finally interviewed.

Of the ten firms requested to participate as mail respondents, seven agreed and forwarded the necessary data. The three who refused were telephoned and requested to participate as interview respondents, however, they still refused.

The complete questionnaire, including the certification, is shown as Exhibit 3.

EXHIBIT 1: Cover Letter for Mail Sample

July 24, 1962

Mr. _____
_____
_____

Dear Mr. _____,

We hardly need to mention the importance of the problems of the ethical sales force. Most of them have never benefited from careful, independent research.

The aim of our research is to measure variations in practices, trends and correlations of management in terms of the detailing salesman . . . and, in correlation with criteria of corporate success, such as growth.

You might ask: why is this a survey of the ethical sales force? We believe the ethical sales force represents one of the purest forms of modern selling and is of great importance to corporate success.

The only need is your execution of the questionnaire.

As you well know a 100% response from cooperating firms is important.

A certification of this research is enclosed with the questionnaire.

As a participant you will receive an advance copy of the survey results. We are certain you will find this valuable.

It is possible that this research may make discoveries or interpretations of significance to managements.

We thank you sincerely for your cooperation which we hope will be prompt.

Very truly yours,

_____
Gary A. Marple

_____
John H. Wieland
Research Directors

_____
Dr. W. J. E. Crissy
Advisor

Attachments:
Questionnaire (3 copies)
Return envelope

Mr. __

Dear M

W
ethical
indepen

T
trends
man . .
as grow

Y
We beli
of mode

T

A
importa

A

A
results.

It
pretatio

W
the ques

W

Attachme
Questi
Return

EXHIBIT 2: Cover Letter for Interview Sample

July 24, 1962

Mr. _____
_____
_____

Dear Mr. _____,

We hardly need to mention the importance of the problems of the ethical sales force. Most of them have never benefited from careful, independent research.

The aim of our research is to measure variations in practices, trends and correlations of management in terms of the detailing salesman . . . and, in correlation with criteria of corporate success, such as growth.

You might ask: why is this a survey of the ethical sales force? We believe the ethical sales force represents one of the purest forms of modern selling and is of great importance to corporate success.

The only need is your execution of the questionnaire.

As you well know a 100% response from cooperating firms is important.

A certification of this research is enclosed with the questionnaire.

As a participant you will receive an advance copy of the survey results. We are certain you will find this valuable.

It is possible that this research may make discoveries or interpretations of significance to managements.

We will telephone you for an appointment to visit you to execute the questionnaire.

We thank you sincerely for your cooperation.

Very truly yours,

_____
Gary A. Marple

_____
John H. Wieland
Research Directors

_____
Dr. W. J. E. Crissy, Advisor

Attachments:
Questionnaire (3 copies)
Return envelope

EXI

A S

POLICIES

ETI

East Lan

EXHIBIT 3: Questionnaire Used in Research-- Final Form

Bureau of Marketing Research

Graduate School of Business Administration

Michigan State University

A Survey of Pharmaceutical Marketing and Sales Executives

on

POLICIES AND PRACTICES AFFECTING MARKETING PERFORMANCE

OF

ETHICAL PHARMACEUTICAL FIELD SALES PERSONNEL

Dr. W. J. E. Crissy, Advisor

Gary A. Marple

John H. Wieland

Research Directors

East Lansing, Michigan July 23, 1962

(This certification is for your file)

CERTIFICATION

This survey is conducted entirely under the research auspices of Michigan State University as a part of the University's doctoral research program in business and for this purpose only.

Cooperation is with the University only.

All information is supplied, held, analyzed and treated in strictest confidence. Answering firms will not be identifiable. They will be number-coded during processing of the statistics. Final statistics will be in the form of aggregates. Thus, all data will be anonymous.

If you request, an advance summary of the findings can be forwarded for your approval.

Valid research requires complete response from all firms. Your fullest cooperation, therefore, is respectfully requested with sincerest appreciation.

July 23, 1962

Gary A. Marple

John H. Wieland

Research Directors

About this Questionnaire. . . . .

The importance to you of the many problems of management of the ethical sales force scarcely needs mention.

The term "marketing concept" has become virtually a management cliche. Yet no basic, new thought has come forward in many years regarding the essential element, the sales force. Especially is this true as to the ethical pharmaceutical salesman.

Those managements that have been intimately consulted say they feel this present research has high promise of value. We think it can be significant to you as a participant.

Your participation is urgently requested.

The questionnaire has been extensively tested. It is planned so that it will be the least burden possible on you.

Three copies of this questionnaire are supplied to you. Two copies are provided to facilitate your execution, for working papers and for your file. This will permit your routing to other of your departments if necessary. One completed copy should be returned to us in the enclosed envelope.

1. For many questions, answers are requested for 1956. However, a major purpose of this questionnaire is to measure change or trend.

   Therefore, on questions asking for figures and statistical data, if 1956 was an unusual year, such as one affected by mergers, consolidation or expansion so that information is difficult for you to obtain, please feel free to substitute 1955 or 1957.

   On questions regarding policies or practices, if there was a major change of a policy in question during the years 1954, 1955, 1956 or 1957, please use the year preceding the change as the basis for answering questions related to that policy.

   Whenever you use a substitute year, please indicate so.

3.

4.

5.

A
researc
these.

2. Please check carefully to insure completion of the questionnaire, this is to see that all answers are filled in, especially those from other departments, unless the information is unavailable.

3. If additional space is needed for any answers, or if you wish to make additional statements, please feel free to use the reverse side of the page. Merely identify the statement by the question number.

4. If practices or policies vary in your company please answer the questionnaire in terms of your prevailing practice or of your general policy.

5. It is our request that this questionnaire be executed by line executives at the policy level of the sales organization.

We thank you most sincerely for your cooperation.

An advance copy of the survey results as well as a report of the research will be sent to participants. We are certain you will want these.

A. About

and

1. In

ma

mi

2.

3. Di

de

sa

4.

B. Abou

5. Di

fo

6.

C. Now,

7. Di

de

8.

*Please

identif

made a

poses,

the pos

	1956 period	Present
A. About the sales job and the inexperienced salesman		
1. In hiring an inexperienced salesman, what did you consider the minimum educational requirement?	High school ☐ . . . . ☐ Part college ☐ . . . . ☐ College grad ☐ . . . . ☐ Post grad ☐ . . . . ☐ Other: please specify-	
	_____	_____
2. What education did you consider desirable?	Please specify level:	
	_____	_____
	Please specify type (i.e., whether and how much pharmacy, business administration, liberal arts, etc.):	
	_____	_____
	_____	_____
	_____	_____
3. Did you use a separate written job description* for inexperienced salesmen?	yes ☐ no ☐	yes ☐ no ☐
4. When did you last revise this job description?*	_____ year	
B. About the field salesmen's supervisor		
5. Did you use a written job description* for the field salesmen's supervisor?	yes ☐ no ☐	yes ☐ no ☐
6. When did you last revise this job description?*	_____ year	
C. Now, about your experienced salesmen		
7. Did you use any written job description* for salesmen?	yes ☐ no ☐	yes ☐ no ☐
8. When did you last revise this job description?*	_____ year	

*Please supply a copy of each job description for each period, if one used, identifying by date. Please define "job description" as a written analysis, made available to all concerned, of a sales position encompassing the purposes, objective, duties, responsibilities, methods, and/or authorities of the position. Thank you.

9. W
ti
th

10. W
fo
in
fa
e

11

12

9. What was the percentage distribution of time that you desired of these salesmen?

	1956 period	Present
Physicians	__%	__%
Druggists	__%	__%
Hospitals	__%	__%
Wholesale drughouses	__%	__%
Other	__%	__%

10. What training, formal or informal, for experienced salesmen was used in addition to training on products, face-to-face salesmanship, deals, execution of reports, advertising?

none ☐ none ☐

If used, please list subjects and explain, using reverse side to explain in full.

11. Please describe how your formal training, if any, of experienced salesmen has changed, if it has, over this period, i.e., changed regarding (a) purposes and (b) content (not training media or technique). _____

12. Please describe how your informal training (i.e., "work with" or other local training by supervisor) of experienced men has changed, if it has, over this period? _____

	1956 period	Present
13. Did you make any specific effort (other than through generalized training, general meetings, or generalized supervision) to control how the (experienced) salesman spends, or routes, his time?	yes ☐ no ☐	yes ☐ no ☐
	If yes, please explain, using reverse side to explain in full.	
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____
14. Did you require daily *reports?	yes ☐ no ☐	yes ☐ no ☐
15. Did you require weekly *reports?	yes ☐ no ☐	yes ☐ no ☐
16. Did you require any other regular, periodic *reports?	yes ☐ no ☐	yes ☐ no ☐
17. Did you require any other, non-periodic *reports?	yes ☐ no ☐	yes ☐ no ☐

D. Now, about your administration of salesmen

18. Was the frequency of personal, field supervisory contact with experienced salesmen up or down from the previous period?	up ☐ down ☐ same ☐
19. Do you in any ways consider your salesmen to be managers?	yes ☐ no ☐

20. If "yes", why and in what ways?
If "no", why not?

_____

_____

_____

_____

_____

_____

*Please supply a copy of each report, identified by date and by required frequency, in so far as possible. Thank you.

21. By
ate
pur

22. Did
and
sup
mi
his
cor

23. Ha
in
to
pre
per

** Please
sation
experi

*** Please
profits

	1956 period	Present
21. By what criteria did you evaluate experienced salesmen for purposes of compensation?**	Please check. If more than one checked, please number in order of importance.	
By total sales	☐	☐
By total sales quota or standard	☐	☐
By sales of particular products	☐	☐
By quota or standard for particular products	☐	☐
By ***margins on _____ (please specify)	☐	☐
Other: please specify fully and in detail (using reverse side to answer if necessary).		
_____	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐
22. Did you provide any marketing assistance personnel (in addition to his supervisor) on whom the salesman might call for aid in development of his territory or of particular contacts?	yes ☐ no ☐	yes ☐ no ☐
	If yes, please check below:	
	Sales or potential analysis ☐	☐
	Technical service ☐	☐
	Promotional aid ☐	☐
	If other, please specify:	
	_____	_____
	_____	_____
23. Have you had any increased interest in or given increased consideration to such marketing assistance (as in preceding question) since the earlier period?		yes ☐ no ☐

** Please note that for the purpose of this question the method of compensation is irrelevant. The question pertains to your explicit evaluation of experienced men on (and for) their jobs.

*** Please consider "margins" for this usage to include actual margins or profits, or transfer price, calculated or assumed margins, gross or net.

	1956 period		Present	
24. Have your salesmen shown any increased interest in such marketing assistance since the earlier period?			yes ☐	no ☐
25. Did you use expense budgeting in the allocation of or for the usage of	yes ☐	no ☐	yes ☐	no ☐

If yes, please check if budgeted

	for **district	for salesman	for **district	for salesman
Samples	☐	☐	☐	☐
Literature . . .	☐	☐	☐	☐
Deals, bonus or extra goods	☐	☐	☐	☐
Technical services . .	☐	☐	☐	☐
If other, please specify:				
_____	☐	☐	☐	☐
_____	☐	☐	☐	☐

26. What written production reports did you provide to your salesmen of their performance

Please check if provided to salesmen. Please specify frequency provided.

	Frequency	Frequency
1. Total dollar or unit sales	☐ _____	☐ _____
2. Particular products sales	☐ _____	☐ _____
3. Sales to each account	☐ _____	☐ _____
4. Sales to selected accounts	☐ _____	☐ _____
5. *Margins on _____ (please specify)	☐ _____	☐ _____
If other, please specify and explain fully (using reverse side if necessary):		
6. _____	☐ _____	☐ _____
7. _____	☐ _____	☐ _____
8. _____	☐ _____	☐ _____
9. _____	☐ _____	☐ _____

*Please consider "margins" for this usage to include actual margins or profits, or transfer-price, calculated or assumed margins, gross or net.

**Please define "district" as the administrative unit comprised of salesmen and the first echelon manager.

	1956 period	Present
27. If reports (see preceding question) provided to salesmen, which ones compiled and produced from your general office?	Please specify by number or write ALL: ___,___,___,___,___ ___,___,___,___,___	__,___,___,___ __,___,___,___
28. Did you use EDP (computer) production for any of these reports to salesmen?	yes ☐ no ☐	yes ☐ no ☐
29. Did you use formal evaluation interviews between the salesman and his supervisor (i.e., at regular intervals and with use of printed company *forms)?	yes ☐ no ☐	yes ☐ no ☐
30. If "no" to preceding question did you use informal evaluation interviews (i.e., without company forms even if at regular intervals)?	yes ☐ no ☐	yes ☐ no ☐

If "yes" to either of the preceding questions:

31. What was the frequency of such evaluation interviews?	Please specify quarterly, annually, etc.	
32. What did you consider the three most important criteria or subjects of evaluation included in these interviews?	Please list in order of importance (using reverse side to explain clearly if necessary):	

E. With regard to compensation

33. Regarding the total number of full-time pharmaceutical salesmen employed by your company, please estimate as accurately as possible the following information:

---

*Please supply a copy of each form identified by date and frequency. Thank you.

	1956	1961
What amount of money did the average man in the highest paid 10% of the sales force earn during the year?	_____	_____
What amount of money did the average man in the lowest paid 10% of the sales force earn during the year?	_____	_____
What was the average amount earned per man for the total sales force during the year?	_____	_____
34. Are any of your salesmen members of a union?	yes ☐ no ☐	yes ☐ no ☐
35. If yes, approximately what percent?	_____%	_____%

36. Also if yes, what, in your opinion was the reason for salesmen joining the union? (use reverse side if necessary)

_____

_____

_____

	1956 period	Present
37. Are salesmen expected to perform a specified number of calls per man per week?	yes ☐ no ☐	yes ☐ no ☐
38. Are automobiles used for travel? (If not, go directly to question 47)	yes ☐ no ☐	yes ☐ no ☐
39. If yes, have your policies* regarding purchase, use and reimbursement changed from the last period?		yes ☐ no ☐

*Please supply a copy of these policies, both those presently in force and those of the preceding period, if available. If the policies answer questions 40 through 46, omit them and go directly to question 47.

	1956 period	Present
40. Please check as to whether automobiles are:		
a. Company owned	_____	_____
b. purchased and owned by salesman	_____	_____
c. leased	_____	_____
d. other (please describe)	_____	_____
_____		
_____		
_____		
41. If purchased and owned by salesman, did your company assist him in purchasing the car?	yes ☐ no ☐	yes ☐ no ☐
42. If yes, please describe how the company assisted in purchase:	_____	_____
	_____	_____
	_____	_____
43. If automobiles are privately owned by the salesman, how are the salesmen compensated for the use of their auto? (check those which apply)		
a. flat allowance per mile	_____	_____
b. flat amount per month	_____	_____
c. combination amount per month plus allowance per mile	_____	_____
d. other (please describe)	_____	_____
_____		
_____		
44. If automobiles are "company owned," "leased," "other," or if the company assists in purchasing a car owned by the salesman, does the salesman have a choice of makes and models to drive?	yes ☐ no ☐	yes ☐ no ☐

	1956 period	Present
45. If yes, what makes and models were available to him? (use reverse side if necessary)		
46. How were these choices determined? (For example: "Men working with the company for more than five years may have their choice of any automobile up to and including a Pontiac Bonneville," etc.) (Use reverse side if necessary)		

Regarding questions 47 through 51: If you have written policies and procedures on compensation, please provide a copy. If the written statements contain all of the answers needed in questions 47 through 54, omit and go directly to question 55.

47. Regarding your present compensation program, please complete the following by placing a check mark in the relevant square for each group of salesmen in your company. (Under the column headings, if you separate your salesmen into more than two categories of "trainees" and "experienced salesmen," please specify them under the "other" headings and indicate their method of compensation separately. If compensation is optional with certain salesmen's categories, please state "optional" in the relevant squares under that category.)

Method of compensation	trainees	experienced salesmen	other	other
Salary only				
Salary plus commission				
Salary plus bonus				
Salary, bonus and commission				
Bonus only				
Commission only				
Drawing account with bonus or commission				
Other (please describe below)				

48. Please indicate, by placing a check in the rrlevant square, the method used in computing the bonus or commission to be paid:

Method computation	trainees	experienced salesmen	other	other	computation related to quota? yes	no
Percent of gross margin						
Percent of sales						
Bonus for each product category						
New account sales						
Profitability of sales						
Other (please describe below)						

49. Is the commission or bonus portion of your plan: (check one)
____a) related to identifiable and direct efforts of individual salesmen?
____b) pooled and then divided among the men?

50. If pooled, how is the pool divided?
____a) management judgment only.
____b) specific performance factors which are discussed with the salesmen.
____c) other (please describe) _____

	1956 period		Present	
51. Did you reimburse for meals and lodging expense?	yes ☐	no ☐	yes ☐	no ☐
52. If yes, did you specify fixed limits per day for meals and/or lodging?	yes ☐	no ☐	yes ☐	no ☐
53. Or, if yes, did your salesman have a budget for such expense?	yes ☐	no ☐	yes ☐	no ☐

54. Some companies provide items such as pension plans, life insurance, etc., free of charge to salesmen. Others enable salesmen to purchase the items at a reduced rate by special company arrangement or by sharing the costs of such plans with the salesmen. Please indicate with a checkmark in the appropriate squares whether the following items are provided for, or available to the salesmen. If yes, please indicate who pays for the items.

Provided for or available through company arrangements:	yes	no	Paid for by:		
			company	salesman	both*
Pension or retirement plan					
Hospitalization insurance**					
Insurance for Physician's fees***					
Life insurance					
Auto insurance					
Other (please specify)					

*If both contribute to the expense, please indicate the approximate proportions of contribution by giving the percent paid by the company.

**Hospitalization insurance is defined to mean an insurance policy which covers the patient's costs for rooms, services, and diagnostic and therapeutic facilities while hospitalized. An example would be the Blue Cross plan.

***Insurance for physician's fees is defined to mean a policy which covers physician's, surgeon's and specialist's fees while hospitalized or in emergencies and excepting routine office calls. An example would be the Blue Shield plan.

Regarding questions 55 through 80. These questions are in regard to attitudes and opinions on salesmen's compensation. Consequently, they must be completed by a line sales executive at the policy level.

