

THE USE OF DECISION-MAKING TOOLS BY THE
MANAGERS OF SMALL RETAIL FIRMS --
A FEASIBILITY STUDY

By

ROGER W. EGERTON

Bachelor of Science
Bethany Nazarene College
Bethany, Oklahoma
1957

Master of Business Education
The University of Oklahoma
Norman, Oklahoma
1963

Submitted to the Faculty of the Graduate College
of the Oklahoma State University
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Thesis Approved:

Kenton C. Ross

Thesis Adviser

John Wagler

Lloyd L. Garrison

Arnold C. Base

D. D. Durham

Dean of the Graduate College

788249

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CHAPTER I

INTRODUCTION

Retailing is a significant segment of our free economic system. It is the focal point of exchange and the primary marketing vehicle for the adjustment of discrepancies between production and consumption. The entire realm of our system of exchange is dependent upon the efficiency of the retailers. The consumer and producer are both dependent upon the retailer for survival.

The significance of retailing to our economy is readily apparent when one examines its quantitative aspects. Gist (1) reports that approximately ten million people, or thirteen per cent of our labor force, are involved in retailing.

Dalrymple and Thompson (2) find that nearly two-fifths of all non-farm establishments in the United States are retail firms. Additionally, Dalrymple and Thompson (2) report the ratio of retailers to manufacturers and wholesalers as more than seven to one. The sales volume by all retail establishments exceeded three hundred billion dollars according to the 1967 Retail Trade Statistics (3).

Census of Business (4) data indicate that small retailers, those with annual sales of \$300,000 or less, account for approximately ninety per cent of all retail firms. Small stores, according to Retail Trade Statistics (3), conduct about forty per cent of the total retail trade. Communities in rural settings are composed almost entirely of small

merchants. The amount of business conducted by small firms is a significant portion of the national business volume.

The small independent store is the very heart and lifeblood of small communities. The continued existence of the small rural community is inextricably tied to the success or failure of the retail firms located within it.

The high incidence of retail failures is costly to all segments of our society. The failure, or even the meager existence of marginal firms, is especially costly, in every sense of the word, where independent firms in small communities are concerned.

The identification of managerial capacity as the primary cause of retail failures is well supported by research. Likewise, the lack of wise decision-making based on the use of accurate information sources has been well founded.

Attempts to determine the reasons for continued reliance on intuitive management by retailers has received some attention. The two questions that have not been well researched, at least as they relate to small firms, are: What variables appear to be significant determinants of the use or non-use of decision-making tools? and, What actions would be necessary to increase the use of decision-making tools by managers of small firms?

The writer has been acutely aware and personally involved with the topic to be examined in this research for the past twenty years. Very simply, the problem may be stated as follows: Small independent retailers, are for the most part, finding it increasingly difficult to maintain their competitive posture in our changing economic environment.

One need not review the statistics or refer to the literature to realize that small merchants are finding the competitive climate increasingly difficult. Conversations with small-store owners immediately turn to the identification and discussion of many problem areas.

Large discount firms and chain stores have the advantage of purchasing power, price appeal, and expanded services. More significantly, they are able to use sophisticated data processing equipment, and they can employ knowledgeable management staffs for effective operations. Increased mobility and changing consumer shopping habits also tend to work against the small merchant.

It is apparent that if small retailers are to remain competitive, even to the extent of holding their current position, they must utilize the advantageous factors (flexibility, personableness, and market closeness) that are peculiar to small stores. Many writers now contend that the utilization of the small firm's natural advantages will not be enough to insure a competitive posture. The cost of doing business and the inability of small firms to compete for well-qualified personnel will demand changes. Owners and managers of small firms must be "managers in fact" and not merely "doers" of the work.

Observations and informal research point to management ineptitude as the crux of the problem. Interviews, consulting sessions, and a review of the literature make it clear that management decision-making aids are available, but little used.

The major supposition underlying the undertaking of this study is that the management of small retail firms can be improved by a feasibility study. The use of common decision-making tools in environments peculiar to small firms will need to be emphasized.

Nature of the Problem

Management at its crux implies that planning, coordinating, controlling, and evaluating are taking place. Hay (5) states that the functions of management evolve around the following basic factors of an enterprise: management, manpower, money, machinery, materials, methods, minutes, markets, and mobility or space. Additionally, Hay (5) lists information as a basic requisite of managerial functioning.

The sound implementation of the most basic managerial functions, even in very small firms, cannot be carried out effectively unless decisions are made on the basis of sound operating information.

The tools and aids that provide the needed data for effective decision-making are available in virtually every functional area of retailing. Accounting tools, for example, that relate to sales, expenses, financing, purchasing, inventories, and profitability have long been established as information sources for decision-making. Similarly, information-providing tools and aids are available for the functional areas of personnel, merchandise handling, promotion, customer relations, financing, plant and equipment, and expense control.

Informal research, management interviews, observation studies, and experience tend to indicate that, for the most part, very few of the available tools are being employed by small retailers. It may be reasoned that the primary variables that are causative of the use or non-use of a majority of the available tools can be categorized as education, experience, environmental, and motivational.

In-depth discussions with over one hundred managers of small retail firms indicated that quite often they were unaware that many of

the existing decision-making aids were available. Occasionally, they were familiar with some of the tools, but were not knowledgeable about their relevance to actual decisions that were being made on a purely judgment basis. Education must be considered as a primary variable affecting the use of decision-making tools.

In some instances the retailers possessed some knowledge of several of the tools, but they verbalized the non-utilization of them as being due to the lack of experience with the mechanics of implementation.

The managers often expressed a desire to utilize selected tools and recognized the need for help in making decisions. They felt that environmental factors, such as time, staff, cost, equipment and supplies, organization structure, or accounting procedures, made their availability and use impractical if not impossible.

Naturally, there were a number of managers who simply believed that decision-making aids and tools were not worth the time, effort, or cost required for their use. Motivation is a crucial variable in any endeavor that requires change. A very key point, and one that is often missed, regarding the use of tools is that the perceptions retailers hold about the reasons for use or non-use are vital, regardless of whether they are correct or not.

If materials (tools-aids) that will be useful, practical, and accepted by small retailers and which will be relevant for teaching potential retail managers are to be adapted, the following areas need to be researched. First, there is a need to develop profiles that accurately depict the education and experience backgrounds of small retailers. Secondly, a clearer picture of the motivation influencing perspectives held by small retailers is needed. Third, additional

information is needed concerning the operating environments which are peculiar to small retail firms in general.

Statement of the Problem

The purpose of this study was to determine the feasibility of developing measures whereby common decision-making aids could be utilized by small store managers.

The central purpose of the study demanded an examination of three a priori problems. First, what are some of the common decision-making tools that might be appropriate for use by small independent retailers? Second, what is the extent to which any of the identified decision-making tools are being used? And third, how significant are the variables education, experience, environment, and motivation as they influence the use of the identified tools?

It is clear that the identification of appropriate tools and a determination of their current usage must precede the discussion of adapting tools for use by small firms. Additionally, an examination of the causative factors of use or non-use will need to be made. Inferences concerning the structuring of the tools will need to be made with full cognizance of the causative variables. Any adaptations of tools must fit the peculiar environmental conditions found in small firms.

Hypothesis

The basic procedure used in this study is of a semantic differential nature utilizing non-parametric statistical tests to evaluate and substantiate the significance of the findings. The research statements

requiring the use of the various non-parametric tests are in the order in which they will be used in the study.

1. There is no significant difference at the .05 level of confidence between the means of non-parametric data for a jury of experts and a sample of retailers concerning the need and use of decision-making tools.

2. There is no significant difference at the .05 level of confidence between the expected and observed rankings for the variables education, experience, and motivation. Any observed differences are merely chance variations to be expected in a random sample.

3. The rankings of the sample members on six identified environmental factors are unrelated when measured at the .05 level of confidence, and no patterns of significance may be noted.

The statistical tests concerning tool usage and influencing variables are requisite to an examination of the feasibility of adapting selected tools for use by small independent retailers.

Research Design

Several basic questions are inherent in the determination of the feasibility of adapting decision-making tools for use by small retailers.

(1) Which tools, from a selected list, are appropriate for use by small retail firms?

(2) To what degree are any of the selected tools being utilized?

(3) How significant, as causative factors of use, are the variables of education, experience, environment, and motivation as perceived by a sample of small retail managers?

(4) What is the nature of the education and experience of small retailers?

(5) What are the peculiar environmental conditions within which small retailers, in general, operate?

A representative list of decision-making tools was developed from literature sources germane to the field of retailing. Criteria for the use of each tool were developed.

A semantic differential scale was constructed to permit the ranking of each tool in terms of its appropriateness by a jury of experts and for rating the actual use by a sample of retailers. The rating criteria of the jury and sample were equivalent. Inferential, comparative statistics were employed to assess the degree of divergence of actual use by the sample from the jury's estimation of need.

Each tool was statistically evaluated in terms of the sample's perceptions regarding the significance of the variables of education, experience, environment, and motivation as determinants of use.

Data were collected from the sample concerning experience, education, and environmental conditions.

The design permits an analysis of: the use of a selected list of tools, the significance of four key variables (education, experience, environment, and motivation) as determinants of use or non-use, and the development of some profiles of small retailers. The design allows an interpretation of the data so that the feasibility of adapting tools for use by small retailers may be considered.

Terminology

Certain terms used in this study are peculiar to the field of retailing and require explicit definition.

Small retailers: The definition of small retailers used in this study is essentially the same as that which is employed by the Small Business Administration. In order to be classified as a "small retailer," a firm can have no more than ten employees and must be doing less than \$300,000 of retail business annually. Additionally, for purposes of this study, they must be sole proprietorships or partnerships and cannot be part of a chain organization. They may, however, be franchised for lines of merchandise.

Tools, aids, guides: any pictorial, numeric, or descriptive device that may be employed in the attention directing, information providing, or problem-solving situations encountered in a small retail operation.

Management: the individuals in each firm who have the responsibility and authority for making decisions of policy or the ultimate authority for passing or rejecting ideas.

Educational background: the degree of formal education and preparation held by managers that would enable them to utilize decision-making tools.

Environmental factors: the in-store limiting and enabling factors which affect the ability of managers to select, implement, and evaluate the decision-making tools. Specifically, in this study, these factors are staff, time, cost, equipment and supplies, organizational structure, and accounting procedures.

Profile: a generalized concept that approximates, in descriptive, quantitative or pictorial language, the real life or environment of the firm or its management.

Retail functions: Specifically, the operations necessary for a going concern are planning, acquiring, organizing, actuating, coordinating, and evaluating the firm's activities.

Tool adaptation: the restructuring and or simplifying of existing decision-making tools to fit the educational and environmental conditions commonly encountered in small retail firms.

Feasibility: practicability or reasonable possibility. Specifically, the possibility of adapting tools for use by small retailers within the practical limitations as they currently exist.

Scope of the Study

The scope of this study will be confined to: (1) an examination of the need and use of a representative list of tools for use by small retail firms; (2) a discussion of the educational and experience backgrounds of the sample of retailers and their environmental conditions; and (3) a summary analysis of the feasibility of adapting selected tools for use by small retailers.

Limitations of the Study

The firms included in this study are limited to a sample of forty randomly selected stores from an area of Southwestern Oklahoma bounded on the north by U. S. Highway 66 and on the east by U. S. Highway 81. The west and south boundaries are the Oklahoma state boundary lines.

Only those firms meeting the "small retail" criteria previously explained were used. The firms were selected from the following trade classifications: grocery, drug, hardware, furniture, appliance, gifts, book and supply, apparel, shoe, and sporting goods. Any inferences should be limited to characteristics and types of firms listed.

The tools and aids discussed are not intended as a complete listing, but are presented as a representative sample that might be appropriate for use by small firms.

The variables used in this study as determinants of the use or non-use of decision-making tools are limited to education, experience, motivation, and environmental factors. Specifically, the environmental factors include only staff, time, cost, equipment and supplies, organizational structure and accounting procedures.

Significance of the Study

The results of the study are clearly significant for the improvement of management capacities for small retail operators and for the development of educational materials and procedures. The results of the study may serve as a basis for developing material to acquaint retailers with the importance of decision-making tools. The findings can be used to develop materials for retail management seminars, to revise teaching materials and procedures for retail management classes, and to serve as guidelines in consulting with retailers on individual management problems.

All available evidence indicates that retail managers will find it increasingly necessary to use decision-making tools for the effective operations of their firms. It is hoped that this study will serve as

the initial basis for the development of a complete retail management training program. Additionally, the materials developed from the findings in this study may be integrated into teaching syllabi for collegiate-level, retail-management classes.

Ultimately, the study may have significance for the people of Southwestern Oklahoma. If the retailers of the area can increase their management capabilities, then undoubtedly the clientele they serve is going to be better served.