When completing the following questions, please answer from your own personal point of view, rather than from the company's point of view or as an industry representative.

Immediately below each of the following statements you will find five letters, A, B, C, D, and E. Please read the statement and then circle letter "A" if you strongly agree, "B" if you agree, "C" if you are undecided, "D" if you disagree, and "E" if you strongly disagree.

55. An experienced and competent salesman thinks of opportunity rather than security of income.

A B C D E

56. The experienced and competent salesman is not concerned regarding week-to-week or month-to-month fluctuations in earnings, but concentrates on total annual earnings.

A B C D E

57. Salesmen as a group are generally less concerned with security of income than are other employee groups.

A B C D E

58. The important factor is not security of income, but rather, the salesman's self confidence of his sales ability. If his selfconfidence is high, his concern with security is low and vice versa.

A B C D E

59. Our company sales compensation plan is too concerned with security.

A B C D E

60. There is some minimum amount of security needed in any sales compensation plan. If this minimum amount is not provided, one finds it very difficult to hire and retain good salesmen.

A B C D E

61. Too much security of income will cause poor salesmanship.

A B C D E

62. Salesmen in the ethical pharmaceutical field today have too much income security.

A B C D E

63. A good sales compensation plan always provides an incentive to the salesman to earn more money.

A B C D E

64. Money is probably the strongest incentive affecting salesmens' performance.

A B C D E

65. One of the major problems in using a commission plan is that it tends to cause salesmen to "oversell" the customers.

A B C D E

66. Sales contests tend to undermine the professional attitude toward selling.

A B C D E

67. An automobile is an extremely important incentive to salesmen.

A B C D E

68. A sales compensation plan should not have a maximum earnings limitation. The salesman should be able to earn as much as he is able, even if it is more than the sales manager's income.

A B C D E

69. There is probably too much emphasis on incentives today; either a man is an interested and effective salesman or he isn't, and incentives won't change his behavior very much.

A B C D E

70. Group incentives such as a bonus pool or shared commissions are more meaningful to the company because selling is a team effort.

A B C D E

71. Contests, properly designed and operated, are more effective as an incentive than are commission or bonus plans.

A B C D E

72. Non monetary incentives such as free trips to Europe, outstanding salesman of the year awards, etc., tend to be more important to salesmen than cash incentives.

A B C D E

73. What a manager considers as being a fair and equitable compensation plan is often different from what a salesman considers as fair and equitable.

A B C D E

74. To be fair, a compensation plan should provide a salesman with earnings which are at least equal to the average earnings of salesmen in his industry.

A B C D E

75. Men of equal productivity should receive equal pay regardless of time with the company.

A B C D E

76. A guaranteed minimum income is fair to the salesman, and a guaranteed maximum is fair to the company.

A B C D E

77. A salesman should not be allowed to earn an income which is equal to or greater than his superior, because the salesman does not have managerial responsibilities to perform.

A B C D E

78. A sales compensation plan should provide additional income for additional investments of the salesman's leisure time in such activities as night school, extra training sessions, special duties, etc.

A B C D E

79. In the final analysis, it is measurable sales results that should determine a man's income, and not years of service, amount of responsibility, degrees received in college, or any other basis which is not directly related to sales results.

A B C D E

80. Please rank the following criteria in what you feel to be their order of importance regarding an effective compensation plan:

a. ease of administration _____
b. flexibility to meet changing requirements _____
c. fairness to company and salesmen _____
d. understandable to salesmen _____
e. incentive to salesman to perform his job requirements _____
f. provide security of income to salesman _____
g. expense of computation and operation of plan _____
Other (please specify):
_____ _____
_____ _____

F. Finally, about your company:

(All data are strictly confidential. The following questions are only for the purpose of classifying data from the questionnaire so that a meaningful analysis can be made.)

	1956	1961
81. Total number of pharmaceutical field salesmen employed end of year?	____	____
82. Number of new salesmen hired during year?	____	____
83. Number of salesmen leaving a sales job for any reason during the year?	____	____

	1956	1961
Of these approximately what percent		
a). were promoted or transfered out of salesman job?	____	____
b). left company voluntarily?	____	____
c). left company through retirement?	____	____
d). left company for other reasons (e.g. released, forced to leave due to poor health, etc.)?	____	____
84. Number of immediate field supervisors of salesmen, end of year?	____	____
85. Total number of "districts" (a district being defined as the administrative unit comprised of salesmen and the first echelon manager), end of year?	____	____
86. What was your salesmen's expense as a percentage of sales (using the same basis of calculation for each year)?	____%	____%

87. If there was a change of percentage in your answer to the above, please comment on the principle causative factor: _____

_____

_____

88. What was your total, direct field expense as a percentage of sales (using the same basis of calculation for each year)?	____%	____%

89. If there was a change of percentage in your answer to the above, please comment on the principle causative factor: _____

_____

_____

90. Did your company keep records on the total number of pharmaceutical invoice lines?	yes☐ no☐	yes☐ no☐
91. If yes, what was the total number of pharmaceutical invoice lines?	____	____

	1956	1961
92. Did your company record the total number of pharmaceutical orders?	yes ☐ no ☐	yes ☐ no ☐
93. If yes, what were these totals?	____	____
94. Approximately how many different pharmaceutical products are sold by your company?	____	____
95. What percent of the total pharmaceutical sales for each year (1956 and 1961) was accounted for by the two major products of that year?	____%	____%
96. What percent of the total pharmaceutical sales for 1961 was accounted for by the two major products of 1956?		____%
97. Total pharmaceutical sales?	$____	$____
98. What was your fiscal year pharmaceutical net profit?	____	____
99. What was your company's total reported net profit?	____	____

100. Please check which of the following methods of distribution are used by your company, and approximately what percent of the company's total pharmaceutical sales are distributed by each method:

(Check)	Method of distribution	Approximate percent distributed by this method
____	a) Direct to independent retail druggists	____%
____	b) Direct to physicians	____%
____	c) Direct to hospitals	____%
____	d) Direct to chain retail druggists	____%
____	e) Through wholesale drug houses	____%
____	f) Other	____%
		100 %

101. What is the title of your position with your company? ____

____

Signed (if you wish) ____

APPENDIX III

COMPENSATION PLANS USED

Obtaining accurate information on compensation plans used by ethical pharmaceutical firms proved to be more difficult than first expected. This was due to two major complications which became evident in pretest interviews: (1) terminology such as bonus and commission did not have universal meanings among sales managers and thus tended to obscure as well as reveal; and (2) actual compensation plans in use were more complex than one would expect from reading the published literature on this topic. Consequently, pursuing in depth respondents' replies during the interview was an invaluable aid in coping with these two difficulties.

To understand the different methods used in compensating detail salesmen, one must first look at the problems involved in designing any sales compensation plan for an ethical pharmaceutical firm.

The first problem confronting the sales executive is that of attributing sales results to the efforts of individual salesmen. The basic purchase decision in ethical pharmaceuticals is set by the physician when he prescribes a pharmaceutical item for a patient. This decision is the basic focus of all ethical pharmaceutical marketing research and sales efforts. However, the ultimate dollar sales transaction comes when the patient purchases the prescribed pharmaceutical and the location of this purchase may or may not be in the same salesman's territory as was the prescribing physician. This is especially true in large metropolitan areas where a person may see

his physician in the center of the city and purchase the needed pharmaceutical at his local suburban pharmacy or vice versa. Thus, actual prescription sales within the territory may not represent a salesman's effort or effectiveness.

The above problem is further aggravated by the method of distribution used. If one assumes that prescription sales through retail pharmacies roughly approximate the detail salesman's effort and effectiveness, how does one atrribute sales when the pharmaceutical firm does not ship directly to retailers but instead, ship to wholesalers? The wholesaler's trade area generally is not the same as the detail salesman's territory, and without sales figures to retail pharmacies in a given territory, reliable sales figures attributable to the salesman's efforts are difficult to isolate.

A third problem is that of the product. If there is no effective substitute for a product for the treatment of a particular disease, sales will be a function of how the doctor became aware of the product and the incidence of the disease in a given salesman's territory. Is a commission or bonus on sales of such a product justified?

While the problems are by no means limited to the three given above, the major differences in compensation can be accounted for by these three. For example, a firm with many competitive products, which sells and ships directly to all retail outlets and excludes the use of wholesalers, would be in the best position to pay individual men for individual results. The question of whether this would be accomplished by salary and merit increases or some form of sales or profit incentive is a separate question and depends upon the firm's policy in such matters.

Similarly, a company which distributes through wholesalers only and which derives most of its sales from a few competitive products probably has the greatest immediate need for a compensation program which pays individual salesmen for individual performance.

Twenty-six of the respondents elected to use a salary plus incentive plan for compensating their detail salesmen. Contingency table analysis indicated that there was no significant relationship between method of compensation and the firm's mean compensation payment. These specific methods of compensation are as follows:

1. Salary plus bonus. Of the six firms using this plan, three computed the bonus as a management-determined fraction of the firm's rate of return, which was distributed among the men as a percentage of salary. One computed the bonus as a management-determined fraction of the profitability of a district. The amount of bonus was then apportioned among the men in the district. Two firms used complex procedures whereby districts were given sales quotas and the bonus pool was determined by a percentage of district sales on specific products up to a specified limit. In addition, one firm gave bonuses on specific products to the individual men who exceeded a certain quota. In both cases, the district bonus was distributed by management judgment of relative performance.

2. Salary plus bonus plus commission. Of the five firms using plans which fell in this category, four paid commissions on sales in individual territories. Of these four, one paid a length of service bonus, two gave a bonus for judged over-all performance, and one distributed wholesale sales commissions as a bonus. The fifth firm used an unusual double bonus arrangement. First, a budgeted bonus pool for the district is apportioned among the men according to the district manager's judgment. In addition, a district sales quota is established and all sales over the quota receive a commission. This commission has a maximum earnings limit and is used as a second bonus pool which is again allocated by the district manager's judgment.

3. Salary plus commission. Of the fifteen firms using this form of plan, ten used group commission for wholesale accounts and special metropolitan areas. Of these ten, four divided the commissions among men primarily according to management judgment. Three of the fifteen firms using a salary plus commission plan specified all commissions as group commissions. Of these three, one divided the commission by management judgment, and one had an elaborate point system which allowed men to compete against each other for shares of the group commission.

To illustrate the nature of compensation programs, four typical programs are included as Exhibits 4, 5, 6 and 7.

EXHIBIT 4: Example of Salary Incentive Compensation Program

All Detail Salesmen are compensated on a straight salary basis.

Salary range for Detail Salesmen is:

$6,200 to $8,600 per annum.

The salary range of Senior Detail Salesmen is:

$8,000 to $11,100 per annum.

Salary reviews for all Detail Salesmen will be administered by the District Managers. Reviews take place in the first month of a calendar quarter before anniversary of employment.

To attain the classification of Senior Detail Salesman, a salesman must have:

1. Been employed a minimum of 5 years as a Detail Salesman.

2. Placed in the top two-fifths of percentage of district or national quota 50% of the time for the preceding three year period (preceding six, half-year periods) or by District Manager evaluation placing him in the top 30% of the District at least 50% of the time in the immediate preceding three year period.

3. District Manager recommendation for Senior Detail Salesman classification.

4. Regional Manager's approval of the District Manager's recommendation.

Notice that such a plan, on the surface, is a simple and straightforward plan. Furthermore, it is administratively simple, can be budgeted accurately in advance, regardless of sales volume estimates, and can be kept in line with other salaries throughout the entire company. However, this is somewhat deceiving as the effective administration of salary incentives requires very sophisticated evaluation measures and personnel procedures if it is to maintain an effective incentive value for total job performance.

EXHIBIT 5: Example of a Compensation Program Paying a Salary Plus Commission on Particular Product Sales

In this program, there is a salary paid to each Detail Salesman plus a commission on specific products. The procedure for the commission part of the plan is as follows:

Approximately three weeks after the end of each month, each participant in the Commission Plan will receive a report called "Gross Sales By Product Classification." This report shows the participant the month's sales for each commission product. As a quick check to see how he fared, he compares his month's sub-total with each month's commission base.

His total commission base is one-half of the total net sales made by him during the previous twelve-months of all products designated as "commission products" and listed on the Commission Sales Sheet. Commission bases are adjusted when indicated because of territory changes.

A new commission plan starts every April and October of the calendar year. It offers each participant an opportunity to earn extra income in return for extra effort that produces increased sales on the commission products.

The commission rate is 5%. The Commission Plan pays the participant 5% ($50 for every $1000) that the participant increases the total net dollar sales of the commission products over commission base--this base having been determined by the participant's past selling achievements.

The Vice President--Marketing has the sole privilege of awarding a salesman the opportunity to become a participant in the Commission Plan. The award is made only with the recommendation of the District Sales Manager and ordinarily after the salesman has established his own commission base.

The percentage a salesman receives of the commission earned by a group or a Sales Team is assigned by the District Sales Manager. It is awarded according to each individual's contribution in relation to the contribution made by the other members of the group or team during the commission period.

Salesmen who are Commission Plan participants and have earned a commission will receive their checks approximately three weeks after the end of a commission period.

Along with the commission check each participant will also receive a Commission Plan Summary Report. The report will show:

1. The gross sales of each commission product for the six-month period.
2. The total gross sales of all commission products.
3. Total returns and allowances on commission products.
4. Total net commission sales of commission products.
5. Total commission base.
6. New product credits.
7. Difference between the total net sales on commission products and the commission base (NC opposite the figures means the sales were less than commission base and hence no commission has been earned).
8. The amount of commission earned (5% of the difference between the total net sales on commission products and the commission base--plus new product credits).

In theory new products should not become commission products until a participant has established his own commission base on the new product (12 months' sales). However, occasionally a new product is designated a commission product before participants have been able to establish a commission base for it. In such instances, an artificial commission base is assigned the product, this being a percentage of actual sales. For instance, if a new product becomes a commission product at 100% of sales, the participant would earn 5% of the total sales of the product made during a commission period. If a new product becomes a commission product at 50% of sales the participant would earn 5% on 50% of the total sales of that product during the commission period.

The total sales of products not listed as commission products are entered on the lower portion of the Commission Plan Summary Report. Although they are not commission products on this plan they do count in total sales and have a very important bearing on the progress of a territory.

Note that this program requires all the evaluation procedures of the salary incentive program, and, in addition, requires special administrative machinery to operate and evaluate the commission program. Similarly, it is quite possible that with less than highly competent management, neither the commission nor the salary portions of this program will operate effectively.

EXHIBIT 6: Example of Compensation Program Paying a Salary Plus Commission on Weighted Product Sales over Quota

In this program, the salesman is paid a salary plus a commission on weighted sales. The weights and procedures are as follows:

I. Weighting

Specialty products	1.0
Competitive products	0.5

Following incentive rates will apply:

Weighted Sales Per Man	Incentive Rate
Up to $150,000 Total Wtd. Sales	5% on vol. over comm. base
$150,000 - $200,000	4½% " " " " "
$200,000 - $250,000	4% " " " " "
Over $250,000	3% " " " " "

II. Salary Range $4800 - $5400

Real salaries may be paid to $5,400 maximum for a $36,000 base. Any salary increases given within this range would be based upon merit and would be real salary increases. Salary increases within this range will not be "capitalized" in higher commission bases. Minimum commission base will be $30,000 for the men presently at $5,100 salary with sales less than $40,000 per man.

Normally, a new man joining the company is not eligible to participate in the commission plan until after he has completed one full quarter. After he has operated for one full quarter, the new man will be entitled to whatever share of the commission the District Manager feels is warranted by his productivity.

Above the minimum $36,000 base, commissions may be capitalized in higher salaries as follows:

Salesman's Wgt. Sales	Commission Base	Commission Payment	Maximum Salary at Commission Base	Total Compensation on Weighted Sales
$30,000	$30,000	$ 000	$5,100	$5,100
40,000	36,000	200	5,400	5,600
50,000	42,000	400	5,700	6,100
60,000	48,000	600	6,000	6,600
70,000	54,000	800	6,300	7,100
80,000	60,000	1,000	6,600	7,600
90,000	66,000	1,200	6,900	8,100
100,000	72,000	1,400	7,200	8,600

Changes in commission bases for capitalization of commission into higher salary will be related to fiscal year weighted sales. Capitalization of commission into higher salary may take place during the fiscal year providing it is at the beginning of a fiscal quarter and it is related to the past fiscal year weighted sales. In no event is it permissible to "capitalize" on current year sales increases.

III. Capitalization in Group Territories

Weighted sales are reduced to a per-man average. This per-man average is determined by dividing the territorial weighted sales by the number of regular salesmen charged to the group. If a territory is unassigned temporarily, it is still charged to the group.

The average weighted sales per-man determine the average commission base required per-man and the average maximum salary permissible per-man.

Individual salaries may vary above or below the amount called for by the base as long as the total does not exceed the maximum permissible. This provides flexibility desired to reward the better salesmen with larger salaries. It also makes it possible to divide the group commission more equitably.

Replacements within the group: if an experienced man is to be a replacement within a group, he could be offered a salary up to the amount determined by the group's existing base.

IV. Inherited Commission Bases

Inherited commission bases will be established according to the same schedules provided for capitalization of commission to salary as shown in II. above.

Normal starting salary should not exceed $5,400 (if weighted sales are $50,000 or more). However, a man may be given a higher starting salary up to $5,700 provided his commission base is $6,000 more than the schedule indicates. (For example, to hire an experienced salesman.) Sales in a territory are $60,000 for a $48,000 base (base salary $5,400); you could with Management approval pay $5,700 salary for a $48,000 base. In addition to the above, a man's sales may be "capitalized" in increments of $300 per year if his sales increases so indicate.

Any salesman who inherits a territory is eligible for the full salary within a five-year maximum period.

Due to obsolescence of products the sales become the efforts of the work of the man who inherits the territory.

V. Real Salary Increases

Salesmen are eligible for merit increases provided the commission base of these salesmen is higher than the base salary he now receives. For example: $48,000 base--$5,700 salary; for this base he can receive $6,000. To effect such an increase, a regular salary raise form has to be completed by the District Manager, forwarded to the home office, and approved by the General Sales Manager.