CHAPTER II

A REVIEW OF SELECTED RELATED RESEARCH AND LITERATURE

The literature of retailing is replete with materials concerning the dilemma of small retailers and the lack of sophistication employed in the decision-making process. Conversely, it appears that little research has been done to attempt a determination of the reported low degree of use of decision-making tools. Very few attempts have been made to assess the possibility of adapting existing decision-making tools for use by small retailers.

The review of the selected related literature in this study is, in essence, a review of the small retailer's competitive position. It also attempts to summarize the research findings concerning the status of retail management and decision-making at the retail level. Hopefully, this approach to the review of the literature will circumscribe and justify the area of concern studied in this project.

Small Retailing in Our Economic Society

Retailing, as an economic activity, has been criticized throughout the history of man. Cassels (6) reports that Plato referred to it as a "necessary evil." The general attitude toward retailing did not improve greatly until the advent of the Mercantilist Era. The stature of retailing has periodically been in disrepute even up to present times.

There can be no doubt about the importance of retailing as a major facet of our economic system. Gist (1) finds retailing to be a natural and productive human activity. More specifically, Gist (1) reports that "retailing evolves because of the gains over alternative systems of distribution" and that "retailing rests firmly upon an economic base that includes the following elements":

- (1) Specialization and division of labor
- (2) Transactional efficiency
- (3) Place convenience
- (4) The resolution of economic "discrepancies"
- (5) "Informational" activities
- (6) The provision of other "services."

From an employment standpoint The Survey of Current Business (4) reports that retailing provides the livelihood of approximately 10 million people or roughly 13 per cent of our labor force. Wingate (7) reports that small firms constitute over 90 per cent of all retail stores in the country and conduct about 39 per cent of the country's retail trade.

Retailing, as a phase of the distribution process, is an important economic activity from a cost standpoint. Cox (8) estimates distribution cost, of which retailing is a significant part, to be 41.7 per cent of the final buyer's dollar. Dun and Bradstreet's (9) report on "the cost of doing business" indicates that about 20 to 30 per cent of each retail sales dollar goes to compensate (depending on the type of business) the retailer for his activities.

Retailing is an important part of our American way of life, but

the small retail store, as we know it today, may be headed for a fight for survival.

The Position and Posture of Small Retailers

The competitive position of the small retailer appears to be waning. Dalrymple and Thompson (2) point out that in 1958 only 3.7 per cent of all retail firms reported annual sales of over \$500,000, but they accounted for 44.2 per cent of total retail sales. Firms with sales in excess of \$500,000 in 1963 accounted for 5.2 per cent of all retail firms and controlled 51.4 per cent of all retail sales. Current data, through 1967, indicate that the trend of decreasing volume for small stores has not abated.

Eight of the ten firm classifications used in this study are included in the Census of Business Retail Trade Statistics (3). Six of the eight types of firms showed a decrease in the number of establishments from 1963 to 1967.

Konopa (10) reports that from 1948 to 1963 the number of retail establishments decreased 3.5 per cent, while total retail sales were increasing 48.6 per cent. The census data available as of 1967 indicate that these trends are continuing.

There are a few exceptions to the small retailer's declining position. Taylor (11) indicates that 50 per cent of the new grocery stores, 77 per cent of new drug stores, and 85 per cent of all new shoe stores are in shopping centers. Many of these firms are small firms, but they are not like the typical small-town independent with which this study is concerned. Weiss (12) feels that the only exception to

the demise of the small retailer will be in the "carriage-trade type of fine specialty stores." Weiss (12) in very strong terms states:

. . . there is no alternative for the independent! He must meet size with size -- and he can't do it on his own. The independent's ability, as a true independent, merely to survive in the retail fields mentioned (grocery, drug, furniture, hardware, appliance, and soft goods) is, at best, dubious. His ability to grow dynamically, as a true independent, is almost zero.

→ The social and economic factors generally attributed as working against small retailers appear to be well entrenched. A Business Week (13) article suggests the following factors as reasons for fewer stores: Large chain stores are getting bigger, discounters are becoming increasingly competitive, the American public is more mobile, fashions are rapidly changing, and there is a blurring of the lines of retail specialities. Data from the Journal of Retailing (14) indicate that the mobility of the American family and the maldistribution of consumer incomes puts a premium upon the mobility of the retailer. This mobility is strongest in the chains and weakest in the small independent. Many current writers believe that retailers will not be able to control the rising trend of expense ratios and this trend will be a detriment to small firms. ↙

→ Markin (15) explains that since the Korean War retailing has been in the throes of change. The thrust of this change has been concerned with the cost-margin spiral and productivity. The small-scale operator bears the brunt of the attrition because he is least able to innovate and offset increasing costs. ↙

The facts seem to make it quite clear that small retailers will have to become adroit managers if they are to hold their relative competitive positions.

Management Functions in Retailing

Small retailers have traditionally been intuitive managers. The growth of large firms, changes in our society, and the failure rate of small stores clearly indicate that intuition is no longer enough for continued success. John M. Belk (16) presents the small retailer's need for improved management very clearly.

Management, through its increasing sophistication and influence, has become more of a deliberate and objective process, rather than an intuitive response.

Stockdale (17), in a study of the variables that are significantly related to economic success, presents the amount of time spent in management and supervision and the number of information sources used as being crucial to success.

Middle managers in larger firms are not unlike small store managers in the performance of many activities. Carmichael (18) finds:

The managerial competency was reported as the most crucial of all competency areas. The activities that cluster around supervision, analysis, problem-solving, decision-making, communicating, human relations, and innovation were found to be the most crucial activities contributing to the success of middle managers.

Magruder (19) claims to have established a framework of management around which all other aspects of a firm's operations can be fitted.

Bennett (20) in a study of managerial decision-making in small firms summarizes that mortality studies highlight managerial and environmental conditions as prime determinants of failure. Further, he reports that the important factors related to business longevity are subject to management control.

Dun and Bradstreet's (21) studies of business failures indicate that incompetence and inexperienced management cut across the spectrum

of types of retail firms and apply in 90 per cent of the cases of failure.

There can be no doubt that in our present economic structure, even a small retailer must be more than a doer of the day's work. Wingate (22) believes the small firm manager has at least five distinct activities: planning, controlling, organizing, coordinating, and supervising the work of others.

→ Regardless of the list of managerial activities one selects, the successful day-to-day operation of a retail firm requires the constant activity of decision-making. It is becoming increasingly clear that successful decisions must be based on tools and aids that have been developed from reliable data sources. ↗

The recognition of the need for improved decision-making is not a recent finding. Bach (23) writing in 1959, in the now renowned Pierson report, states that making managerial decisions and getting them carried out effectively is the core of the manager's job. Similarly, Silk (24) believes that the focus of business studies should be upon managerial decision-making.

Studies concerned with business failures, profitability, stability, and growth clearly indicate that small merchants in particular are not well equipped for the decision-making process.

Hartley (25) concludes that retailers, in general, have had the reputation of being backward in using objective management tools. Additionally, he finds that the increasingly dynamic and complex retail environment is putting new demands on retail decision-making.

↘ Neeley (26), in a study of apparel stores, found that accounting

systems and practices, analytical techniques, and budget planning (all of which are essential to decision-making) were weak or lacking.

Bennett (20) concludes that individuals continue to enter management positions for which they are ill-equipped. Success, however, in a small firm depends more upon how they improve their decision-making skills rather than on what they initially bring with them.

Kunsmiller (27) found that the success of small retailers depends upon their ability to employ rational processes in policy formulation, problem-solving, and decision-making.

Certainly, the need for improved decision-making is apparent. Yet, with all the research tools and aids available not much improvement appears to have taken place. Kunsmiller (27) reports that most research in the area of retailing has largely been confined to status studies and is so general in nature that it has had little influence on the management of small enterprises.

Luchsinger (28) finds that an upgrading of staffs will be crucial for success in retailing. A sensitivity for tools and techniques of scientific retail management will be necessary to meet future challenges both in education and in practice.

The two basic assumptions that fostered the idea for this study were: (a) that decision-making tools were available and sorely needed for continued success; and (b) that small retailers are vital to the economic stability of many areas and thus managerial help must be provided. This help must be available for present as well as potential managers.

King (29) strongly supports both assumptions leading to the need for this study. His study indicates that there exists a multitude of

management aids for small-scale retailers. In line with these and other similar findings, this study also attempts to determine the reason for the non-use of existing tools.

King (29) also states that one important way of increasing the "value added" by small-scale retailers to our economic system is to improve the performance of managers of the entrepreneurial functions. Improved managerial performance and the development of materials for use by small firm managers is the ultimate goal of this study.

Problem Areas of Retailing

McGregor (30) makes five points that substantiate the assumptions underlying the need for this study. First, the number of failures in retailing is excessive. Second, the primary reason for a majority of the recorded retail failures is management ineptitude. Third, there is no justification for inexperienced, uninformed, or inept management today. Fourth, there are more information sources and better devices available today for decision-making in retailing. Fifth, improved retail management performance is dependent upon the application of modern techniques to the solving of basic retail problems.

The first two points made by McGregor have previously been supported by research in this chapter. The statements indicating that the problem areas of retailing can be defined and that tools are abundantly available can also be substantiated.

Studies by Perkins (31), Crampon and Schweizer (32), and McKeever (33) have dealt particularly with the identification of problems of small retailers in western states. Although the terminology varies among the studies, the basic problem areas are frequently categorized

as relating to personnel, merchandise, sales and promotion, expense control, credit and collections, plant and equipment, and accounting and finance.

This listing of problem areas has been selected as a guide for the selection of tools to be studied in this paper.

Broom and Longenecker (34) also find management to be the culprit in most retail failures. An examination of their table of contents also supports the previously identified areas as being of basic concern to retailers.

The major areas of problems for retailers appear to be enduring as well as basic. The now classical text by Comish (35) follows the same topical areas.

Proxmire (36) and Mayer and Goldstein (37) add location and competition to the list of basic problem areas. Location is of concern to the proposal of a new firm as well as to established firms that are growing. Some tools relating to location were, therefore, included. Competition is, for the most part, an uncontrollable management factor and was not directly a part of this study.

A study by Deran (38) concerning successful shopkeepers and one by Etcheson (39) dealing with business terminations further highlight the need for decision-making information tools.

Preston (40) believes that the key to business success is the effective response to a changing environment. Effective responses (decision-making) depend upon analysis and planning, both of which demand the use of information providing tools and aids.

Decision-Making Tools and Aids

Even a cursory examination of recent publications makes it evident that tools and informational aids are abundantly available.

The tools used in this study and their sources are presented by functional areas. In many cases the specific tools and aids listed could be found in other basic texts related to the respective management areas.

Personnel

Chruden and Sherman (41) present a description of a "performance evaluation checksheet" and a discussion of a "job analysis."

The use of an "interview checksheet" or guide is discussed by Beach (42).

The "employment application form" may be found in most texts dealing with personnel management. Flippo (43) discussed both its use and value.

Many firms and organizations have developed model "training manuals." Generally, retailers can obtain exemplary models for guides. Preston (40) discusses the use of a training manual from the standpoint of the independent business.

Employment tests are generally available from test publishing firms and descriptions may be found in many published test manuals. Lipsett, Rodgers, and Kentner (44) present a brief discussion of some of the tests of special interest to the small business operator.

Merchandise Control

Virtually any current textbook dealing with accounting principles

and most retail management texts will include a host of tools and aids for consideration by retailers. The merchandise control tools and their sources are listed as representative of those commonly available.

Davidson and Doody (45) present information concerning "inventory controls," both periodic and perpetual systems, and data on "resource rating" information. Jones' (46) text Retail Management contains discussion material and models of "inventory costing by the retail method," "gross margin per square feet of floor space," "open-to-buy analysis," and "purchase terms analysis." Duncan and Hermanson (47) present the "stock-to-sales ratio" as a useful tool for merchandise decision-making. The value and use of a "receiving report" are reported by Wingate and Weiner (48). Entenberg's (49) text includes a discussion of the causes of markdown and how to control markdowns. A "markdown control sheet" could easily be developed from the material presented. The calculation of markups and "markup formulas" are shown by Rice, Boyd, and Mayne (50).

Sales and Promotion

Vizza (51) presents data on "sales training plans" and "salesperson's productivity" as a means of improving sales revenues.

Gist (1) discusses the following tools and aids for retail decision-making: "sales increment formula," "trade area delineation formula," "retail store saturation index," and the "buying power index."

Duncan and Phillips (52) include a discussion of "sales forecasting" as a tool for retail management. "Gross sales analysis" is presented by Van Voorhis (53). Berke (54) presents an excellent discussion of "break-even analysis" as it relates to small marketers.

Descriptive models and data for calculating the break-even point are included.

Niswonger and Fess (55) present both the "inventory turnover calculations" and the "net sales to asset ratio." They present examples as well as a discussion of how the tools may be employed to aid management.