VI. Introduction of New Major Specialties

While the preceding plan is fair and equitable, it is, of course, impossible to accurately predict conditions in the future. Therefore, with the addition of new major specialties, commission bases will be uniformly increased and/or weighted sales will be revised. Management will project a per-man dollar figure to be added to the commission base immediately upon the release of a major specialty or set the weighting upon introduction of the new product.

It should be noted that this plan, while subject to the same general criticism of the salary plus commission on specific products, is considerably more flexible, can be arranged by weights corresponding to profit contribution per product, and emphasizes a more complete sales performance than the former program.

EXHIBIT 7: Example of Compensation Program Paying a Salary Plus a Bonus Based on Profit of the Sales District

A modified form of profit will be the basis for this compensation program. Compensation will be earned on the basis of "district profit," rather than sales volume.

District profit will be defined as follows:

Gross sales for the district		$ xxxxxx
Less:	Deductions from gross sales	xxxx
	Direct selling and administrative expense	xxx
	Direct cost of goods sold	xx
	District Profit =	$ xxxxx

In order to keep all of the factors affecting "district profit" within the control of the Marketing Division, a budgeted direct cost of goods sold figure will be used for every product and will remain fixed for the year. This will eliminate any effect of favorable or unfavorable manufacturing performance.

Other expenses beyond those listed above which affect the actual profits such as product freight, distribution expense, etc., will not be considered in determining "district profit." Again, these expenses are beyond the control of the Marketing Division and, therefore, are excluded.

Each district will operate on a single commission rate which will be assigned on January 1, and be in effect for the entire calendar year. At the close of business in December, the district profit total, multiplied by the district commission rate, will reflect the total amount of compensation money earned by each district.

Each District Manager will receive a monthly report showing the "district profit" for the month and the year to date. This will enable the District Manager to issue progress reports to the field.

Eighty percent (80%) of the total earnings of the district will be paid in relation to the number of base shares assigned to each salesman. These base shares are derived by taking the average monthly salary of a salesman and dividing by 10. Base shares are computed and salaries averaged at the end of the year on the basis of actual salary earnings. Consequently, salary increases can be scheduled for any time of the year.

Example: If, on January 1, a salesman's salary was $460 per month, and on September 1, he received an increase to $500, his salary earnings for the year would total $5,680. This total, divided by 12 gives him an average monthly salary of $473. Consequently, his number of base shares for the year would be 47, since partial shares are dropped when computations are made.

The total number of base shares in the district, divided into 80% of the total district's earnings, will determine the base share value. This base share value, multiplied by the number of base shares held by a salesman, will determine his base share earnings.

The remaining twenty percent (20%) of the total district earnings will be divided by the total performance points earned within the district to determine the incentive point value. The number of incentive points earned by a salesman will be determined by his District Manager, using an incentive evaluation form, a copy of which is attached. The incentive point value, multiplied by the number of incentive points earned by a salesman, will determine his incentive point earnings.

Base share earnings are added to incentive point earnings to arrive at the total earnings of each salesman. The difference between the total earnings of the salesman and the salary paid to him during the year will be his annual bonus. Of course, if the salary paid to him exceeds his total earnings, nothing will be deducted!

Only one year-end determination of earnings will be made and only one year-end performance rating will be submitted to the Home Office by the District Manager.

Each man will draw from his district's earnings, only the amount which he has earned under the Plan. Any over-payment to men who earn less under the Plan than they actually received in guaranteed salary, will be paid by the Company. In other words, the Company stands the loss, to a great extent, for any sub-standard performances within the district and this enables the above-average performers to receive more closely what they have justly earned.

Eligibility--All men (this includes salesmen, special representatives, and sales supervisors) on the payroll on January 1, will participate fully in the Plan. All men (whether replacements or filling new non-budgeted jobs), hired after January 1, will not be eligible to participate in the Plan until January 1 of the following year. Any man on the payroll on

January 1, who, during the year, is transferred into a new manpower or non-budgeted job, either within the same district or to another district, will not participate in the Plan beyond the effective transfer date, and any incentive payment adjustments will be paid from the Sales Manager's Reserve Fund.

Reserve--There will be a fixed reserve of one base share per man per district. All base share reserves will go to the District Reserve Fund to cover the expenses of sales contests, sales awards, etc. The number of reserve shares will be subject to change each year.

Base Shares--The number of base shares assigned to a man will be in direct proportion to his salary up to the maximum salary level. There will not be an increase in base shares without a corresponding increase in guaranteed salary.

Guaranteed Salary--Guaranteed salary increases will follow the schedule listed below. Such increases will be based on performance and the recommendation of the District Manager and can be scheduled for any time during the year.

Guaranteed Salary Step Schedule:

$400	425	460	500	550	600	650

Terminations--Any salesman terminating during the course of a year will be rated by his District Manager on the date of termination and this performance rating will be forwarded to the Home Office along with the usual termination file. At year-end, the salesman's base shares and his incentive shares will be computed on a pro rata basis. If his total earned compensation, as computed at year end, exceeds his salary for the time employed, he will be paid accordingly. Such a payoff will be made at year end when they are made to everyone participating in the Plan.

The difference between budgeted salaries (which are used to determine the commission rate) and actual salaries paid, resulting from terminations and replacements, etc., will be deducted from the total earned compensation of the district prior to computing the individual payoffs.

In addition, a pro rata portion of the amount of money budgeted to cover the incentive share of the terminating or transferring salesman (this amount is determined each year in the Home Office when the commission rates are being established) will be deducted from the total earned compensation of the district prior to making the individual computations.

The above differences, when withdrawn, will revert to the Sales Manager's Reserve Fund to the extent not offset by overdraws.

Unanticipated Product Shortages--Should an unanticipated product shortage occur during the year, the Sales Manager will promptly inform the District Managers of these shortages, so that they can shift sales emphasis to other products. Thus, when sales do not approach expected levels in one product area, the difference can be made up to a great extent in other product areas.

Epidemics, Unanticipated New Products, Etc.--The right must always be reserved to make special provisions, when heavy sales of a non-competitive item or unanticipated new products seem to indicate that this is the fair thing to do. Generally speaking, however, it is expected such situations will be rare and it is desirable that any such provisions be announced on or before January 1, when the Plan for the current year goes into effect.

Note that this plan is extremely flexible, emphasizes the total job and is similar to the salary incentive plan (Exhibit 4) above in that it requires very sophisticated evaluation measures and personnel procedures.

APPENDIX IV

DETAIL SALESMEN'S JOB DESCRIPTION

A job description has many uses, some of which are: (1) an aid in selecting prospective employees; (2) an aid in designing and operating the employee training program; (3) a basis for designing compensation programs; and (4) a basis for developing evaluation procedures. While the above listing does not exhaust the number of uses of a job description, they are the four main uses of operational importance. All four are related directly to the personnel management functions of sales management. And, as one function of personnel management procedures is to improve precision in the four areas listed above, one might plausibly argue that the completeness and specificity of the job description is an index of management precision.

As a working document, the job description should include the following essentials: (1) a brief synopsis of the job and its position in the organization; (2) a specification of all job objectives, and the duties, authorities and methods to be used in achieving these objectives; and (3) a specification of responsibilities for conduct, company material, etc. A fourth essential item, although not always included as part of the job description, is the standards of performance section.

An analysis of detail salesmen's job descriptions revealed that only one firm adequately fulfilled all four essentials for a job description. Four firms fulfilled three of the four requirements, but fifteen firms fulfilled only two or less of the requirements. Finally, eight firms did not use a job description, although one firm claimed to have a job description which was not given to the men.

Exhibits 8 through 10 are specimen copies of the least complete job description used by a firm in the sample, an incomplete yet typical

job description, and the most complete job description used by a sample firm. For the sake of clarity, Exhibits 8 through 10 are job descriptions without standards of performance and Exhibit 11 is a specimen copy of a set of standards of performance. In all exhibits, the names, and items which would identify firms, have been omitted.

EXHIBIT 8: Specimen of the Least Complete Job Description in the Sample

Major Responsibility

To produce the maximum amount of profitable sales of company products in his assinged territory.

Report to

District Sales Manager

Responsibilities and Functions

1. Plan and organize sales effort in assigned territory in keeping with the company policy.

2. Maintains "live" territory records as directed by company.

3. Be completely familiar with the pharmaceutical market in his assigned territory.

4. Establish a call pattern on selected drug accounts, hospitals, clinics, physicians, physician supply houses and other potential customers.

5. Be completely familiar with all pharmaceutical line products and capable of presenting a motivating sales presentation to potential users.

6. Be proficient in the application of professional sales techniques in selling the company and company products.

7. Develop a sound relationship with physicians and customers; handle complaints to satisfaction of the customer and the company; maintain customers in good credit standing.

8. Keep all equipment and supplies issued by the company in good condition.

9. Keep informed concerning competitive products, prices and policies, forwarding pertinent facts to the District Sales Manager.

10. Cooperate with distribution services to assure efficient service to our customers.

11. Control expenses within budgets assigned.

12. Establish inventory control with customers to keep return goods to a minimum, particularly dated products.

13. Schedule hospital exhibits routinely in assigned hospitals. Attend conventions as directed by District Sales Manager.

14. Perform such other duties as directed by the District Sales Manager.

EXHIBIT 9: Specimen of Job Description
Typical of the Industry

Primary Responsibility:

The Detail Salesman is responsible for the specification and sale of company products and the enhancement of the general company image and franchise to the medical and drug trade audiences in his territory.

Reports to:

District Sales Manager

Supervises:

No one

Major Functions:

Within the limits of his approved operating program and the policies and procedures of the Division, the Detail Salesman is responsible for the fulfillment of the duties set forth below.

1. Develop and recommend both short and long-range, specific selling objectives for his territory.

2. Develop and recommend an itinerary for the selling period in conformance with the approved sales program, which will assure the most productive sales coverage of the territory.

3. Plan, at the close of each working day, the next day's work schedule, in keeping with the immediate selling conditions of the territory and the approved itinerary and selling schedule for the promotional period.

4. Carry out the approved selling plans by:

   a. Selling to and through drug trade outlets,

   b. Creating specifications through physicians,

   c. Selling to and through assigned hospital personnel.

5. Maintain records of all business activities to assure the availability of an accurate history of promotional efforts.

6. Report all business activity through specified reporting procedure.

7. Maintain an adequate inventory of literature, samples, and trade packages for the selling demands of the territory.

8. Maintain professional goodwill by appropriate personal example and by the use of an approved amount of entertainment of the call-list audience.

9. Attend company sales meetings and medical and trade conventions as assigned by District Sales Manager.

10. Keep informed on current methods and practices of pharmaceutical selling by continual study of promotional and sales literature and by attendance at prescribed meetings and seminars.

11. Keep informed of competitive practices within the territory and report these findings to District Sales Manager.

12. Assume responsibility for the effective expenditure of funds and use of materials and equipment as provided for the selling period.

13. Assume such other responsibilities as assigned by District Sales Manager.

EXHIBIT 10: Specimen of the Most Complete Job Description Excluding Standards of Performance

The Detail Salesman's objective shall be to sell company products to physicians, to retail pharmacies, and to hospital pharmacies in accordance with the company marketing policy.

Under the supervision of his District Sales Manager, the Detail Salesman shall have authority to take action consistent with company policies as outlined in the Sales Manual and other company publications and as directed by company management.

I. General

A. The Detail Salesman shall have complete knowledge of the company line and shall keep up to date at all times on product information.

B. The Detail Salesman shall also keep informed about competitors' products and promotional methods and shall report significant developments to the District Sales Manager.

C. The Detail Salesman shall keep abreast of medical and pharmaceutical information through current pharmaceutical and medical journals.

II. The Physician

A. The Detail Salesman shall maintain records giving the following information about each physician the salesman details:

1. Specialty (education and training experience)

2. Special interests

3. Best time to call

4. Hospital connections and degree of influence at hospitals

5. Products he uses in his office and the hospital; and products he keeps in his bag.

6. Medication he prescribes

7. Community and professional prestige

B. The Detail Salesman shall develop and maintain good relations with the following individuals associated with the physician: (1) secretary; (2) nurse; (3) receptionist; (4) laboratory technician; (5) elevator operator and other building personnel whose knowledge or assistance may facilitate his interviews.

C. The Detail Salesman shall prepare for his detail calls by:

1. Planning a daily schedule for physician calls, based on the detail quota and with thought given to the best time for calling on each physician.

2. Planning what products to discuss, assembling materials for this purpose, and organizing his presentation--in keeping with the company's promotion schedule and the individual interests of the physicians.

D. The Detail Interview

1. The Detail Salesman shall (1) be considerate of the physician's time, giving particular attention to an appropriate closing of the interview; (2) maintain flexibility in the interview in order to take advantage of the physician's interests; and (3) conduct himself in a manner that will enhance the physician's confidence in the salesman and the physician's respect for the company.

2. The purpose of the interview shall be to influence the physician to (1) prescribe company products to patients, (2) specify company products in the hospital; and (3) order company products for his office and house-call use.

3. The Detail Salesman shall present the following product information to the physician, employing whatever material will aid his purpose:

a. Name of product

b. Medical indications and contraindications

c. Advantages, including palatability and patient-acceptance.

d. Dosage and methods of administration

e. Appearance, strengths, and package sizes offered

f. Price range

g. Storage and stability

h. Availability

4. When requested to do so, the Detail Salesman shall take inventory for the physician and make adjustments for outdated items.

III. The Retail Pharmacy

A. The Detail Salesman shall develop a thorough knowledge of the retail pharmacy owner's interests, and his prestige with the medical profession. He shall also become acquainted with, and maintain friendly relationships with, all retail pharmacy personnel.

B. The Detail Salesman shall develop a knowledge of the prescribing habits of the physicians in the area of the retail pharmacy.

C. The Detail Salesman shall prepare and plan ahead for his calls by:

1. Planning for sales presentations in line with his detail efforts with physicians, and with proper emphasis on special sales promotion efforts.

2. Maintaining up-to-date forms and materials for use at the time of the call--including product-promotion aids which may serve the individual retail pharmacy.

D. The Retail Pharmacy Call

Responsibilities of the Detail Salesman shall be to:

1. Detail and sell the pharmacy on products scheduled for promotion.

2. Obtain orders for druggists' and physicians' preference item merchandise.

3. Determine in connection with each sale the pharmacist's preference of wholesale distributor.

4. Sell the "Company Policy."

5. Offer the pharmacist appropriate product-promotion aids.

6. Keep the Company Catalog up to date.

7. Check dated merchandise.

8. Handle "returned" merchandise.

9. Handle therapeutic and product complaints.

10. Make price adjustments.

11. Check stocks of company merchandise when possible.

12. Be alert to the proper protection of company prices and trademarks.

IV. The Hospital

A. The Detail Salesman shall call regularly on the hospital pharmacy--and on the purchasing agent, chiefs of staff and services, and administrator or superintendent when desirable. If a hospital has a director of education, this man shall be called on regularly.

In addition, the Detail Salesman shall make regular calls on hospital medical personnel, including pathologist, radiologist, anesthesiologist, etc.

Group or individual contacts with residents and interns shall be made.

Calls on the directoress of nurses and on supervisors of the surgical, obstetrical, medical, pediatric, emergency, and dietetics departments shall also be made.

B. The Detail Salesman shall comply with all hospital rules and regulations in his hospital contacts, giving special attention to company directives regarding Veterans Administration and other Government-supported hospitals.

C. The Detail Salesman shall develop a knowledge of the hospital's product needs in keeping with the types of patients treated, as well as a knowledge of the hospital's method of handling prescriptions and distributing medicinals to patients.

D. The Detail Salesman shall develop an appreciation of the internal working relationships of hospitals.

E. The Detail Salesman shall prepare and plan ahead for the calls, considering the time of contact, the product information to be presented, and the provision of aids and promotional materials.

F. Calls on Hospital Pharmacy (or Purchasing Agent, Etc.)

1. Such calls shall follow the lines of the retail pharmacy call, with great emphasis placed on bulk and contact sales.

2. The Detail Salesman shall distribute promotion material and blotters at appropriate locations in hospitals when permitted.

3. The Detail Salesman shall arrange for hospital displays at appropriate and convenient times.

G. Calls on Hospital Medical Personnel

1. In calling on specialized personnel, such as the pathologist, the individual physician's field of interest shall be given major attention.

2. In contacts with residents and interns, special and regular promotion materials shall be used.

3. The Detail Salesman shall be continually alert to possibilities for clinical research on company products by physicians in hospitals.

H. Calls on Hospital Nursing Personnel

1. The Detail Salesman shall provide nursing personnel with product information and shall present any available aids to the nursing and/or teaching staff.

2. The Detail Salesman shall make himself available for appearances before nursing or student groups.

V. Wholesale Distributors Assigned to Salesman

A. If a salesman is assigned specific responsibility for a wholesale distributor, the salesman shall advise the distributor and direct his efforts in order that mutual benefit may result to the distributor and to the company. This responsibility shall be carried out in accordance with the policies regarding wholesale responsibility.

B. The Detail Salesman shall maintain contacts with the wholesale house personnel, especially the buyer, providing information on company products, services, and policies. He shall influence the buyer to maintain adequate and properly balanced stocks of company merchandise.

C. The Detail Salesman shall be the connecting link between the wholesale distributor and other company salesmen in the area who do not have assigned responsibility for a wholesale distributor.

VI. Management of Territory

In order to accomplish his job successfully, it is essential that the Detail Salesman perform certain other duties and meet certain other requirements.

A. The Detail Salesman shall manage his territory in conformance with the ideals and objectives of the company.

B. Through personal development, the salesman shall strive for individual stature in his community which is in keeping with his position as "The Company" in his territory.

C. The Detail Salesman shall be alert for opportunities within his territory to further the company's interests as outlined below.

1. Obtain opening stock orders.

2. Make contacts with professional and trade associations, medical and pharmacy schools assigned to him, nurses' organizations, civic groups, etc.

3. Provide emergency service to physicians, retail pharmacies, and hospitals.

4. Arrange for student and professional guests to visit home office and manufacturing facilities in accordance with the company's current policies.

5. Develop a co-operative relationship with wholesale distributors' salesmen (even though the Detail Salesman may have no assigned wholesale distributor responsibility); and supply them with specific information which will aid them in selling company products.

6. Obtain information through physicians and other professional people in the territory which may provide leads for company research--and also, which will provide opportunities for clinical trial of items.