A discussion of the "appropriation of the advertising budget" may be found in most advertising texts. Davidson and Doody (45) discuss it in terms related to retailing. "Advertising media evaluation" is a very difficult task. Edwards and Brown (56) present an excellent discussion of the factors that should be considered.

Expense Control

Rising costs and the subsequent squeeze on profits make an accurate expense analysis a must for effective decision-making. Van Voorhis (53) presents an adequate discussion of "comparative expense analysis." Jones (46) supports the use of an "expense summary sheet" as a useful retail management tool.

Credit and Collections

An excellent text on credit and collection management is available by Shultz and Reinhardt (57). They present the three tools in this area that are used in this study. The credit and collection tools thought to be most appropriate for small retailers are "accounts receivable turnover," "aging chart of accounts receivable," and a "score card credit rating device."

Accounting and Finance

Niswonger and Fess (55), as well as most other accounting authors, include all of the tools selected in the area of accounting and finance used in this study. These tools are "the balance sheet," "profit and loss statement," "financial ratio and analysis," and "daily cash reports." They also present models and a discussion concerning the "ratio of fixed assets to long-term liabilities" and a "differential analysis for equipment replacement." Both Niswonger and Fess (55) and Gist (1) present excellent examples of the use of the "contribution margin concept" as an aid to management.

CHAPTER III

METHODOLOGY

The purpose of this study was to determine alternative ways to increase the feasibility of using decision-making tools by managers of small retail firms.

The procedural format of this study involved: selecting a representative list of decision-making tools for use by small retailers, analyzing and statistically testing the need and use of the tools, and analyzing and statistically testing the significance of variables that influence the use of the various tools.

The study was designed to permit inferences concerning alternative means of increasing the feasibility of using decision-making tools by small retail managers as they operate in environments peculiar to small retail stores.

Decision-Making Tools

A review of the literature related to retailing and small-business management was made to develop a list of decision-making aids and tools appropriate for small retailers. Other tools and aids were developed, based on the researcher's experience with retailing problems and by converting descriptive data into models of decision-making tools.

The practical aspects of the research did not permit the use of an all-inclusive list of possible tools. The fifty tools selected were

those that appeared to be most appropriate for use by small retail firms. The tools selected were generally representative of the decision-making instruments commonly employed by retail managers. The tools were diverse enough in nature to fit the common management functions pertinent to retail firms.

Criteria for the use of each tool by small retail managers was developed from literature sources, experience, and by visiting and auditing many retail firms. Twenty trips were conducted to visit with forty-three retailers to give the writer a more complete appreciation of the type of environments in existence in small retail firms. The observations made during the trips were very helpful in developing practical criteria for the use of the selected tools. (A list of the tools and the criteria for their use is presented in Appendix E.)

Jury of Experts

A jury of retailing experts was selected to assess the appropriateness of the various tools for use by small retailers and to evaluate the correctness of the criteria presented.

The jury was composed of seven experts in the field of retailing. The jury included noted authors and professors in the field of retailing, consultants, representatives of retail equipment firms, and managers of large retail firms who had previously had small retailing experience. In each case the individuals selected for the jury possessed a wide background of knowledge of the general area of retailing.

The jury members were selected on the basis of the following criteria: (1) a broad general knowledge of retailing, (2) an understanding of management practices and needs, (3) experience in dealing with

a variety of different types of retail outlets, and (4) a general knowledge of the use of tools and aids in managerial decision-making.

The major consideration, in the actual selection of jury members, was to maintain a balance among the types of members (authors, consultants, retailers, and sales representatives). The order of selection was by date of receipt of agreement to participate.

A list of the jury members is presented in Appendix H. Two of the jury members were managers of large retail stores located in Southwestern Oklahoma. It was necessary to include the two retail managers since both possessed experience in small stores, and they were familiar with the specific geographical area included in the study. The selection of the two retailers was made by a distributive education coordinator who was thoroughly familiar with their methods of operation, backgrounds, and general expertise.

Sample of Retailers

The sample consisted of forty retail owners or managers selected to include four managers of each of the ten types of firms. The types of firms selected were those most commonly found in cities in the selected geographical area. The classification of firms used was grocery, drug, hardware, furniture, appliance, gifts, book and supply, apparel, shoe, and sporting goods. The selection of the sample firms was made from a list of all of the firms that could be identified in the selected geographic region and which met the criteria established for small retail firms. Four hundred and eighty-three firms were identified in the outlined area. (A description of the geographical area and the cities included in the study are presented in Appendix G.)

The firms were identified by referring to telephone directories, Chamber of Commerce listings, and available published retail census data.

The data required for this study demanded the use of a very long questionnaire, personal observations, and an interview with the sample members. Time and cost elements made a purely random method of selecting the sample members prohibitive.

Travel routes were planned to include a majority of the cities in the selected area. The selection of firms to be contacted was made to give geographic dispersion over the identified area and to provide balance as to the location of the firms within their respective cities. No two firms in any category were selected from the same city.

Inasmuch as the sample selection was not purely random in nature, a statistical test of randomness was deemed advisable. The One-Sample Runs Test of Randomness was selected. The description and requirements of the test as presented by Siegel (58) verify the appropriateness of this test for the data employed. Siegel (58) points out that the test is designed for ordinal level data. Its use does not require the assumption of an underlying normal distribution of the variable being tested in the population.

The test is designed so that any value of a variable that is common to all firms can be utilized. The test of randomness for this study utilized the number of employees as the variable to be tested. The null hypothesis is that the number of employees reported by each firm will show a random distribution array when dichotomized by values that are greater and less than the mean number of employees for all firms in the sample. The rejection level of the null hypothesis was

set at .01. It is necessary to convert the r value produced by the One-Sample Runs Test to a z value when the sample size is greater than twenty. Siegel (58) indicates that a good approximation to the sample distribution of r is the normal distribution and thus z is the appropriate statistic for interpreting data for large samples.

Reference to Table A in Siegel's book Nonparametric Statistics (58) indicates that a calculated z value of .0007 has an associated probability $\geq .5000$. Inasmuch as the probability ($p = .5000$) associated with the observed pattern of number of employees per firm is greater than the level of significance (.01) the null hypothesis was not rejected. The sample is a random one when the number of employees per firm is used as the decision variable.

Data Instruments

A questionnaire consisting of each of the tools selected for use in this study was submitted to the jury of experts. (Appendix E contains a specimen copy and a listing of all the tools and the criteria for their use.)

The jury members used a semantic differential rating scale to assess the appropriateness of the various tools for use by small retailers. They also marked their evaluation of the correctness of the criteria suggested for the use of each tool.