7. Submit ideas for promotional materials for new products.

8. Stimulate interest in likely candidates for employment with the company (either as salesman or in other capacities).

D. The Detail Salesman shall complete necessary paper work promptly and accurately. This shall include correspondence with the home and district offices, required company forms (with particular attention to the prompt reporting of territorial changes), and requested surveys.

E. The Detail Salesman shall prepare assignments for, and constructively participate in, district meetings and home office sales schools; also, wholesale distributor meetings when requested.

F. The Detail Salesman shall attend assigned pharmaceutical and medical meetings.

G. The Detail Salesman shall maintain satisfactory relationships with (1) other company salesmen, (2) his District Sales Manager, and (3) home-office personnel.

1. He shall co-ordinate his activities with those of all company salesmen in his area and co-operate with such salesmen to the benefit of all concerned.

2. He shall be accountable to the District Sales Manager for the interpretation and fulfillment of the responsibilities and authority of his position.

3. He shall request specialized information from the home-office on various problems--in accordance with the Sales Manual and as directed by the District Sales Manager. And he shall respond promptly and fully to requests made by the home-office.

EXHIBIT 11: Specimen of Standards of Performance Section of a Job Description

General Responsibilities

A detail salesman is responsible for the management and development of his territory. His primary purpose is to obtain a major share of the available markets for the division's products in his assigned area. He is accountable for conducting himself in a manner which will increase the prestige of the company with members of the medical and allied professions as well as the general public in his community.

Function	Standard
I. SALES RESULTS	
1. Profit Plan Objective	
Equals or exceeds realistic Profit Plan Objectives	Total sales results as shown on salesmen's monthly sales report.
2. Promoted Specialty Products	
Shows continuing progress on direct sales of promoted specialty products in accordance with the Division's marketing plans and objectives	When monthly tabulated reports of direct sales of promoted products show satisfactory progress.
3. Sales Incentive Levels	
Consistently exceeds sales volume required to earn incentive payments on any sales incentive program in effect.	When sales justify base salary paid and incentive payments are earned.
II. CALL ACTIVITIES	
1. Physician Calls	
a. Regularly contacts those physicians in his territory representing the greatest potential to the company.	Meets or exceeds assigned physician call objectives on those physicians representing the greatest potential to the company.

b. Provides complete and accurate information on products scheduled for promotion in accordance with profit plan objectives.	The degree of believability of presentation as shown by physician trial.
c. Solicits specification and use of promoted products.	When tabulations of promoted products show satisfactory progress.
2. Retail Outlet Calls	
Services recognized retail outlets in his territory. Solicits orders on a direct basis for sufficient quantities of the division's products to assure optimal distribution.	When distribution of the division products is adequate to meet the demand as required.
3. Hospital Calls	
a. Services recognized hospitals in his territory, on a planned call basis. Solicits direct orders for sufficient quantities of the division's products having hospital usage to assure optimal distribution.	When calls are made in accordance with the plan and distribution of the division's products having hospital usage is adequate to meet the demand as required.
b. Contacts house staff and ancillary personnel to furnish complete and accurate information on promoted hospital products.	When tabulations of promoted hospital products show satisfactory progress.
4. Government Agency Calls	
Services city, county, state, and federal agencies as required to assure optimal distribution of the division's products.	When sales of the division's products to these agencies, show continuing progress.
III. TERRITORIAL OPERATIONS	
1. Organization	
To be knowledgeable of the existing potential in his territory. To stay alert for any changes altering the	When reports are made on such conditions and approved changes initiated.

existing potential and to promptly take advantage of such changes.

2. Planning

a. Physician Call Planning

1. Selectively plans for each physician call based upon physicians' prescribing preference.	When his District Manager has received notification of advance planning and observes plans being followed.
2. Personalizes each presentation.	When District Manager observes personalized presentations while accompanying associate.
3. Allocates a minimum of 75% of working time to contacting those physicians representing the greatest potential to the company in his territory.	When reports of physician calls shows optimal coverage of those physicians representing the greatest potential to the company.

b. Outlet Call Planning

Plans to regularly contact those outlets in his territory which represent the greatest potential to the company.	When outlet calls do not exceed more than 25% of total working time.

c. Hospital Call Planning

Allocates sufficient time to hospital activities.	When he submits a specific plan for working products having hospital usage where promotional material is available.

IV. TERRITORIAL MANAGEMENT

1. Controls

Studies, analyzes and understands all sales and progress reports pertaining to his activities.	Improves in those areas where improvement is indicated by sales and/or progress reports.

2. Territorial Records

Keeps current and up-to-date records required for effective territorial management as specified by his District Manager.	When inspection by his District Manager shows all records required are complete and current.

3. Surveys, Reports, Orders, and Correspondence

Participates in special field surveys as requested. Prepares accurately and completely, reports, orders, and correspondence. Forwards these promptly.	When his handling of reports orders, and correspondence does not cause unnecessary work for others.

4. Trade and Public Relations

Handles situations which may arise in his territory in a manner which contributes to the prestige of the company.	When he has sufficient knowledge of and can skillfully explain company policies and philosophy to the medical profession, drug trade and public in his territory.

5. Special Promotional Activities

Makes full use of special programs, exhibits, films, etc., in his territory.	The frequency with which he takes advantage of opportunities afforded by special programs, exhibits, etc.

6. Collections

Assists branch operations in maintaining the accounts in his territory within established credit terms.	Gives attention to past-due accounts in his territory as required.

7. Sales Expenses

Handles the following in strict accordance with company policy:	
a. personal expenses	a. When personal expenses do not exceed standard allowances.

b. leased car expenses	b. When leased car expenses as shown are in line with lease-car expenses standards.
c. samples and promotional literature	c. When disbursement of samples and promotional literature are made strictly in accord with current government regulations and company policy.
d. sales equipment	d. When sales equipment shows only normal wear.
V. COMMUNICATIONS	
1. Keeps management informed on important company, trade, and business conditions encountered in his territory.	When the information forwarded is accurate and complete.
2. Keeps management informed on significant competitive activities in his territory. Regularly reports on the acceptance of promotional material, media, and company policies by members of the medical and allied professions.	When he routinely submits accurate reliable market reports from the field.
VI. COMPANY POLICY	
Understands and follows all company policies and governmental regulations pertaining to company business.	When his honesty and integrity are above question.
VII. PERSONAL	
Conducts himself and manages his activities in a manner which creates prestige for the company.	The absence of unfavorable comments from his area.
His appearance and manner are a credit to himself and the company	Maintains an appearance and conduct that will increase his acceptability.

Demonstrates a loyal, cooperative, dependable attitude toward his company and its management.	Promptly follows instructions and suggestions.
Pursues a course in self-improvement which will increase his ability to express his ideas.	Belongs to speaking improvement clubs. Studies, reads, and practices for self-improvement.

APPENDIX V

PERFORMANCE EVALUATION PROCEDURES

The questionnaire, as well as the interview procedure, attempted to identify evaluation criteria for two separate portions of the total evaluation process. The first was with regard to criteria with which the manager evaluated experienced men for the purpose of determining compensation. The second was with regard to criteria involved in a formal performance evaluation which is discussed with the detail salesman. It should be noted that the former evaluation must be made some time, whether formally or informally, as, essentially, it involves the question: "Is the firm getting its money's worth from detailman X?" The second, or latter, evaluation is different in that it presupposes several important items, two of which are: (1) there is some value in setting things down for the record and discussing them; and (2) there is some measure or estimate of total job performance.

Table 23 shows the replies of sales managers at the policy level regarding the criteria used to evaluate the detail salesman for the purpose of determining compensation.

Table 24 is a tabulation of what sales managers feel are the most important criteria for evaluating overall performance. Interestingly enough, regarding overall performance evaluation and discussion of rating with the man, in 1956 only eleven of the twenty-eight firms had a formal program while in 1962, twenty-one of the firms had a formal program.

In addition to identifying the criteria used in performance evaluation, copies of the forms and procedures used in evaluation were sought

from firms using formal programs. Specimen copies forwarded by sample respondents varied widely in their completeness and precision of measurement. Exhibit 12 illustrates an evaluation form oriented toward total performance and development. The general style of form is used by five of the firms in the industry and is apparently used as a field training device by several firms. Notice that the various measures are subjectively weighted by the person doing the evaluating, and the strongest criterion is the comparison of the man to past performance in general.

Exhibit 13, on the other hand, illustrates a more concise and objective method of evaluation which focuses on specific sales and job performance criteria. However, this method ignores the very important topics of improvement, development potential, behavior traits and quality of the detail selling process. To some extent, this method of evaluation is more adaptable to discussion with the salesman in that the criteria used are present, obvious, and measurable, while this is not the case for many of the criteria in the former method. However, the latter method of evaluation covers much less of the job than the former.

Table 23. Sales Managers' Rankings of Criteria Used to Evaluate Detail Salesmen Regarding Determination of Compensation

Criterion	Number of Sales Managers Ranking the Criterion as:					
	Most Important		Second in Importance		Also Used	
	1956	Present	1956	Present	1956	Present
Total Sales	13	5	3	4	7	15
Quota on Total Sales	10	8	2	6	2	5
Sales of Particular Items	2	5	2	3	6	10
Quota on Particular Items	1	4	3	7	3	2
Performance Appraisal	0	3	1	2	4	4
Call Coverage	1	2	1	1	2	3

Table 24. Criteria Used in Formal Evaluations

Criterion	Number of Firms Using at Present
Sales Results	15
Attitude	6
Personal Progress	5
Performance	4
Product Knowledge	4
Territory Coverage	3
Sales Ability	3
Planning Ability	2
Strong Points	2
Needed Development	2
Job Knowledge	1
Meeting Call Quota	1
Filing Reports	1
Observed Behavior	1
Personal Potential	1
Creative Ability	1
Motivation	1
Goal Achievement	1

EXHIBIT 12: Detail Salesman's Evaluation Procedure
Focusing on Total Performance and Development

INSTRUCTIONS FOR THE DIVISION MANAGER

The purpose of this form is to help you evaluate the strengths and weaknesses of your men. It is a tool for effective supervision and training, not for disciplining. Improvement in performance can be achieved only through fair appraisal and effective training.

This form will help you determine what additional training your men need. To complete this form--

1. Review the demonstrated performance of the salesman for whom this form is being completed.

2. Compare what he has done with what is required of him.

3. In the space following each question, jot down the answer which best describes his performance in relation to the question.

4. Summarize his strengths and weaknesses.

5. Outline a program for improving his performance.

Salesmen want to know how well they are doing their jobs and how they can improve. This evaluation form gives you an excellent opportunity to counsel with each of your men on his performance. After each Supervisory visit you do some counseling, and once a year it is worthwhile to sit down with a man and review with him his total performance. Below are a few suggestions for conducting this discussion:

1. Review all the facts which entered into your evaluation.

2. Organize a plan for conducting the discussion.

3. Arrange a time when neither of you is under a strain and hold the interview where you will not be interrupted. The morning is usually the best time.

4. Put the salesman at ease before starting the discussion.

5. Do not show this form to the man being counseled. Make notes on the points to be discussed and keep this outline in front of you.

6. Do not discuss past mistakes in an overly critical manner. Talk about future progress.

7. Counsel with the man each time you work with him. Bring up one new point during each interview. Avoid discussing too many areas requiring improvement at one time.

8. Give him an opportunity to challenge any evaluation. Change your opinion if he offers sufficient proof to warrant a change.

9. Keep your discussion friendly but impersonal. Do not put the man on the defensive.

10. End on a positive note. Let him know that the training discussed is an assignment he is expected to complete.

Remember that you are not discussing a man. You are discussing his performance. If you criticize, it is the man's performance that has slipped, not the man. He can look more objectively at his work than at himself.

JOB KNOWLEDGE

Describe the man's performance with respect to application of product information and company policies; and the degree to which he is well informed on pharmacology, physiology, diagnostics, therapeutics, competitive products, competitors' activities and market conditions in his area.

Number of Supervisory Visits in Past Year _____

1. What are his strong points?

A. Physician Detailing

B. Institutional Detailing
(1) Hospital

(2) School

(3) Industrial

C. Retail Detailing

D. Distribution

2. What are his weaknesses?

A. Physician Detailing

B. Institutional Detailing
(1) Hospital

(2) School

(3) Industrial

C. Retail Detailing

D. Distribution

SALESMANSHIP

Describe the man's performance with respect to his salesmanship ability. This should include his initiative and creativeness in the use of planned sales presentations, visuals and samples and his ability to talk in terms of the prospect's interest, overcome resistance and close the sale.

History of Sales Volume		History of Sales Budget		Variation
19	$	19	$	$
19	$	19	$	$
19	$	19	$	$

National Standing	District Standing
19	19
19	19
19	19
19	19

Selling Expenses:	Budget	Actual	Variation
Travel	$	$	$
Samples	$	$	$
Medical Meetings	$	$	$
Sales Meetings	$	$	$
TOTAL	$	$	$

Ratio of Expenses to Sales_____

1. What are his strong points?

2. What are his weaknesses?

3. Productivity?

   a. Physician

   b. Drug store

   c. Hospital

   d. Miscellaneous

   e. TOTAL

TERRITORY MANAGEMENT

Describe the man's short and long range planning, the degree to which he has adequate distribution, his territory records, the condition of his equipment, his routing and his promptness and accuracy in handling reports and correspondence. In short, consider how well he operates his territory in a business-like fashion.

Average No. Daily Physician Calls _____

Average No. Daily Hospital Calls _____

Average No. Daily Retail Drug Calls _____

Average No. Daily Total Calls _____

Number of Hospital Displays _____

Product Film Showings _____

Condition of Company Property _____

Automobile Cost per mile _____

1. Planning
   a. Master routing in advance. _____
   b. Adherence to master routing. _____
   c. Daily routing in advance. _____
   d. Adherence to daily routing. _____
   e. For good distribution at retail. _____
   f. For good distribution at wholesale. _____
   g. How well does he plan without close supervision? _____

2. Organizing
   a. Office at home. _____
   b. Records at home. _____
   c. Literature and samples in his office. _____
   d. Literature and samples in his automobile. _____

3. Controlling
   a. Are reports on time and accurate? _____
   b. Communication - Quality _____
   c. Communication - Quantity _____

PERSONALITY TRAITS AND PHYSICAL APPEARANCE

Describe the man's personality; i.e., what kind of a person is he. Describe his ability to get along with people and the degree to which he is a team worker. What do customers and other members of the company think of him? Describe his physical appearance and health. In particular, consider his motivation for his work, his drive, self-reliance, initiative, leadership qualities and ambitions.

1. Personality Traits

    a. Gets along with others.

    b. Team worker.

    c. Motivation.

    d. Morale.

    e. Cooperativeness.

    f. Enthusiasm.

    g. Takes criticism.

    h. Aggressiveness.

    i. Leadership.

    j. Drive.

    k. Open-mindedness.

    l. Hard worker.

    m. Self-reliant.

    n. Interest in work.

    o. Judgment as pertains to job.

    p. Punctuality.

2. Physical Appearance

    a. General physical.

    b. Neatness.

    c. Health - Days absent.

SUMMARY OF APPRAISAL

1. Considering all aspects of the man--his performance, personal qualities, application to the job, abilities, etc.--what are his:

    a. Outstanding abilities or qualifications?

    b. Areas requiring improvement or hindering his performance?

2. In your judgment, what is this man's potential?

3. What have you done to improve his performance?

4. What further action, training or experience is needed? What specific assignments should be made? (List in order of performance.)

DISCUSSION WITH THE INDIVIDUAL

Discuss the suggested program for improvement with the salesman. Come to an agreement on specific assignments and dates these assignments are to be completed. Counsel with the man on one point at a time. Counsel with him each time you work with him. Record in the space below the results you feel were accomplished during your interview. Keep this original in your possession but send a copy of any remarks made to the home office so they can be transcribed to the office copy.

EXHIBIT 13: Detail Salesman's Evaluation Procedure Focusing on Specific Sales and Job Performance Criteria

Evaluations of the Detail Salesman by the District Sales Manager will be on a semiannual basis and payments based on these evaluations.

The relationship of sales performance to job performance is:

75% sales performance + 25% job performance

SALES PERFORMANCE - 75%

Sales performance will be scored in the following classes of trade:

	Maximum	
I. Retail Sales		
a. Detailed Promotion Products	48 points	
b. Other Major Products	19 points	
Total Retail Maximum		67 points
II. Hospital Sales - Total Hospital maximum		5 points
III. Government Sales - Total Government maximum		3 points
Sales Performance - Total maximum		75 points

The report of product sales is the source of the necessary statistical information for evaluation in the Retail, Hospital and Government classification.

I. Retail Sales

Referring to the report of product sales under retail, note the upper section is grouped and shows the total dollar sales of this grouping as well as the objective and the percent of variance (above or below objective). This grouping represents the products being actively promoted during the six-month period and in most cases represents nearly 50% of the total territorial, district and regional volumes.

A territorial evaluation is determined by comparing the percent of variance against objective in the particular territory with the percent of variance in the man's own district (territorial achievement vs. district achievement). Points are awarded (48 or less) according to the achievement in this retail category.

The other portion of the Retail Sales Evaluation (19 maximum points) is determined by comparing the territorial performance against district performance as reported on the lower portion of the report under "Other Major Products." Again the percent of variance against sales objective is the basis of comparison. Points are awarded to a maximum of 19 points.

The sum of the points earned for these two categories is the total evaluation points awarded for the retail sales category.

II. Hospital Sales

The report of product sales is again utilized. Under "Hospital," compare the percent of variance (total hospital sales vs. sales objective) with the percent of variance of your own district achievement. This category will be awarded a maximum number of points, either 5 or 3, depending on sales potential and, of course, sales objective. Territories with smaller objectives and smaller sales potential will be rated at a 3 point maximum. Territories with no accounts will, of course, be rated 0 (no evaluation). Unused--not unearned--hospital points due to small volume or no sales will be shifted to retail points credits.

III. Government Sales

This category will be evaluated on the same basis as hospital sales excepting that the maximum points to be awarded is to be 3 points. As with the hospital ratings, a declining value is placed on small sales potential territories or on territories without government sales (3, 2, or 0). Again the unused points normally allotted to this category are to be shifted to retail point credits in the same manner as for hospital points.

JOB PERFORMANCE - 25%

As previously stated, the "Job Performance" section is scored up to 25 points maximum in the total evaluation, "Sales Performance" representing a total of 75 possible points.

During this present period, a new procedure for evaluating "Job Performance" is being introduced. By directing total effort toward these goals the company will more nearly approach acceptable performance in these important phases of the over-all work program.

"Job Performance" will be rated as follows:

	Maximum
I. Maintaining minimum 60/40 call ratio 60% MD calls to 40% Trade calls	5 points
II. Maintaining 6 or more calls per year on "A" doctors (3 times in 6 months)	5 points
III. Adherence to detailing program (product emphasis)	5 points
IV. Attention to Directives (all types) with particular emphasis on District Sales Manager assignments. Include appraisal of absenteeism.	10 points
Job Performance - Total Maximum	25 points

In appraising the number of points to be assigned in the several categories, by reference to the reports mentioned, an average of the over-all district performance will be the standard of comparison. In arriving at a fair average, the District Manager will scrutinize the entire report for the general pattern. One should not attempt to hit an average by dividing the total effort by the number of men in a district. One or two top-heavy performers or one or two extremely low performers would easily make the averages meaningless.

As the procedure indicates, the total evaluation of the individual representative represents a detailed examination into the sales performance and over-all job performance of each man on the sales team.

DETAIL SALESMENS' SEMI-ANNUAL EVALUATION REVIEW

Date_____

Name_____

Territory No._____ District_____ Region_____

Date of Employment_____

Period Covered: From_____ To_____

SALES EFFECTIVENESS

Retail Detailed Promotion Products	Retail Other Major Products	Hospital	Government	Total Points

Based on variations from objectives.
Rating Scale: As described by Regional Manager

District Averages					
Rep's Averages					

JOB PERFORMANCE

	Maximum Points	Rating
1. Allocation of Time Professional vs. Trade		
2. Physician Call Frequency		
3. Product Emphasis		
4. Attention to Directive		
Total Job Performance	25	

District Sales Manager

APPENDIX VI

COMPENSATION PAYMENT SURVEY

Obtaining accurate compensation information proved to be more difficult than expected. The first, or pretest, attempt used the following format:

38. Please indicate the number (or percentage of total sales force) of full-time salesmen earning a total yearly compensation of: (Please use W-2 form totals from company tax records.)

Total Compensation	No. of Salesmen (or percent)	No. of Salesmen (or percent)
$ 3,000 - $ 4,999		
5,000 - 6,999		
7,000 - 8,999		
9,000 - 10,999		
11,000 - 12,999		
13,000 - 14,999		
. . . . .		
23,000 and over		

However, this proved to be beyond the limits of cooperation as most firms did not collect their data in this manner. Thus, it was necessary to revise procedure for obtaining this data. The final questionnaire used the following question to obtain compensation payment data:

33. Regarding the total number of full-time pharmaceutical salesmen employed by your company, please estimate as accurately as possible the following information:

	1956	1961
What amount of money did the average man in the highest paid 10% of the sales force earn during the year?		
What amount of money did the average man in the lowest paid 10% of the sales force earn during the year?		
What was the average amount earned per man for the total sales force during the year?		

Even this question was a difficult one. However, the question was left with the sales manager to be forwarded to the appropriate accounting center, whether sales, payroll or general.

From the figures obtained, it is easy to compute the mean payment of ethical pharmaceutical firms. This is the sum of the overall average payments for a given year divided by the number of firms. Similar calculations can be made for the highest and lowest 10% of detail salesmen. Note that once the foregoing is accomplished, it says nothing about the average income of detail salesmen, as this can only be estimated by weighting the figures by the number of salesmen in the firm.

For example, take two firms, A and B, with A paying an average of $8,000 per salesman, and B paying $6,000. If A has 1000 detail salesman and B has 100, then the mean payment of a firm would be $7,000 and the average detail salesman's income would be calculated as follows:

$8,000 x 1000 salesmen = $8,000,000

6,000 x 100 salesmen = 600,000

$8,600,000

Average detail salesman's income = $\frac{\$8,600,000}{1,100}$ = $7,817.00

Similarly, the weighting process for the top 10% of detail salesmen is to take the figure given as the average payment to the top 10% and multiply it by one-tenth of the sales force (e.g.,: $\$10,000 \times \frac{722}{10}$ = $722,000); sum the figures obtained in this manner and divide by the sum of the one-tenth of sales force figures. The estimates yielded have been shown in Chapter III, Table 7 on page 26.

APPENDIX VII

INDUSTRY SALES AND PROFITS

As cooperation was almost non-existent from sample respondents on the question of profits, and sales could only be obtained by index for many of the firms, secondary sources were the only available estimates of industry figures. Probably the most valid industry figures, regarding ethical pharmaceuticals, are shown in Tables 8 and 9 of Chapter III.[1] Caution should be exercised, however, as a number of the firms included in obtaining the data are proprietary and not "ethical" firms.

Domestic ethical market share figures for the twelve largest firms in the industry are shown in Table 22, Appendix I, page 72.

Similarly, the Office of Research of the Nationwide Insurance Company asserts that:

> The twenty-two largest drug companies, largely in the ethical field, had sales of $2.3 billion, with a retail value probably about $3 billion. The total production of all drugs, prescribed and non-prescribed, is valued at approximately $4 billion . . . Despite the vast array of firms in the field, fewer than thirty control 90 percent of the total market and nine large firms [corporations with several firms such as American Home Products Company] had 60 percent of the total sales in 1959.[2]

---

[1]Table 8: Domestic Pharmaceutical Sales Figures, p. 29; and Table 9: Profits After Taxes, 1949-1961, p. 30.

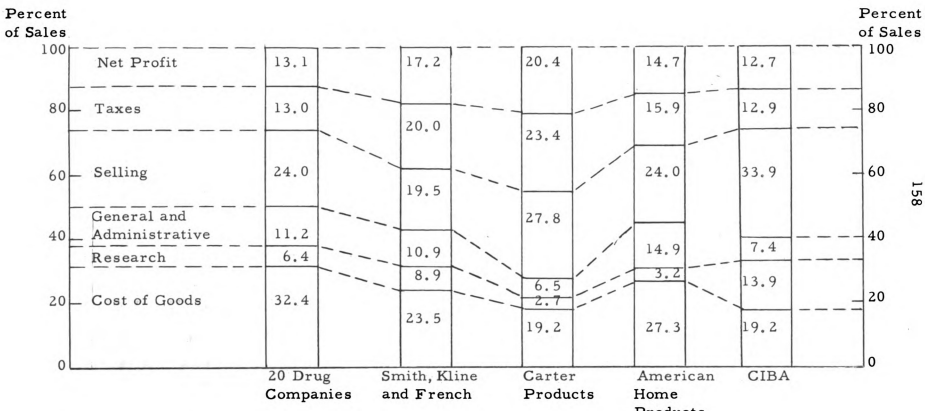
[2]U. S. Senate, Committee on the Judiciary, Drug Industry Antitrust Act, Part 3: Patent Provisions, Eighty-seventh Congress, First Session (Washington, D.C.: U. S. Government Printing Office, 1962) "The Consumer's Stake In Drugs," Office of Research of Nationwide Insurance Company, entered as Appendix 17, pp. 1637-1702.

Finally, three additional estimates of profits and margins as estimated before the U. S. Senate Committee on the Judiciary, Subcommittee on Monopoly and Antitrust[3] are reproduced as Exhibits 14, 15 and 16.

---

[3]Report: Administered Prices - Drugs, Eighty-seventh Congress, First Session, Report No. 448 (Washington, D.C.: U. S. Government Printing Office, 1961).

EXHIBIT 14: Drug Operations Only--Breakdown of Sales Dollar*--20 Major Companies--1958



*Including royalties and other income.

SOURCE: "Administered Prices in the Drug Industry," Hearings Before the U. S. Senate Subcommittee on Antitrust and Monopoly. Part 16, page 9176.

EXHIBIT 15: Drug Companies' Net Profits After Taxes as Percent of Sales (1952 - 1959)

	All Manufacturing Corporations %	American Home Products Corporation %	Carter Products Inc.[1] %	Smith, Kline and French Laboratories %	CIBA Pharmaceutical Products, Inc. %
1952	4.3	4.9[2]	5.6	9.3	N.A.
1953	4.3	7.0	5.1	9.3	N.A.
1954	4.5	8.0	6.8	14.3	N.A.
1955	5.4	8.8	9.0	17.4	N.A.
1956	5.2	10.6	10.7	18.0	N.A.
1957	4.8	11.1	13.2	17.8	N.A.
1958	4.1	11.3	14.4	16.8	12.8
1959[3]	4.9	10.3	16.9	19.5	N.A.

[1]Fiscal year ending March 31 following year shown.

[2]As adjusted to eliminate effect of nonoperating income in 1952.

[3]1959 estimated at average for 3 quarters.

NOTE: Percentages represent corporate net profits divided by corporate net sales.

SOURCE: "Administered Prices in the Drug Industry," Hearings Before the U. S. Senate Subcommittee on Antitrust and Monopoly. Part 16, page 8932.

EXHIBIT 16: Drug Companies' Rates of Return (After Taxes) on Net Worth 1952-59

	All Manufacturing Corporations %	Drugs (11 Identical Companies) %	Smith, Kline and French Laboratories %	American Home Products Corp. %	Carter Products Inc.[1] %
1952	10.3	13.4	22.7	13.1[2]	N.A.
1953	10.4	12.8	23.2	17.9	N.A.
1954	9.9	14.0	37.9	21.0	N.A.
1955	12.6	16.4	49.7	24.9	N.A.
1956	12.3	18.4	46.2	34.0	N.A.
1957	11.0	20.4	41.5	36.4	49.0
1958	8.6	19.9	35.4	34.9	44.1
1959(estimated[3])	10.7	21.0	42.0	36.8	55.0

[1]Carter data for fiscal year ending Mar. 31, following year shown. Net worth figures not available to compute rate of return prior to 1957.

[2]As adjusted to eliminate effect of nonoperating income in 1952.

[3]1959 estimated at average for first 3 quarters (Carter for 2 quarters).

SOURCES: All manufacturing corporations: FTC-SEC "Quarterly Financial Reports for Manufacturing Corporations." Named companies: Federal Trade Commission, special tabulation prepared for subcommittee, from Moody's. 11 identical companies: Weighted average of data supplied for these companies by FTC.

APPENDIX VIII

PRODUCT CONCENTRATION

In an attempt to ascertain the importance of product concentration, the following two questions were included in the questionnaire:

95. What percent of the total pharmaceutical sales for each year (1956 and 1961) was accounted for by the two major products of that year?

1956 _____ %

1961 _____ %

96. What percent of the total pharmaceutical sales for 1961 was accounted for by the two major products of 1956?

_____ %

In 1956, the equally weighted mean of product concentration was 41.0% with an industry median of 35%. By 1961, the comparable figures were 37.0%, and 38.0% respectively. Similarly, the range in 1956 was from 7.0% of a firm's sales being derived from two products to a high of 90%. By 1961 this range had narrowed to a low of 10.6% and a high of 69.0%.[1]

Another topic of interest is the often repeated assertion that product obsolescence is high; that the majority of the products of today will be gone in five to ten years.[2] While this may or may not be true,

---

[1]This may be somewhat misrepresented in absolute terms as one firm, known to have a very high concentration in only two products, refused to reply. However, in terms of the relative emphasis in the industry, the figures above are representative.

[2]This is asserted throughout the U. S. Senate Hearings on the drug industry. See for example, U. S. Senate, Committee on the Judiciary, Drug Industry Antitrust Act, Hearings before the Subcommittee on Antitrust and Monopoly, Part 3, Patent Provisions (Washington, D. C., U. S. Government Printing Office, 1962), pp. 1662-63.

Table 25. Sales of Each Firm's Two Largest Selling Products Expressed as a Percent of the Firm's Total Sales for 1956, 1961

Firm Code Number	Two Largest Selling Products 1956, as a Percent of 1956 Total Sales	Two Largest Selling Products 1961, as a Percent of 1961 Total Sales	Two Largest Selling Products of 1956; 1961 Sales Expressed as % of 1961 Total Sales
6.5	12.6	10.6	10.1
6.4	35.0	40.0	40.0
6.3	22.0	28.0	18.0
6.2	33.3	20.0	20.0
6.1	59.6	49.0	44.9
5.5	28.0	33.0	24.0
5.4	65.2	54.2	34.9
5.3	40.0	48.0	14.0
5.2	33.4	19.9	13.4
5.1	89.0	48.0	48.0
4.5	50.0	50.0	50.0
4.3	41.4	33.8	29.6
4.1	25.0	35.0	35.0
3.5	25.9	42.0	23.9
3.4	15.3	37.0	14.3
3.3	33.0	38.0	38.0
3.2	N.A.	N.A.	N.A.
3.1	13.0	38.0	83.0
2.5	57.0	37.0	34.0
2.4	17.0	38.0	5.0
2.3	57.0	36.0	29.0
2.2	40.0	69.0	53.0
2.1	N.A.	N.A.	N.A.
1.5	25.5	12.5	3.2
1.4	7.0	20.0	1.0
1.3	60.1	54.2	41.7
1.2	35.0	26.0	26.0
1.1	90.0	45.0	25.0
Mean	41.0	37.0	27.9
Median	35.0	38.0	25.5

it is evident from Table 24 that most firms have some basic products which are "bread-and-butter" for at least five years.

The most comprehensive look at product concentration which is publicly available is that of the U. S. Senate Subcommittee on Antitrust and Monopoly. The following text and tables have been excerpted from the report[3]:

CHAPTER 4. ECONOMIC CONCENTRATION IN ETHICAL DRUGS

> At the outset a differentiation should be made between concentration of production and concentration of sales, or "control of the market" as it is often termed. It happens that in this industry there is an unusually high degree of specialization on particular products among the industry's major companies. Thus, the nine principal hormone products are produced by only 7 of the 20 largest companies. The diabetic drugs are produced by only 5 of the 20, the tranquilizers by only 6. In sulfas there are only three producers, in vitamins only six, in antibiotics other than penicillin eight, and in penicillin seven. More often than not a large company which markets a broad line of ethical drugs will itself produce less than half of the products, buying the remainder from other major companies, or in some instances from small specialty houses. In such arrangements the drug is usually purchased in bulk form, with the buying company performing the functions of tableting and bottling. An inevitable consequence is that concentration in terms of sales is lower than in terms of production.
>
> But this should not be taken to mean that the latter type of figure is wholly without significance. As long as the legal doctrine prevails that sellers are free to select their own customers, the producing firm is in an advantageous position vis-a-vis its competitors who also happen to be its customers. Although the degree of dependence may be mitigated by purchase contracts, most contracts have a terminal date. If the supplying firm does not wish to renew the contract and there are only one or two other producers, the buying firm may have difficulty in securing a new source of supply. This may be particularly true

---

[3]U. S. Senate, Committee on the Judiciary, Subcommittee on Antitrust and Monopoly, Eighty-seventh Congress, First Session, Administered Prices--Drugs (Washington, D.C.: U. S. Government Printing Office, 1961), pp. 65-69.

if he has made substantial inroads on the producers' sales or has failed to adhere to an established price structure. If, as is true more often than not, the supplier is a monopolist, the buying firm may not wish to duplicate the plant, equipment, and know-how necessary for production; he may also encounter a patented intermediate, a process patent, or other legal barrier to production. Hence, it can be seen that figures on concentration of production, while usually overstating concentration in the market as of a given time, nevertheless have a unique significance with respect to the concentration of economic power in the long run.

Concentration of production

During the hearings, concentration ratios prepared by the subcommittee staff were placed in the record for 51 products in the major product groupings--hormones, diabetic drugs, tranquilizers, sulfas, vitamins, and antibiotics. These rations, presented in chart 8, show the percentage share of the total U. S. output in 1958 accounted for by each of the 15 major drug companies which produce 1 or more of these products.[1] The 15 products represent at least two-thirds of the total value of all ethical drugs in 1958.[2] In addition to indicating the percentage of output accounted for by each of the major companies, the chart shows with an "X" those instances where a company sells a product but does not produce it; where for some reason a company produces a product but does not sell it to the drug trade, a circle is drawn around the concentration ratio.

There are in all 87 instances in which the 15 major drug companies produce and sell the 51 products shown on the chart. There are 127 X's on the chart representing instances where the drug company sells the drug but does not produce it; there are 14 instances of the anomalous situation where the company produces the drug but does not sell it.

---

[1]In addition, the subcommittee sent its questionnaire to seven other companies, each a major factor in the drug industry. None reported that it manufactured any of these 51 products. These companies are Mead Johnson, Norwich Pharmacal, G. D. Searle, Sterling Drug, U. S. Vitamin & Pharmaceutical, Vick Chemical, and Warner Lambert (hearings, pt. 21, p. 11742).

[2]Hearings, pt. 19, pp. 10772-10783. On the basis of information presented by Dr. Austin Smith, president of the Pharmaceutical Manufacturers Association, certain revisions in the original percentage figures were made; in addition, the information presented in the chart was expended to indicate whether sales were made by a company which did not produce the product and whether sales were not made by companies which produced it (hearings, pt. 19, pp. 10773-10774, 10825; pt. 21, pp. 11740-11745).