The members of the jury were instructed to make their evaluations in line with factors that were used to delimit the firms in the sample. (i.e. ten or fewer employees, \$300,000 or less of business annually, and independent ownership and management of the firm.) The delimiting criteria is essentially the same as that which is employed

by governmental and research agencies in classifying small retail firms. Additionally, the jury was asked to make their evaluations as they would generally be applicable to the management of the firm classifications selected (i.e. grocery, drug, hardware, book and supply, furniture, shoes, apparel, gifts and accessories, appliances, sporting goods). The classification of firms selected closely parallels that which is commonly used by the Small Business Administration and other research groups.

The structure of the instrument used to determine the degree of use for each of the selected tools by the sample was as follows: Each tool was named, identified as a device of a particular management area, and supplemented by a brief description of the tool. The description incorporated the criteria that the jury deemed necessary for its use.

Each retailer in the sample was asked to review the description of the tool and to rate, by the use of a semantic differential scale, the degree to which the tool was being utilized. The semantic differential values used by the jury and the sample were tantamount in nature and structure so that inferential statistics could be used to evaluate the findings.

The sample members also used an ordinal level scale to indicate their perceptions concerning the importance of the variables (education, experience, motivation, and environment) as determinants of the use of each of the tools.

Each retailer completed a personal questionnaire concerning his education, experience, and the environmental factors concerning his firm. This data was utilized to develop profiles of the retail managers and thus served as a guide in the discussion concerning the

feasibility of use of the various tools.

The questionnaire was pre-tested with ten retailers to clarify any points concerning structure, wording, and the type of response which was sought. Additionally, the responses from the ten pre-test members allowed the early development and testing of the necessary statistics and computer programs.

Data Collection

The process of collecting the data for this study involved the use of a personal interview, a structured questionnaire, and observations by the researcher.

Visits were made to the previously selected firms, and the nature of the research was explained to the owner or manager. If the individual agreed to participate in the study, a personal interview was conducted to complete the questionnaire. The retailer also compiled the personal section of the questionnaire while the researcher was making observations concerning environmental factors of the firm.

Jury data were collected by a mail questionnaire. Each jury member received complete instructions concerning the nature and purpose of the study as well as instructions concerning the actual marking of the data.

Statistical Analysis

The core of this research centers upon a comparative analysis of the mean ratings assigned to each tool by the members of the jury and the sample. An analysis of the variables (education, experience, motivation, and environment) was made to determine the significance of the

influence they have on the use of the various tools.

The first stage of the analysis was a comparison of the mean ratings assigned to each tool by the members of the jury and the sample. The mean rating value of the jury is indicative of their estimation of the worth and need of this tool for effective retail decision-making. The mean rating value of the sample is indicative of the degree which retailers are using the tool. The same criteria was employed by both the jury and the sample in assigning the ranking values. Each tool was deemed to be receiving insufficient use as a management aid if the mean rating value of the sample was significantly lower than the mean rating value of the jury.

The computer programs used to analyze the data and to compute the statistical test in this study were developed by the computer technology staff at Southwestern State College. The programs were developed for use on the 1130 model IBM computer. The program decks have been filed for each phase of the study.

The programs utilized in the handling of the data were developed from a small sample of test data, and the results of the trial program were verified by hand calculations. Additionally, the results of the actual data analysis were checked for verification.

Original programs were developed for each of the statistical tests to be performed. In each case the program was developed from a completed and verified model as presented by Siegel (58). Each program was tested for correctness by using the data presented in the various models. The results of program "runs" employing actual data from the study were also verified by hand calculations.

The Mann-Whitney U Test of mean differences was selected for the

analysis of the jury's and sample's responses concerning tool uses and needs. The Mann-Whitney U Test is a nonparametric test requiring the use of only ordinal level data. It also avoids the assumption of a normally distributed population. The Mann-Whitney U Test is the equivalent of the parametric "t" test of significant differences in mean values of two independent samples. Popham (59) points out that:

The U test is a powerful non-parametric technique and may frequently be employed in place of the parametric t test with little loss in power efficiency.

The null hypothesis (H_0) was that:

No significant differences existed between the mean ratings of the jury and the sample members on each of the selected tools as determined by the U test.

The alternative hypothesis (H_1) is that if significant differences exist between the mean values (i.e. the jury's mean value for any given tool is significantly higher than that of the sample) an analysis is warranted to determine the variables that contribute to the low degree of use. The rejection of the null hypothesis implies that small retailers are not using a given tool to the degree deemed necessary by the jury of experts for effective management.

Two additional computations are needed when a large sample (greater than twenty) is being used. First, the test must be adjusted to account for ties in the ranking values. Additionally, the U value must be converted into a z value to permit the determination of significance when large samples are used. The formulae for the statistics "U" and "z" are given in Appendix F.

The major variables likely to be determinants of the degree of use of the tools are education, experience, motivation, and environmental factors. Experience and research indicate that a low degree of use for

any given tool may result from a lack of knowledge (education) of the tool. The non-use of any given tool may be due to a lack of exposure (experience) with its use. Environmental factors might prevent the use of some tools. Additionally, the manager may not be inclined toward the use of a tool because he does not feel it to be worth the effort (motivation) needed to employ it.

The variables influencing the use of a tool were statistically analyzed in each case where the sample and jury mean ratings were significantly different as indicated by the Mann-Whitney U Test.

The Kolmogorov-Smirnov test is a Chi Square type test of the "goodness of fit" nature. It is employed to test the significance of the variables as determinants of use for each of the tools. Siegel (58) supports the use of the Kolmogorov-Smirnov test to determine significant differences between observed and expected values with the following statement.

Briefly, the test involves specifying the cumulative frequency distribution which would occur under the theoretical distribution and comparing that with the observed cumulative frequency distribution.

The power of the Kolmogorov-Smirnov test is also pointed out by Siegel (58).

The Kolmogorov-Smirnov one-sample test treats individual observations separately and thus, unlike the X^2 test for one sample, need not lose information through the combining of categories. . . . These facts suggest that the Kolmogorov-Smirnov test may in all cases be more powerful than its alternative, the X^2 test.

A null hypothesis was developed to the effect that there will be no significant differences, at the .05 level of rejection, between the observed mean and the expected mean value for the education, experience, and motivation variables on any given tool. If the sample members

do not perceive a variable as being a significant factor in the use of a given tool, the expected mean rating would approximate the mean value of the possible responses. If the null hypothesis can be rejected, it may be concluded that the variable being tested is a determinant of the degree of use for a given tool. The computational procedure for the Kolmogorov-Smirnov test is given in Appendix F.

The probable cause of any observed low degree of use could be the result of environmental factors. Basically, the environmental factors for this study may be categorized as staff, time, finances, organizational structure, equipment and supplies, and accounting procedures.

A test was needed to determine the degree of compatibility among the sample members concerning the importance they attached to each environmental factor as a determinant of use for any given tool. Siegel (58) indicates that the proper test for such an analysis is the Kendall Coefficient of Concordance: W .

The Kendall Coefficient of Concordance: W . . . is a measure of the relationship among several rankings of N objects or individuals. The Coefficient of Concordance would then be an index of the divergence of the actual agreement shown in the data from the maximum possible (perfect) agreement.

The sample members ranked the environmental factors by using a hierarchy of numeric values; thus, the computations of a " W " of correlation of agreement was possible. The interpretation of the " W " is also reported by Siegel (58).

A high or significant value of W may be interpreted as meaning that the observers or judges are applying essentially the same standard in ranking the N objects under study.

It should be understood that a significant " W " does not imply that the ranking is correct, but only that agreement exists among the sample

members as to the relative importance they attach to each of the variables.

We wish to know how the sample members perceive the importance of the environmental factors as being influential factors affecting the use of the various tools. The Kendall Coefficient of Concordance: W is the correct statistical measure to permit inferences concerning the environmental factors. An additional computation will be necessary, as pointed out by Siegel (58), since our sample is large ($N > 7$):

When N is larger than 7, the expression of the formula: $X^2 = \frac{s}{1/12kN(N+1)}$ is approximately distributed as Chi Square with $df = N - 1$. That is the probability associated with the occurrence under H_0 of any value as large as an observed W may be determined by finding X^2 by the above formula and then determining the probability associated with so large a value of X^2 by referring to a table of critical values of Chi Square.

The formula for computing the value of X^2 (converted W value) for the significance of the degree of compatibility among the environmental factors is presented in Appendix F.

The design for this study was intended to develop a selected list of decision-making tools appropriate for small retailers, determine the degree to which the selected tools were being used by small retailers, and to identify the variables that were most influential for use or non-use of each of the selected tools. The design allows an interpretation of the data so that the feasibility of adapting the tools for use by small retailers may be considered.

CHAPTER IV

SAMPLE CHARACTERISTICS

The purpose of this study was to determine if it would be feasible to develop measures or procedures whereby selected decision-making aids can be more effectively utilized by small store managers.

The probability of increasing the feasibility of adapting tools for use by small retailers hinges upon four major determinants. First, retailers must possess sufficient educational backgrounds to understand the need for decision-making tools. The various tools require certain levels of education for their effective implementation. Second, experience in the various functional areas of retailing would influence both the receptiveness of managers to use decision-making tools and the retailers' ability to profit from the use of the tools. Third, environmental factors may limit or enable the retailers' use of certain tools. Regardless of the retailers' background, they must have the staff, finances, and equipment necessary for the use of the selected tools. Fourth, motivation is always a factor in the determination of human action. The retailers' perception of the worthwhileness of the selected tools will influence their decisions about the use of management aids regardless of their backgrounds or the environments within which they operate.

The format for analyzing the data in this study will be as follows:

- a. The general characteristics of the sample will be presented

- in terms of education, experience, and environmental factors.
- b. A comparison will be made of the need and use of the selected tools as expressed by a jury of experts and the sample.
 - c. The sample's reported perspectives concerning the importance of education, experience, and motivation will be analyzed.
 - d. An assessment will be made of the relative importance that retailers attach to the various environmental factors.
 - e. Correlations among the various responses reported by the sample will be made to strengthen the inferences concerning the feasibility of using the selected tools.

The fifty tools selected for use in this study will be grouped in eight categories as they relate to functional areas of retailing. After the data have been analyzed in terms of the hypotheses, alternatives concerning the feasibility of use will be considered for each of the functional areas.

Educational Background

The use of the different decision-making tools requires varying degrees of knowledge. Some tools require a sophisticated understanding of specific areas of knowledge, while other tools may be employed with a limited amount of specialized expertise.

The general level of education is presented for the sample members in Tables I through VI. The general educational profiles will be used in the discussion of alternative ways of improving the feasibility of using the selected tools. The average number of years of education for all sample members was 12.57.

TABLE I
YEARS OF FORMAL EDUCATION

Years	Number of Managers	Percentage
0-6	0	00.0
7-9	4	10.0
10-12	11	27.5
College 2 yrs.	11	27.5
College 3 yrs.	2	05.0
Degree	<u>12</u>	<u>30.0</u>
Totals	40	100.0

Sixty-two per cent of the sample completed high school. An additional 27 per cent had from one to three years of high school education. The type of high school educational programs undertaken by the sample is presented in Table II.

TABLE II
EDUCATION BY TYPE OF HIGH SCHOOL PROGRAM

Type of Program	Number of Managers	Percentage
Academic	31	77.5
No High School Education (Grades 10-12)	4	10.0
Agriculture	3	07.5
Business/Commercial	1	02.5
Distributive Education	<u>1</u>	<u>02.5</u>
Totals	40	100.0

Specific business training in high school and college as well as business seminars would be important determinants for using management decision-making tools. Tables III, IV, and V depict the business preparation of the sample members.

Thirteen of the forty sample members or 32.5 per cent had received no specific business training in high school.

TABLE III
HIGH SCHOOL BUSINESS COURSES

Subjects	Number of Managers	Percentage
Typewriting	24	60.0
Bookkeeping	16	40.0
General Business	6	15.0
Business Arithmetic	5	12.5
Economics	3	07.5

Over 60 per cent of the sample members had received some college work, but 57.5 per cent had not received any business courses in college. The specific college business courses completed by the sample members were arrayed as indicated in Table IV.

Many retailers attend workshops and seminars which are sponsored by suppliers, governmental agencies, and educational institutions. Undoubtedly, these specialized and accelerated programs are very significant in determining if decision-making tools might be employed. Each manager was asked to indicate whether he had attended any seminars and

workshops, the types of seminars and their duration, and whether he had received any specific management training. Sixty-five per cent of the managers had attended some type of seminar or workshop. Table V indicates the type of specialized training received by the managers.