CHART 8

SELECTED ETHICAL DRUGS

SALES BY, AND CONCENTRATION OF PRODUCTION OF,

15 MAJOR DRUG COMPANIES

NAME OF DRUG	Abbott	Am Cyan	Am Home	Bristol-M	Carter	CIBA	Hoffmann La R	Lilly	Merck	Olin-Math	Parke,Davis	Pfizer	Schering	Smith K&F	Upjohn	Producers	Sellers
HORMONES:																	
Hydrocortisone									33			28	X		39	3	4
Cortisone									39				33		28	3	3
Methyltestosterone	X					100		X			X	X	X		X	1	7
Prednisolone									33			22	X		45	3	4
Prednisone									9				89		2	3	3
Progesterone	X		X					X	X	X	X	X			100	1	9
Triamcinolone		17								83						2	2
Dexamethasone						X			74				26			2	3
6-Methyl Prednisolone															100	1	1
DIABETIC DRUGS:																	
Insulin								77	4	19						3	3
Diabinese												100				1	1
Orinase															73	2	1
TRANQUILIZERS:																	
Reserpine						56		X	X	X				X	X	2	7
Hydroxyzine												100				1	1
Chlorpromazine														100		1	1
Prochlorperazine														100		1	1
Perphenazine													100			1	1
Promazine			100													1	1
Meprobamate			X		100[a]											1	2

Sulfisoxazole							100								1	1
Sulfadiazine	X	100						X	X	X	X			X	X	1	8
Sulfamethoxypyridazine		100									X					1	2
Sulfapyridine		(100)						X	X		X					1	3
Sulfapyridine, Sodium		(100)							X							1	1
Succinylsulfathiazole									100							1	1
Phthalylsulfathiazole									100							1	1
Sulfathiazole	X	(73)	X					X	27		X			X		2	7
Madribon							100									1	1
Vitamins:																	
A	X	X	X				28	X	(2)	X	X	36	X		X	5	10
B_1	X	X	X				(44)	X	56	X	X	b/		X	X	3	10
B_2	X						(59)	X	30	X	X	(b/)				4	5
B_6	X	6					(46)	X	48	X	X	X		X	X	3	9
B_{12}	X	X	X	X		X		X	100	X	X	X	X	X	X	1	13
E	X	X					X	X	100	X	X				X	1	8
Biotin							(100)	X								1	1
Folic Acid	3	65					X	X	X	X	X	X	X	X	32	3	11
Ascorbic Acid	X	X	X				35	X	27	X	X	38	X	X	X	3	12
ANTIBIOTICS:																	
Chloramphenicol											100					1	1
Aureomycin		100														1	1
Dihydrostreptomycin	X	(5)	X					10	(44)	25	X	16			X	5	7
Erythromycin	35							65							X	2	3
Nystatin										100		X			X	1	3
Oleandomycin			X				X					100				1	3
Terramycin												100				1	1
Streptomycin		(6)	X					2	(16)	46	X	30			X	5	6
Tetracycline		33		36						X		31			X	3	5
Penicillin:																	
Benzathine G			99									1				2	2
Benzathine V			100													1	1
Potassium G	2		23	9				6	22	28	X	10	X		X	7	10
Potassium V	17							83								2	2
Procaine G	1	X	16	1				22	(6)	28	X	26	X		X	7	10

LEGEND: Numerals - Produces and Sells; X - Sells Only; Numbers Represent Percentage of Production; Circled Numberals - Produces Only; a/ Carter controlled all production by license under patent although producing none itself. b/ Less than $\frac{1}{2}$ percent.

SOURCES: Producers: Reports by companies to the Subcommittee, for 1958.
Sellers: Exhibit 263 of Dr. Austin Smith P.M.A., 1959-60, as adjusted.

Representing one extreme is Parke, Davis which sells 20 of the 51 products but produces only one (chloramphenicol), or a ratio of products sold to products produced of 20 to 1. At the other is Pfizer which also sells 20 products but manufactures 14, for a ratio of $1\frac{1}{3}$ to 1. The ratio of products sold to products produced for each of the companies is as follows:[3]

Pfizer	$1\frac{1}{3}$ to 1.
Merck	$1\frac{1}{3}$ to 1.
Bristol-Myers	$1\frac{1}{3}$ to 1.
American Cyanamid (Lederle)	2 to 1.
CIBA	2 to 1.
Hoffmann-LaRoche	2 to 1.
Lilly	3 to 1.
American Home Products (Wyeth)	3 to 1.
Olin Mathieson (Squibb)	3 to 1.
Upjohn	3 to 1.
Abbott	3 to 1.
Schering	4 to 1.
Smith Kline & French	5 to 1.
Parke, Davis	20 to 1.

Thus, insofar as the 51 products are concerned, only 6 companies produce as many as half of the drug products which they sell. About half of the companies are faced with the possibility that their supplier may discontinue sales on at least two out of every three products which they market. In the degree of dependence by major companies upon others and particularly upon their competitors for their supplies, the ethical drug industry is unique among manufacturing industries.

There is still another way in which the concentration of production in this industry appears to be unique. It is an accepted maxim that among highly concentrated industries concentrating typically takes the form of oligopoly (control of the few) rather than monopoly. Insofar as production is concerned, the drug industry represents a striking exception. This can be seen in the summary tabulation prepared from the preceding chart. It shows for the 51 products the number of firms required to produce 100 percent of the U. S. output:

---

[3]The listing omits the unusual case of Carter which sells only one of the products, which, incidentally, is made for it.

Table 27. 51 Ethical Drugs - Number of Companies Required to Produce Total U. S. Output

Type of drug	Number of drugs	Number of companies					
		1	2	3	4	5	7
Hormones	9	3	2	4			
Antidiabetics	3	1	1[1]	1			
Tranquilizers	7	6	1[2]				
Sulfas	9	8	1				
Vitamins	9	3		4	1[3]	1[4]	
Antibiotics (excluding penicillin)	9	5	1	1		2	
Penicillin	5	1	2				2
Total	51	27	8	10	1	3	2

[1]Includes Hoechst, not on table (Orinase).
[2]Reserpine: includes producer not among 22 major companies.
[3]Includes a producer of B_2 not on table.
[4]Includes 2 producers of A not on table.

In 27 of the products, or more than half, the entire U. S. output is produced by 1 of the 15 companies shown in Chart 8. In sulfa drugs one company accounts for 100 percent of the output in eight of the nine products. In tranquilizers the condition of monopoly prevails in six of the seven products. In antibiotics (other than penicillin) the total output is produced by one company in five out of the nine products, and in hormones and vitamins, each, in three out of the nine. In 8 additional products concentration takes the form of "duopoly"--control by 2, while in 10 others the entire output is produced by 3 companies. Against the typical structure of concentration in manufacturing industries, it is indeed remarkable that in only 6 of the 51 products are there as many as 4 producers.

APPENDIX IX

ATTITUDES OF SALES MANAGERS TOWARD COMPENSATION CRITERIA

To study sales managers' attitudes toward compensation criteria two methods were used. First the sales manager was asked to give his replies to an inventory of attitude questions which focused on the three criteria referred to in virtually every sales management class. These three were that a compensation program should: (1) provide an incentive to the man to perform the job requirements; (2) be fair to the company and the salesman; and (3) provide income security to the man.

Second, sales managers were asked to indicate their rank ordering of the importance of seven criteria which included the above three plus four additional. This was accomplished by selecting the most important, then the least important, then the most important of those remaining, and so on.

As the number of respondents was to be less than fifty, the technique of Guttman Scaling was used. A Guttman Scale is an ordinal scale with no zero point, thus one person's replies are measured in terms of the replies of others.

There are a number of excellent works on scaling procedures and psychometric methods. Two of the best known are those of Samuel Stouffer[1] and W. S. Torgerson.[2] The work in this appendix is based

---

[1]Samuel Stouffer, et al., Measurement and Prediction, Vol. IV (Princeton, New Jersey: Princeton University Press, 1950).

[2]W. S. Torgerson, Theory and Methods of Scaling (New York: John Wiley and Sons, 1958).

on the present writer's paper, "A Guide To The Use Of Scalogram Analysis," [unpublished mimeograph, 1961] which was based on the foregoing authors' works. Also, notation procedure was based on the paper of Professor F. B. Waisanen entitled, "Typewriter Notation In Scalogram Analysis, [unpublished mimeograph, 1961].

Conclusions and inferences from these inventory replies and analyses are found in Chapters IV and V. Company names have been replaced by company code numbers so that individuals and companies cannot be identified.

Table 26. Scalogram of Replies on Security Inventory

Firm Code No.	Agreed With Question No: 62	59	56	61	57	58	55	60	Disagreed With Question No: 62	59	56	61	57	58	55	60
2.5	X	X	X	X	X	X	X	X								
2.3	X	X	X	X	X	X	X	X								
4.5	X	X	X	X	X	X	X	X								
5.1	X	X	X	X	X	X	X									X
4.3		X	X	X	X	X	X	X	X							
4.1			X	X	X	X	X	X	X	X						
6.5			X	X	X	X	X	X	X	X						
6.2			X	X	X	X	X	X	X	X						
6.4			X	X	X	X	X	X	X	X						
1.3			X	X	X	X	X	X	X	X						
1.4			X	X	X	X	X	X	X	X						
3.5			X	X		X	X	X	X	X				X		
1.1	X			X	X	X	X	X		X	X					
5.5				X	X	X	X	X	X	X	X					
1.2				X	X	X		X	X	X	X				X	
5.3			X		X	X	X	X	X	X		X				
2.1			X		X	X		X	X	X		X			X	
3.2	X				X	X	X	X		X	X	X				
3.4		X			X	X	X	X	X		X	X				
2.2	X				X	X	X	X		X	X	X				
3.1				X		X	X	X	X	X	X		X			
6.3				X		X	X	X	X	X	X		X			
6.1	X	X				X		X			X	X	X		X	
5.2							X	X	X	X	X	X	X	X		
5.4	X	X		X				X			X		X	X	X	
3.3			X	X				X	X	X			X	X	X	
1.5					X			X	X	X	X	X		X	X	
2.4								X	X	X	X	X	X	X	X	
Freq. (Modals Underlined)	9	8	15	19	20	23	21	27	19	20	13	9	8	5	7	1

$$\text{Coefficient of Reproducibility} = 1 - \frac{\text{errors}}{C \times N} = 1 - \frac{21}{224} = .907$$

$$\text{Coefficient of Scalability} = 1 - \frac{\text{errors}}{C \times N - \Sigma \text{ mode } C} = 1 - \frac{21}{224-164} = .633$$

EXHIBIT 17: Security Inventory Questions

62. Salesmen in the ethical pharmaceutical field today have too much income security.

A B C D E

59. Our company sales compensation plan is too concerned with security.

A B C D E

56. The experienced and competent salesman is not concerned regarding week-to-week or month-to-month fluctuations in earnings, but concentrates on total annual earnings.

A B C D E

61. Too much security of income will cause poor salesmanship.

A B C D E

57. Salesmen as a group are generally less concerned with security of income than are other employee groups.

A B C D E

58. The important factor is not security of income, but rather, the salesman's self confidence of his sales ability. If his self confidence is high, his concern with security is low and vice versa.

A B C D E

55. An experienced and competent salesman thinks of opportunity rather than security of income.

A B C D E

60. There is some minimum amount of security needed in any sales compensation plan. If this minimum amount is not provided, one finds it very difficult to hire and retain good salesmen.

A B C D E

Table 27. Scalogram of Replies on Incentive Inventory

Firm Code No.	Agreed With Question No.										Diagreed With Question No.									
	72	71	70	69	66	65	64	68	67	63	72	71	70	69	66	65	64	68	67	63
5.3	X	X	X				X	X	X	X				X	X	X				
1.5			X	X	X	X	X	X	X	X	X	X								
3.4				X	X	X	X	X	X	X	X	X	X							
1.2				X		X	X	X	X	X	X	X	X		X					
2.5		X		X	X	X			X	X	X		X				X	X		
5.4					X	X	X	X	X	X	X	X	X	X						
2.1		X			X		X	X		X	X		X	X		X			X	
1.3		X		X		X	X		X	X	X		X		X			X		
3.2			X			X	X	X	X	X	X	X		X	X					
2.4						X		X	X	X	X	X	X	X	X		X			
3.5			X				X	X	X	X	X	X		X	X	X				
1.4					X		X	X	X	X	X	X	X	X		X				
3.1			X				X	X	X	X	X	X		X	X	X				
4.3			X				X	X	X	X	X	X		X	X	X				
5.2							X	X	X	X	X	X	X	X	X	X				
6.1							X	X	X	X	X	X	X	X	X	X				
4.5							X	X	X	X	X	X	X	X	X	X				
6.2			X				X		X	X	X	X		X	X	X		X		
4.1			X				X		X	X	X	X		X	X	X		X		
2.2				X			X	X		X	X	X	X		X	X			X	
6.5				X			X	X		X	X	X	X		X	X			X	
3.3							X		X	X	X	X	X	X	X	X		X		
6.3	X							X	X	X		X	X	X	X	X	X			
6.4								X	X	X	X	X	X	X	X	X	X			
5.5								X	X	X	X	X	X	X	X	X	X			
5.1								X		X	X	X	X	X	X	X	X		X	
1.1	X					X			X	X		X	X	X	X		X	X		
2.3									X	X	X	X	X	X	X	X	X	X		
Freq. (Modals Underlined)	3	4	8	7	6	9	20	21	24	28	25	24	20	21	22	19	8	7	4	0

Coefficient of Reproducibility = $1 - \frac{\text{errors}}{CxN} = 1 - \frac{32}{280} = .\underline{886}$

Coefficient of Scalability = $1 - \frac{\text{errors}}{CxN - \Sigma \text{ Mode } C} = 1 - \frac{32}{56} = .\underline{429}$

EXHIBIT 18: Incentive Inventory Questions

72. Non monetary incentives such as free trips to Europe, outstanding salesman of the year awards, etc., tend to be more important to salesmen than cash incentives.

A B C D E

71. Contests, properly designed and operated, are more effective as an incentive than are commission or bonus plans.

A B C D E

70. Group incentives such as a bonus pool or shared commissions are more meaningful to the company because selling is a team effort.

A B C D E

69. There is probably too much emphasis on incentives today; either a man is an interested and effective salesman or he isn't, and incentives won't change his behavior very much.

66. Sales contests tend to undermine the professional attitude toward selling.

A B C D E

65. One of the major problems in using a commission plan is that it tends to cause salesmen to "oversell" the customers.

A B C D E

64. Money is probably the strongest incentive affecting salesmens' performance.

A B C D E

68. A sales compensation plan should not have a maximum earnings limitation. The salesman should be able to earn as much as he is able, even if it is more than the sales manager's income.

A B C D E

67. An automobile is an extremely important incentive to salesmen.

A B C D E

63. A good sales compensation plan always provides an incentive to the salesman to earn more money.

Table 28. Scalogram of Replies on Fairness Inventory

Firm Code No.	Agreed With Question No.						Disagreed With Question No.					
	78	73	76	77	75	79	78	73	76	77	75	79
1.4	X	X	X		X	X				X		
1.1	X	X		X	X	X			X			
5.3	X	X	X			X				X	X	
3.1	X	X			X	X			X	X		
4.3	X		X		X	X		X		X		
2.3		X	X	X	X	X	X					
1.3		X	X		X	X	X			X		
4.1		X	X	X		X	X				X	
6.2		X	X	X		X	X				X	
2.2			X	X	X	X	X	X				
1.2			X	X	X		X	X				X
2.5			X	X		X	X	X			X	
5.2		X			X	X	X		X	X		
6.3	X	X			X				X	X		X
2.4	X					X		X	X	X	X	
5.5		X	X				X			X	X	X
3.5					X	X	X	X	X	X		
6.1					X	X	X	X	X	X		
5.4		X				X	X		X	X	X	
3.2		X			X		X		X	X		X
6.5	X					X		X	X	X	X	
3.3			X			X	X	X		X	X	
6.4	X							X	X	X	X	X
1.5			X				X	X		X	X	X
4.5		X					X		X	X	X	X
5.1		X					X		X	X	X	X
3.4		X					X		X	X	X	X
2.1					X		X	X	X	X		X
Freq. (Modals Underlined)	9	16	13	7	14	18	19	12	15	21	14	10

Coefficient of Reproducibility = $1 - \frac{31}{168} = .822$

Coefficient of Scalability = $1 - \frac{\text{errors}}{C \times N - \Sigma \text{ Mode } C} = .55$

EXHIBIT 19: Fairness Inventory Questions

78. A sales compensation plan should provide additional income for additional investments of the salesman's leisure time in such activities as night school, extra training sessions, special duties, etc.

A B C D E

73. What a manager considers as being a fair and equitable compensation plan is often different from what a salesman considers as fair and equitable.

A B C D E

76. A guaranteed minimum income is fair to the salesman, and a guaranteed maximum is fair to the company.

A B C D E

77. A salesman should not be allowed to earn an income which is equal to or greater than his superior, because the salesman does not have managerial responsibilities to perform.

A B C D E

75. Men of equal productivity should receive equal pay regardless of time with the company.

A B C D E

79. In the final analysis, it is measurable sales results that should determine a man's income, and not years of service, amount of responsibility, degrees received in college, or any other basis which is not directly related to sales results.

A B C D E

Table 29. Rank Correlation of Firms' Scores For Attitude Inventories

Rank	Rank Ordering of Firms by Score: Security Inventory (A)	Inventives Inventory (B)	Fairness Inventory (C)	Squared Inventory Rank Differences For Individual Firms: $(A-B)^2$	$(A-C)^2$	$(B-C)^2$
1	2.5	1.5	1.4	9	121	576
2	2,3	3.4	1.1	676	1	484
3	4.5	1.2	2.3	196	484	64
4	5.1	2.5	5.3	484	484	64
5	4.3	5.4	3.1	64	1	196
6	4.1	2.1	4.3	196	4	484
7	6.5	1.3	1.3	196	196	0
8	6.2	3.2	4.1	100	1	144
9	6.4	2.4	6.2	225	196	36
10	1.3	3.5	2.2	9	9	49
11	1.4	1.4	1.2	0	100	100
12	3.5	3.1	2.5	4	25	49
13	1.1	4.3	5.2	196	121	49
14	5.5	5.3	6.3	121	4	100
15	1.2	5.2	2.4	144	16	4
16	5.3	6.1	5.5	4	144	4
17	2.1	4.5	3.5	121	121	64
18	3.2	6.2	6.1	100	.4	81
19	3.4	4.1	5.4	289	64	121
20	2.2	2.2	3.2	0	100	100
21	3.1	6.5	6.5	81	256	0
22	6.3	3.3	3.3	81	64	0
23	6.1	6.3	6.4	49	25	81
24	5.2	6.4	1.5	81	121	1
25	5.4	5.5	4.5	400	36	81
26	3.3	5.1	5.1	16	16	0
27	1.5	1.1	3.4	676	9	625
28	2.4	2.3	2.1	361	9	625
				4772	2892	4182

(1) Rank correlation A with B: $\text{rho} = 1 - \frac{6(4772)}{21924} = \frac{28632}{21924} = -.308$

"t" $.308\sqrt{26/.905} = .308\ (5.37) = 1.655$ (not significant)

(2) Rank Correlation A with C: $\text{rho} = 1 - \frac{6(2892)}{21924} = \frac{17352}{21924} = -.208$

"t" $= .208\sqrt{26/.96} = .208\ (5.2) = 1.08$ (not significant)

(3) Rank Correlation B with C: $\text{rho} = \frac{6(4182)}{21924} = \frac{25892}{21924} = -.145$

(not significant)

EXHIBIT 20: Item Analysis of Inventory Scores

Items which are significantly related to firm score on:

Security Inventory: #56, 57

Incentive Inventory: #65, 66

Fairness Inventory: #76

Total of Three Inventories: #76, 77

Item 56:

Score on item 56	Total Score (Security) low	high	
1	2	13	15
0	8	5	13
	10	18	28

Yates Correction:

$$\frac{28(|10-104|-14)^2}{(15)(13)(10)(18)} = \frac{28(80)^2}{35,200} = \underline{\underline{5.08}}$$

$\therefore$ significant at .05 level.

Fisher's Exact Method:

$$P_2 = \frac{15!\ 13!\ 10!\ 18!}{2!\ 13!\ 8!\ 5!\ 28!} = \frac{1,003 \times 10^9}{95,240 \times 10^9} = .01055$$

$$P_1 = \frac{15!\ 13!\ 10!\ 18!}{1!\ 14!\ 9!\ 4!\ 28!} = \frac{557 \times 10^9}{668,000 \times 10^9} = .000833$$

$$P_0 = \frac{15!\ 13!\ 10!\ 18!}{0!\ 15!\ 10!\ 3!\ 28!} = \frac{1,040 \times 10^9}{47,620 \times 10^9} = .000022$$

$$\Sigma P_i = \underline{\underline{.011405}}$$

Item 57:

Score on item 57	Total Score (Security) low	high	
1	3	17	20
0	7	1	8
	10	18	28

Yates Correction:

$$\frac{28(|3-119|-14)^2}{(20)(8)(10)(18)} = \frac{28(102)^2}{28,800} = \frac{577,000}{28,800} = \underline{19.82}$$

$\therefore$ significant at .0005 level.

Item 65:

Score on item 65	Total Score (Incentive) low	high	
1	2	7	9
0	13	6	19
	15	13	28

Yates Correction:

$$\frac{28(|12-91|-14)^2}{(9)(19)(15)(13)} = \frac{117,800}{33,300} = \underline{3.54}$$

$\therefore$ not significant at .05 level.

Fisher's Exact Method:

$$P_2 = \frac{9!\ 19!\ 15!\ 13!}{2!\ 7!\ 13!\ 6!\ 28!} = \frac{130.5 \times 10^9}{5,013 \times 10^9} = .026000$$

$$P_1 = \frac{9!\ 19!\ 15!\ 13!}{1!\ 8!\ 14!\ 5!\ 28!} = \frac{97.9 \times 10^9}{35,091 \times 10^9} = .002790$$

$$P_0 = \frac{9!\ 19!\ 15!\ 13!}{0!\ 9!\ 15!\ 4!\ 28!} = \frac{.259 \times 10^9}{2,506.5 \times 10^9} = \underline{.000104}$$

$$\Sigma P_i = \underline{.028894}$$

Item 66:

Score on Item 66	Total Score (Incentive) low	high	
1	0	6	6
	15	7	22
	15	13	28

Fisher's Exact Method:

$$P_0 = \frac{6!\ 22!\ 15!\ 13!}{0!\ 6!\ 15!\ 7!\ 28!} = \frac{1.237 \times 10^6}{271.250 \times 10^6} = \underline{.0046}$$

Item 76:

Score on item 76	Total Score (Fairness) low	high	
1	3	10	13
0	11	4	15
	14	14	28

Yates Correction:

$$\frac{28(|9-110|-14)^2}{(13)(15)(14)(14)} = \frac{197,568}{38,200} = \underline{\underline{5.17}}$$

$\therefore$ is significant at .025 level.

Item 76:

Score on item 76	Total Score (overall) low	high	
1	5	8	13
0	14	1	15
	19	9	28

Yates Correction:

$$\frac{28(|5-112|-14)^2}{(13)(15)(19)(9)} = \frac{242,172}{33,345} = \underline{\underline{7.27}}$$

$\therefore$ is significant at .01 level.

Item 77:

Score on item 77	Total Score (overall) low	high	
1	2	5	7
0	17	4	21
	19	9	28

Yates Correction:

$$\frac{28(|8-85|-14)^2}{(7)(19)(9)(21)} = \frac{111,132}{25,137} = \underline{\underline{4.42}}$$

$\therefore$ is significant at .05 level.

APPENDIX X

ANALYSIS OF 2^n CONTINGENCY TABLES

While analysis of 2 X 2 contingency tables is a worthwhile effort, it was also decided to analyze several selected 2 X 2 X 2 contingency tables by the use of factorial analysis. The method used was that described by A. E. Maxwell.[1]

First, it was necessary to dichotomize the data and arrange it in contingency table form. These tables are number 16, 17 and 18 on pages 43, 44 and 45 respectively. The last row of each table is the proportion "explained" by a given series of contingencies. For example, in Table 16, the first entry in the last row is the proportion of five firms which are low on product concentration, low on managerial control and low in average compensation of detailmen and yet which are high in sales growth.

Taking the number in the third row as "n", and the proportion "explained" as "p", this proportion should be transformed so that all changes are proportioned rather than absolute. For example, if a low proportion doubles (e.g., .20 X 2 = .40), one would not expect a very high proportion to double (e.g., .90 x 2 = 1.80) as this would indicate a proportion greater than 1.0 or certainty. Thus, the "p" values are transformed to Z values by calculating r = 2p-1 and then, taking an r to Z transformation table, read the proper Z value.

Once the Z values have been determined, sum them. This represents the Z transformed sum of all explained proportions. This is the

---

[1]A. E. Maxwell, op. cit., Chapter VI, "The Analysis of 2^n Contingency Tables."

control figure. The Z values are added, by twos, from the top and subtracted, first from the second, third from the fourth, etc., making a new column. This same addition-subtraction process is continued until a column is computed, the first entry of which is equal to the control figure. Divide each value in this column by eight (number of final contingency categories) to obtain the first approximation of all categories.

Next, take the Z values yielded for the pure effects (e.g., in the first case, (/), p, m and c) and compute the Z^1 values to be used in the second approximation. For example, the Z^1 value of $(1)^1$ = the X value of (/) - p - m - c, or, -1.3890 - .0875 - .0351 + 1.3380 = -.3496 in our first problem below. The resultant Z^1 values are then transformed, by inspection of a transformation table, to R^1 values and the weighting process is evident from inspecting the formulas.

Similarly, the nw and nwZ^1 column are successively summed and subtracted, two at a time as in the first approximation. The resulting values of the nw column are placed in matrix form as shown below and inverted. The inverted matrix is post multiplied by the nwZ^1 values for (/), p, m and c. The square root of the diagonal entry in the inverse matrix is the standard error of the contingency item and when compared to the post multiplied product will indicate the significance of the estimated value.

It should be noted that: (1) this analysis only assesses the main values and not the interactions; (2) contingencies used are ex post facto contingencies and thus are only tools for inductive inference and association; and (3) the small sample size would indicate that replication through time would be valuable.

The calculations for each contingency table are shown as Tables 30, 31 and 32.

Table 30. Factorial Analysis Procedure for Table 16 Data

	n	p	r=2p-1	Z
(/)	5	.200	- .600	- .6990
p	5	1.000	1.000	5.0000
m	5	.400	- .200	- .2090
mp	1	0.000	-1.000	-5.0000
c	4	0.000	-1.000	-5.0000
cp	0	0.000	-1.000	-5.0000
cm	2	.500	0.000	.0000
cmp	5	.400	- .200	- .2090
				Σ = -11.1170

	(1)	(2)	Final (3)	1st Estimate
(/)	4.3010	- .9080	-11.1170	-1.3890
p	- 5.2090	-10.2090	.6990	.0875
m	-10.0000	.9080	.2810	.0351
mp	- .2090	- .2090	-10.6990	-1.3380
c	5.6990	- 9.5100	- 9.3010	-1.1620
cp	- 4.7910	9.7910	- 1.1170	.1395
cm	.0000	-10.4900	19.3010	2.4130
cmp	- .2090	- .2090	9.2810	1.1620

Table 30 - (continued)

	Z'	R	$w=(1-R^2)$	nw	nwZ'
(/)	- .3496	-.3360	.887	4.440	-1.550
p	- .1746	-.1729	.970	4.850	- .850
m	- .2794	-.2724	.925	4.620	-1.290
mp	- .1044	-.1041	.982	.980	- .103
c	-2.6736	-.9905	.018	.072	- .193
cp	-2.5861	-.9887	.023	.000	.000
cm	-2.6385	-.9898	.021	.042	- .111
cmp	2.4284	-.9845	.031	.155	- .377
				$\Sigma =$ 15.159	-4.474

	nw(1)	(2)	Final (3)	nwZ'(1)	(2)	Final (3)
(/)	9.290	-4.890	15.159	-2.400	-3.793	-4.474
p	5.600	.269	- 3.189	-1.393	- .681	1.814
m	.072	-3.230	- 3.565	- .193	1.887	.712
mp	.197	.041	- 3.865	- .488	- .073	.028
c	.410	-3.690	-14.621	.700	1.007	3.112
cp	-3.640	.125	3.271	1.187	- .295	-1.960
cm	- .072	-4.050	3.817	.193	.487	-1.302
cmp	.113	.185	4.235	- .266	- .459	- .946

Table 30 - (continued)

Matric For Inversion

	(/)	p	m	c	Weighted Estimate
(/)	15.159	- 3.189	- 3.565	-14.621	-4.474
p	- 3.189	15.159	- 3.865	3.271	1.814
m	- 3.565	- 3.865	15.159	3.817	.712
c	-14.621	3.271	3.817	15.159	3.112

Inverted Matrix

	(/)	p	m	c	Standard Error
(/)	+.9470	-.00032	-.0079	+.9155	.97
p	-.00032	+.0775	+.0256	-.0235	.28
m	-.0079	+.0256	+.0789	-.0330	.28
c	+.9155	-.0235	-.0330	+.9623	.98

	Product Of Post Multiplication (ME)	Critical Ratio: ME/SE	Significant Level
(/)	-1.3942	-1.44	P< .20
p	+ .0872	.31	Not significant
m	+ .0352	.13	Not significant
c	-1.1671	-1.19	P < .30

Table 31. Factorial Analysis Procedure for Table 17 Data

	n	p	r=2p-1	Z
(/)	5	- .200	- .600	- .6990
m	3	0.000	-1.000	- 5.0000
p	3	0.000	-1.000	- 5.0000
mp	4	.750	.500	.5499
a	4	.750	.500	.5499
am	4	.500	.000	.0000
ap	5	.600	.200	.2025
amp	0	0.000	-1.000	- 5.0000
			Σ =	-14.3967

	(1)	(2)	Final (3)	1st Estimate
(/)	-5.6990	-10.1491	-14.3967	-1.80
m	-4.4501	- 4.2476	- 4.5043	- .56
p	.5499	1.2481	- 4.0985	- .51
mp	-4.7975	- 5.7524	5.1983	.65
a	-4.3010	1.2489	5.9015	.74
am	5.5499	- 5.3474	- 7.0005	.88
ap	- .5499	9.8509	- 6.6963	.84
amp	-5.2025	- 4.6526	-14.5035	1.81

Table 31 - (continued)

	Z'	R	$w=(1-R^2)$	nw	nwZ'
(/)	-1.47	-.8996	.190	.950	-1.395
m	-2.59	-.9888	.022	.066	- .171
p	-2.49	-.9864	.028	.084	- .209
mp	-3.61	-.9985	.003	.012	- .043
a	.01	.0100	.9999	4.000	.040
am	-1.11	-.8041	.353	1.412	-1.567
ap	-1.01	-.7658	.413	2.065	-2.085
amp	-2.13	-.9722	.055	.000	- .000
				Σ = 8.589	Σ= -5.430

	nw(1)	(2)	Final (3)	nwZ'(1)	(2)	Final (3)
(/)	1.116	1.112	8.589	-1.566	-1.818	-5.430
m	.096	7.477	-5.609	- .252	-3.612	1.868
p	5.412	- .956	-4.267	-1.527	1.390	.756
mp	2.065	-4.653	1.335	-2.085	.478	2.634
a	- .884	- .920	6.365	1.224	1.314	-1.794
am	- .072	-3.347	-3.697	.166	- .558	- .912
ap	-2.588	.812	-2.427	-1.607	-1.058	-1.872
amp	-2.065	.523	- .289	2.085	3.692	4.750

Table 31 - (continued)

Matrix For Inversion

	(/)	m	p	a	Weighted Estimate
(/)	8.589	-5.609	-4.267	6.365	-5.430
m	-5.609	8.589	1.335	-3.697	1.868
p	-4.267	1.335	8.589	-2.427	.756
a	6.365	-3.697	-2.427	8.589	-1.794

Inverted Matrix

	(/)	m	p	a	Standard Error
(/)	+.5010	+.1992	+.1492	-.2433	.71
m	+.1992	+.2242	+.0541	-.0367	.47
p	+.1492	+.0541	+.1711	-.-389	.41
a	-.2433	-.0367	-.0389	+.2700	.52

	Product Of Post Multiplication (ME)	Critical Ratio: ME/SE	Significant Level
(/)	-1.798	-2.53	P < .02
m	- .560	-1.19	P < .30
p	- .510	-1.24	P < .25
a	.739	1.42	P < .20

Table 32. Factorial Analysis Procedure for Table 18 Data

	n	p	r=2p-1	Z
(/)	6	0.000	-1.000	-5.0000
t	2	.500	.000	.0000
p	2	.500	.000	.0000
pt	5	.400	- .200	- .2090
a	4	.750	.500	.5499
at	4	.500	.000	.0000
ap	3	.333	- .334	- .3470
apt	2	1.000	1.000	5.0000
				Σ = -0.0061

	(1)	(2)	Final (3)	1st Estimate
(/)	5.0000	-5.2090	- .0061	- .00076
t	- .2090	5.2029	9.5881	1.200
p	.5499	4.7910	8.8941	1.112
pt	4.6530	4.7971	.6879	.086
a	5.0000	4.7910	10.4119	1.300
at	- .2090	4.1031	.0061	.00076
ap	- .5499	-5.2090	- .6879	- .086
apt	5.3470	5.8969	11.1059	1.389

Table 32 - (continued)

	Z'	R	$w=(1-R^2)$	nw	nwZ'
(/)	-3.613	-.9985	.003	.018	- .065
t	-1.213	-.8376	.298	.596	- .723
p	-1.389	-.8828	.221	.442	- .614
pt	1.011	.7662	.413	2.067	2.090
a	-1.013	-.7670	.412	1.650	-1.675
at	1.387	.8824	.222	.888	1.232
ap	1.211	.8370	.298	.894	1.082
apt	3.611	.9985	.003	.006	.022
				$\Sigma =$ 6.561	$\Sigma =$ 1.349

	nw(1)	(2)	Final (3)	(1)nwZ'	(2)	Final (3)
(/)	.614	3.123	6.561	- .788	- .688	1.349
t	2.509	3.438	.553	1.476	.661	3.893
p	2.538	2.203	.257	- .443	2.046	3.811
pt	.900	-1.650	.921	1.104	1.847	- .605
a	.578	1.895	.315	- .568	2.264	- .027
at	1.625	-1.638	-3.853	2.704	1.547	- .199
ap	- .762	1.047	-3.533	2.907	3.362	- .717
apt	- .888	- .126	-1.173	-1.060	-3.967	-7.329

Table 32 - (continued)

Matrix For Inversion

	(/)	t	p	a	Weighted Estimate
(/)	6.561	.553	.257	.315	1.349
t	.553	6.561	.921	-3.853	3.893
p	.257	.921	6.561	-3.533	8.811
a	.315	-3.853	-3.533	6.561	- .027

Inverted Matrix

	(/)	t	p	a	Standard Error
(/)	+.1580	-.0332	-.0227	-.0393	.40
t	-.0332	+.2562	+.0665	+.1879	.51
p	-.0227	-.0665	+.2332	+.1657	.48
a	-.0393	+.1879	+.1657	+.3539	.62

	Product Of Post Multiplication (ME)	Critical Ratio: ME/SE	Significant Level
(/)	- .0016	- .000	Not significant
t	1.201	2.37	P < .05
p	1.112	2.32	P < .05
a	1.300	2.10	P < .05

APPENDIX XI

THE THEORY OF TIME-DISCRETION ABILITY AS A UNIT OF MEASURE IN JOB PERFORMANCE AND CONSUMPTION BEHAVIOR

One of the most interesting and insightful wage theories ever developed is that by Elliott Jaques. His theory attempts to measure and explain, meaningfully, income level, work performance, and individual development. Furthermore, consumer behavior is explained by the same measures. This is especially valuable in that it provides a behavioral-economic common denominator which, with more work and research, may provide the basis for integrating macroeconomic income, consumption and saving theories with microeconomic consumer behavior.

To give a brief understanding of Jaques' theory, the following summary has been excerpted from his book, Equitable Payment:[1]

Summary of the Theory

I

1. There are three main types of economic work: shareholding, directorial work, and employment work. (Entrepreneurial work combines the first two, and self-employment combines all three.) The theory of this book is concerned with employment work.

2. Employment work is defined as the exercise of discretion in discharging a contract to carry out tasks set by an employer, within prescribed limits and policies which he fixes.

---

[1]Elliott Jaques, op. cit., pp. 17-21.

3. It is the type of work for which salaries or wages are paid, and which constitutes the subject of individual payment differentials.

4. Level of employment work can be measured in terms of the time-span of discretion in a job; that is to say, by the maximum period of time during which the use of discretion is authorized and expected, without review of that discretion by a superior.

II

5. There exist shared social norms of what constitutes a fair or equitable payment for any given level of work, these norms being intuitively known by each individual.

6. The totality of these norms constitutes a pattern of equitable differential payment for differentials in level of work carried.

III

7. Each individual is endowed with a given potential capacity for work, this potential capacity showing a characteristic pattern of growth and decline with age, as represented in the standard earning progression array.

8. Each individual is unconsciously aware of his own current potential capacity for work, the level of work in the role in which he is employed, and the equitable payment level for his role.

9. Each individual is therefore unconsciously aware of the extent to which his role fulfills his potential current capacity, and the extent to which his actual payment conforms to equity or deviates from it.

10. The unconscious awareness of these judgments is experienced in feeling, but is difficult to verbalize in a manner precise enough to match the accuracy of the judgment. Moreover, this unconscious awareness exists regardless of the fact that a person may at the same time have grandiose or omnipotent phantasies about himself, or masochistically denigrate himself.

IV

11. There is an optimum level and rate of consumption for each person, in the sense that consumption at that level and rate is consistent with dynamic psychological equilibrium, and consumption above or below that level and rate leads to increasing psychological disequilibrium.

12. This optimum consumption is related to the individual's level of capacity for discriminating expenditure.

13. There is a direct correspondence between each person's level of capacity for discriminating expenditure and his level of capacity in work.

14. There is, therefore, an optimum level of payment for any given level of work: it is that level of payment which will provide a person whose capacity is just up to that work, with an income which matches his capacity for discriminating expenditure and his level of satisfaction consumption.

15. Although the total consumption requirements for a married man and his family will differ from those of a single man, this does not affect the theory of paying the equitable rate for a given level of work. Variations due to family requirements are matters of national policy to be handled in taxation, family benefits, and welfare and other procedures such as social insurance.[1]

V

16. Individuals differ in level of capacity in work.

17. Individuals differ also in level of capacity for discrimination expenditure and in level of satisfaction consumption.

18. The work and income distribution which gives dynamic psycho-economic stability in a society is therefore a differential

---

[1]Indeed, I have little doubt that a social analysis would reveal the existence of unconscious social norms about the value to a person of having a family, and how much national taxation and social benefits ought to influence the net incomes of single and married employed persons.

one, and corresponds with the character of the distribution of capacity to work and capacity for discriminating expenditure among the individual members who compose it.

19. It is this differential pattern which generates the norms of equity in payment distribution.

20. In an under-abundant economy the equitable distribution of income is less differentially steep; the more impoverished the economy the flatter the equitable distribution.

21. Under mere subsistence conditions, equity is served by equality (except for the special needs of the ill, the infirm, and the helpless); that is to say, equilibrium is obtained by a non-differential distribution, everyone alike receiving that amount necessary to remain alive.

VI

22. The actual distribution of payment in any society at any given time will be mainly determined by the interaction of two sets of forces: first, impulses of equity in the members of that society, which cause them to seek to establish a differential distribution which corresponds to the equitable distribution; second, the destructive impulses in the members of that society which cause them to seek personal gain at the expense of others, by means of power bargaining and regardless of equity.

23. In the absence of equitable regulation of payment, imperfection in the labour market for whatever reasons, makes it possible for the destructive impulses to be expressed in the form of exploitation by the favoured groups to bring about deviations between the actual distribution of payment and the equitable payment distribution.

24. Imperfections in the labour market can be exploited--whether by employers or employees--only to a certain point. At about 20 per cent departure from equity an explosive situation develops, the outcome of which would be difficult to predict.

VII

25. Abundant employment (in contrast to full employment) is that condition which provides not only a job for every individual who seeks to work, but a job at a level of work consistent with his capacity.

26. Psycho-economic equilibrium is best achieved in the individual by a level of work corresponding to his capacity and equitable payment for that work.

27. At a level of work greater than his capacity, a person will fail; at a level less than his capacity, disequilibrium will show either in dissatisfaction or in psycho-pathology characterized by acceptance of non-utilization of personal capacity in work.

28. At an over-abundant level of income, disequilibrium will show in squandering and waste, or in defensive behavior against squandering; at an under-abundant level of income, disequilibrium will show in feelings of impoverishment and economic want.

29. The reaction to disequilibrium will be critically influenced by the extent to which the notion of equity is accepted by a society and obtains in it.

30. The greater the acceptance in society of equity in income distribution and employment opportunity, the more will psycho-economic disequilibrium in the individual express itself in the desire for social co-operation to establish and maintain equity and abundance.

31. The greater the rejection in society of these conditions, and the greater the reliance upon bargaining for the price of labour, the more will psycho-economic disequilibrium in the individual express itself either in resentment against those who are differentially in a preferred position, or in unenlightened self-interest by those who are in that preferred position.

VIII

32. Each individual has a normal pace of work and intensity of application, which he will apply to his work as long as his conditions of work do not inhibit him.

33. Equity in payment and abundant employment are necessary conditions in the long run to avoid inhibiting normal pace and application to work; inequitable payment and fear of unemployment in the long run inhibit pace and application.

IX

34. Under conditions of inequitable distribution of payment and uneven opportunity for employment, any given individual may not be able to do much to affect his own personal position, and may have to accept it; but individuals receiving common treatment (i.e., favoured or unfavoured payment or employment) will tend to co-operate in collective action to protect a favoured position, or to improve an unfavourable one.

35. In the short term, inequitable distribution of income may be maintained and supported by established social and political mores and traditions which decree the rightness of relative economic hardship suffered by certain sections of the population; these states of inequity are, however, fundamentally disruptive of social cohesion since they are based upon economic exploitation of one sector of society by another, lead to social disequilibrium, and may eventually lead to forceful suppression or forceful overthrow.

36. In the long term, social cohesion will best be gained by societies which can maintain abundant employment and accept and conform to their own real norms of equity in income distribution. Even in an under-abundant economy under these conditions, social co-operation to enrich the total economy may be stimulated.

Approximating Time Discretion Requirements

To dichotomize time discretion requirements of the job, several methods were employed. Jaques, in his own research used interviews and observations of actual employees and their superiors. However, as such methods could not be undertaken in an aggregate study in reasonable time limits, the following were taken as approximations: (1) the frequency of basic reports required to be forwarded by detail salesmen; (2) the frequency of basic reports of results forwarded from the firm to the detail salesmen; and (3) the frequency of performance evaluation.

BIBLIOGRAPHY

Books

American Management Association. Sales Compensation Plans. Marketing Series #61. New York: American Management Association, 1945.

Argyris, Chris. Understanding Organizational Behavior. Homewood, Ill.: The Dorsey Press, Inc., 1960.

Armstrong, Jack. Incentive and Quality. London: Chapman & Hall, 1950.

Aspley, John C. The Sales Manager's Handbook. 6th ed. Chicago: Dartnell Corp., 1949.

Baumol, Wm. J. Business Behavior, Value and Growth. New York: The Macmillan Co., Inc., 1959.

Beckman, T. N. Salesmen's Compensation Survey, Service Wholesale Druggists, 1939. New York: National Wholesale Druggists Association, 1939.

Belcher, David W. Wage and Salary Administration. 2nd ed. Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1962.

Bigelow, Burton. The Human Side of Sales Management. Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1961.

Boulding, Kenneth E. Conflict and Defense; A General Theory. New York: Harper & Brothers, 1962.

Boyd, Harper W. Jr., and Westfall, Ralph. Marketing Research. Homewood, Ill.: Richard D. Irwin, Inc., 1956.

Calhoun, Richard P. The Competitive Factor in Employee Performance. Research Paper #1. Chapel Hill: School of Business Administration, University of North Carolina, 1959.

Canfield, Bertrand R. Sales Administration, Principles and Problems. 4th ed. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1961.

Churchman, C. W. Theory of Experimental Inference. New York: The Macmillan Co., Inc., 1948.

Copi, Irving M. Introduction To Logic. New York: The Macmillan Co., Inc., 1953.

Crisp, Richard D. Sales Planning and Control. New York: McGraw-Hill Book Co., Inc., 1961.

Fisher, Sir Ronald A. The Design of Experiments. 7th ed. New York: Hafner Publishing Co., Inc., 1960.

Hansen, M. H., Hurwitz, W. N. and Madow, W. G. Sample Survey Methods and Theory; Vol. I: Methods and Applications. New York: John Wiley and Sons, Inc., 1953.

Hedges, J. E. Compensation of Life Insurance Agents. Study #26. Bloomington, Ind.: School of Business, Indiana University, 1942.

Hoffman, Marvin and D. J. Luck. Salesmens Fringe Benefits. MTA Paper #6. East Lansing, Mich.: Bureau of Business and Economic Research, College of Business and Public Service, Michigan State University, 1959.

Homans, George. Social Behavior: Its Elementary Forms. New York: Harcourt, Brace & World, Inc., 1961.

Jaques, Elliott. Equitable Payment. New York: John Wiley & Sons, Inc., 1961.

Johns, C. H. W. "The Code of Hammurabi," Babylonian and Assyrian Laws, Contracts and Letters. New York: Charles Scribner's Sons, 1904.

Johnson, Lewis Kerr. Sales and Marketing Management, Text and Cases. Boston: Allyn and Bacon, 1957.

Jones, J. G. and Doremus, Wm. L. Sales Management. New York: Alexander Hamilton Institute, 1958.

Lansing, J. B., Ginsburg, G. P. and Braaten, K. An Investigation of Response Error. Studies in Consumer Savings #2. Urbana, Ill.: Bureau of Economic and Business Research, University of Illinois, 1961.

Levenstein, Aaron. Why People Work; Changing Incentives in a Troubled World. Crowell-Collier Press, 1961.

Logan, Frank A. Incentives; How the Conditions of Reinforcement Affect the Performance of Rats. New Haven: Yale University Press, 1960.

Lynton, R. Incentives and Management in British Industry. London: Routledge & K. Paul, 1949.

Marriott, R. Incentive Payment Systems: A Review of Research and Opinion. London: Staples Press, 1957.

Maxwell, A. E. Analysing Qualitative Data. London: Methuen & Co., Ltd., 1961.

Maynard, Harold H. and Davis, James H. Sales Management. 3rd ed. New York: The Ronald Press Co., 1957.

Medical Marketing Guide. Minneapolis, Minn.: Modern Medicine Publications, Inc., 1960.

Miles, George H. The Problem of Incentives in Industry. London: Sir I. Pitman & Sons, Ltd., 1943.

Miller, D. C. and Form, Wm. H. Industrial Sociology. New York: Harper & Brothers, 1961.

National Industrial Conference Board. How to Stimulate Salesmen to Better Selling. New York: National Industrial Conference Board, 1958.

Newman, P. C., Gayer, A. D. and Spencer, M. H. Source Readings In Economic Thought. New York: W. W. Norton & Co., Inc., 1954.

Nixon, H. K., et al. Sales Costs and Price Policy. New York: American Management Association, 1939.

Noyes Development Corporation. Pharmaceutical Manufacturers: U.S.A., Canada, United Kingdom, India. Pearl River, New York: Noyes Development Corporation, 1962.

Olsen, Paul C. The Marketing of Drug Products. New York: Harper & Brothers, 1940.

Ostle, B. Statistics In Research. Ames, Iowa: The Iowa State College Press, 1954.

Pharmacy Education - Industry Forum. Princeton, N. J., 1959. The Workings and Philosophies of the Pharmaceutical Industry. New York: National Pharmaceutical Council, 1959.

Phelps, D. M. and Westing, J. H. Marketing Management. rev. ed. Homewood, Ill.: Richard D. Irwin, Inc., 1960.

Robinson, Joan. The Economics of Imperfect Competition. London: Macmillan & Co., Ltd., 1959.

Sales Executives Club of New York. Current Policies and Practices in Sales Management and Marketing Techniques. New York: Research Workshop of Sales Executives Club of New York, 1957.

Salisbury, G. R. A Basis for Supervision of Industrial Sales Personnel. Merchandise Research Division; Washington, D.C.: U. S. Government Printing Office, 1932.

Seelye, Alfred L. and Bass, Frank M. Sales Compensation Methods and Policies of Texas Wholesalers: Grocery, Drug, Hardware. Studies in Marketing #2. Austin: Bureau of Business Research, University of Texas, 1957.

Simmons, Harry. New Techniques in Marketing Management. Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1958.

_____. (ed) Sales Executives Handbook. New York: Prentice-Hall, Inc., 1950.

Stanton, William J. and Buskirk, R. H. Management of the Sales Force. Homewood, Ill.: Richard D. Irwin, Inc., 1959.

Still, R. R. and Cundiff, E. W. Sales Management: Decisions, Policies and Cases. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1958.

Stouffer, Samuel, et al. Measurement and Prediction. Princeton, N. J.: Princeton University Press, 1950.

Taylor, George W. and Pierson, Frank C. (eds.) New Concepts In Wage Determination. New York: McGraw-Hill Book Co., Inc., 1957.

Torgerson, W. S. Theory and Methods of Scaling. New York: John Wiley and Sons, 1958.

Tosdal, Harry R. Introduction to Sales Management. 4th ed. New York: McGraw-Hill Book Co., Inc., 1957.

_____, and Carson, W., Jr. Salesmen's Compensation. Boston: Division of Research, Harvard University, Graduate School of Business Administration, 1953. 2 Vols.

Periodicals

Baldwin, John W. "The Medieval Theories of the Just Price." Transactions of the American Philosophical Society, New Series. XLIX, Part 4, (July 1959).

Clark, P. B. and Wilson, J. Q. "Incentive System; Theory of Organization." Bibliographical Footnotes. Administrative Science Quarterly, VI (September 1961) 129-166.

Day, Ralph, and Bennett, Peter D. "Should Salesmen's Compensation be Geared to Profits?" Journal of Marketing. XXVI (October 1962) 6-9.

Hawkins, N. G. and Hall, E. J. W. "Social Psychology of Prescription Writing." American Journal of Hospital Pharmacy. XVII (March 1960) 142-147.

_____, _____, and Birkett, N. S. The Detailman's Side of the Controversy." The Pennsylvania Medical Journal. LXIII (June 1960) 865-869.

Herman, S. M. "Compensation: Wrong Roads and Questionable Directions." Personnel. XXXVI (September 1959) 8-19.

Leavesy, R. J. "Recruiting Detailmen," Medical Marketing. V(January 1956) 1-5.

Menzel, H. and Katz, E. "Social Relations and Innovation in the Medical Profession: Epidemiology of a New Drug." Public Opinion Quarterly. XIX (Winter 1955-56) 337-352.

Mosel, J. N. "Incentives, Supervision and Probability." Personnel Administration. XXV (Jan-Feb 1962) 9-14.

"Salary and Bonus Plans Popular in Drug Field," (editorial) Sales Management. XLVII (July 15, 1951) 102.

Smyth, R. C. "How Industry Pays Its Salesmen." Management Review. XLVIII (December 1959) 20-25.

"Stocks Spur Salesmen." W. H. Rorer, Inc., Stock Bonus Plan. Sales Management. LXXXVIII (March 2, 1962).

Strother, G. B. and Johnson, L. "Scaling Non-Monetary Inducements to Employment." Personnel Journal. XXXIX (Fall 1961) 363-5.

Torbert, F. "Making Incentives Work." Harvard Business Review. XXXVII (Sept-Oct 1959) 81-92.

Theses, Dissertations and Papers

Eimicke, V. Wm. A Study of the Effect of Intensive Sales Training Experience Upon Measurable Abilities and Personality Characteristics of Salesman-Candidates. Ann Arbor, Mich.: University Micro-films, 1951.

Hammel, Robert W. Personal Promotion and the Hospital Market for Pharmaceuticals. Ann Arbor, Mich.: University Micro-films, 1959.

Hook, George B. An Historical Evaluation of the American Drug Market Since 1900. Ann Arbor, Mich.: University Micro-films, 1955.

Leavesy, Ronald J. The Professional Service Representative in the Pharmaceutical Industry; A Case Study of Turnover, Recruiting Practices, Selection, Training, Supervision, Communication, and Compensation. Philadelphia: Temple University Thesis, 1955.

Lisaius, Joseph Ignatius. "Evaluation of Marketing Programs of Pharmaceutical Manufacturers." Unpublished M. S. Thesis, Massachusetts Institute of Technology, 1954.

McEvilla, Joseph D. Competition in the American Pharmaceutical Industry. Ann Arbor, Mich.: University Micro-films, 1955.

Nagel, J. H. The Construction and Validation of the Forced-Choice Performance Rating for Pharmaceutical Salesmen and Analysis of the Characteristics Contributing to Overall Competence and Effort of These Men. Ann Arbor, Mich.: University Micro-films, 1955.

Stone, George Bailey. "A Long Range Economic Outlook for the Ethical Drug Industry." Unpublished M.S. Thesis, Massachusetts Institute of Technology, 1958.

Weintrob, Harry. "The Role of Product Promotion in the Marketing of Ethical Pharmaceuticals." Unpublished B. S. Thesis, Massachusetts Institute of Technology, 1958.

1961 Plant and Product Directory; The 500 Largest U. S. Industrial Companies. New York: Market Research Department, Fortune, 1961.

Reports and Government Documents

Earl, E. W. Jr. Determining Salesmen's Base Pay, A Role of Job Evaluation. New York: National Industrial Conference Board., Conference Board Reports Studies in Personnel Policy No. 98, 1948.

_____. Salesmen's Compensation Plans. New York: Management Research Division, National Industrial Conference Board. Conference Board Reports, Studies in Personnel Policy, No. 81, 1947.

Federal Drug Commission Reports. Special Report: Kefauver Hearings. Vol. 1. Washington, D.C.: Government Printing Office, 1959.

Great Britain Committee on Cost of Prescribing. Final Report. London: Her Majesty's Stationery Office, 1959.

Pharmaceutical Manufacturers Association. Report. (annual)

U. S. Congressional Senate Committee on the Judiciary. Administered Prices: Drugs. Washington, D.C.: U. S. Government Printing Office, 1961.

U. S. Federal Trade Commission. Economic Report on Antibiotics Manufacture, June 1958. Washington, D.C.: Government Printing Office, 1958.

U. S. Bureau of the Census, U. S. Census of Manufactures: 1958, Vol. II, Industry Statistics, Part 1, Major Groups 20 to 28. Washington, D.C.: U. S. Government Printing Office, 1961.

U. S. Dept. of Commerce, Office of Business Economics. Survey of Current Business. Washington, D.C.: U. S. Government Printing Office. (Selected Issues Utilized)

U. S. Congressional Senate Committee on the Judiciary, Drug Industry Antitrust Act: Hearings, 7 parts. Washington, D.C.: U. S. Government Printing Office, 1961 and 1962.