TABLE IV
COLLEGE BUSINESS COURSES

Subject	Number of Managers	Percentage
Accounting	11	27.5
Management	9	22.5
Economics	8	20.0
Marketing	8	20.0
Retailing	8	20.0
Salesmanship	7	17.5
Advertising	7	17.5
Finance	4	10.0
Other	2	05.0

TABLE V
SEMINAR-WORKSHOP TRAINING

Type of Program	Number of Managers	Percentage
Sales	21	52.5
General Management	11	27.5
Visual Merchandising	3	07.5
Service	1	01.5
Retail Merchandising	1	01.5

Interviews with the managers indicated that they believed long training sessions were impossible because of the nature of their operations. Table VI indicates the duration of the seminars and verifies the attitude of most small retailers.

TABLE VI
DURATION OF SEMINARS -- WORKSHOPS

Duration	Number of Managers	Percentage
1 week or less	6	15.0
1-2 weeks	15	37.5
2-4 weeks	1	01.5
1-2 months	1	01.5
Over 2 months	2	05.0

Experience Background

The level of experience of small retailers in terms of years of business and previous management experience are important variables to consider in determining the feasibility of developing procedures for using decision-making tools. Tables VII and VIII present a profile of the experience for the sample in this study.

Twenty-four retailers or 60 per cent of the sample members had owned, operated, or been employed in some phase of retail business prior to their present positions. Table VIII shows the areas and amount of experience for the sample.

TABLE VII
TIME IN PRESENT BUSINESS

Length of Time	Number of Managers	Percentage
1 year or less	6	15.0
1-2 years	3	07.5
2-4 years	4	10.0
4-6 years	4	10.0
6-8 years	4	10.0
8-10 years	1	02.5
10 years or more	18	45.0

TABLE VIII
EXPERIENCE PRIOR TO PRESENT POSITION

Type of Experience	Number of Managers	Percentage
Selling	26	65.0
Customer Relations	24	60.0
Merchandise Control	23	57.5
Pricing	23	57.5
Purchasing	21	52.5
Advertising	19	47.5
Credit and Collections	19	47.5
Sales Management	17	42.5
Bookkeeping	15	37.5
Personnel Management	12	30.0

Environmental Factors

A number of environmental factors could reasonably be assumed to have an effect on the feasibility of the use of the selected tools. The number of employees would certainly be a consideration for the use of

some tools. Regardless of the proposed benefits of using any tool, certain activities such as selling, buying, merchandise handling, and financing must go on. The size of the staff must be considered. Table IX presents the number of employees per firm. The average number of workers per firm including the manager or owner was 4.4. Twenty-six retailers or 65 per cent of the firms had an individual designated as an assistant.

TABLE IX
NUMBER OF EMPLOYEES PER FIRM

Number of Employees	Number of Firms	Percentage
1	0	00.0
2	14	35.0
3	6	15.0
4	3	07.5
5	4	10.0
6	5	12.5
7	3	07.5
8	1	02.5
9	1	02.5
10	3	07.5

Other environmental factors that might affect the procedures considered for increasing the feasibility of using decision-making tools are summarized in Table X. In every firm the owner-manager or a specified individual was responsible for the bookkeeping activities. Likewise in every firm this individual also performed other duties.

Eighty-two per cent of the managers reported that the individual assigned to the bookkeeping duties spent less than 50 per cent of his time on that activity.

TABLE X
ENVIRONMENTAL VARIABLES

Variables		Number of Firms	Percentage
Designated Assistant:	Yes	26	65.0
	No	14	35.0
Departmentalized by areas of responsibility:	Yes	7	17.5
	No	33	82.5
Use of an outside accountant:	Yes	34	85.0
	No	6	15.0

Every firm used a cash register of some type, and all but two firms had an adding machine or calculator available. Two firms used time clocks, and one firm had a copying machine. No other equipment that would be related to the use of decision-making tools was encountered.

Specific references will be made to the data concerning general characteristics in the discussion of the various tools.

Procedure for Analyzing Data

The bulk of the data for this study deals with the following areas: the need and use of selected tools as reported by the jury and sample, respectively; the sample's perceptions about the importance of education, experience, and motivation as determinants of use; the amount of agreement among the sample members concerning the importance of environmental factors; and, the relationship or correlation among the several variables that are considered as important determinants of use. The four hypotheses are repeated here for review and clarification as they relate to inferences that will be made from the data.

Decision-Making Tools: Need and Use

The null hypothesis (H_{0_1}) is that there will be no significant difference between the ratings of the jury and sample concerning the need and use of selected tools. If the mean values of the jury's ratings concerning the expressed need for a given tool exceeds the sample's ratings concerning the tool's use to such a degree that the difference is significant, it may be inferred that the tool(s) are not receiving the amount of use deemed desirable for effective management.

Relationships Among Determinant Variables

The null hypothesis (H_{0_2}) is that there will be no significant difference between the sample's ranks and a random array of ranks concerning the importance of the variables of education, experience, and motivation. The rejection of the null hypothesis (H_{0_2}) for any of the three variables (education, experience, and motivation) will tend to

indicate that the sample members perceive of these variables as being important determinants for the use of the tools.

The results of testing H_{o_2} will be imperative to the discussion of procedures to be employed in making the use of the selected tools feasible.

Retailers' Perceptions of Environmental Factors

The null hypothesis (H_{o_3}) is that the sample's rankings of six environmental factors are unrelated. The rejection of the null hypothesis (H_{o_3}) would tend to indicate that the sample does view certain of the selected environmental factors as important determinants for using the various tools.

Retailers' Perceptions of Determinants of Use

The null hypothesis (H_{o_4}) is that the two variables being correlated are not associated in this study. The rejection of the null hypothesis (H_{o_4}) will indicate that a relationship exists between the two variables under study and, thus, inferences may be made concerning the interaction of several variables as they influence the use of a given tool.

Functional Areas of Retailing

The fifty tools selected for use in this study will be grouped into eight related areas for reporting expediency. Complete data and nonparametric analysis will be presented for each of the functional areas. Summary statements concerning the feasibility of using the various tools within each functional area will be made based on the

statistical analyses and by referring to the general profile of characteristics presented earlier.

CHAPTER V

PERSONNEL MANAGEMENT

No firm can be more effective than the personnel who are charged with the execution of its activities. It is imperative that data sources and decision-making tools be used for the wise selection, training, utilization, and evaluation of personnel. Regardless of the extent to which systems, procedures, or data sources are used, it is, ultimately, the wise use of personnel that determines the success of the firm.

Personnel Management Tools -- Selection, Control, and Evaluation

The tools selected for use in this study that relate to personnel management include Job Analysis, Training Manuals, Employment Application Forms, Interview Check Sheets, Employment Tests, and a Performance Evaluation Check Sheet. A description of each of the tools and the criteria for their use is presented in Appendices D and E.

Need and Use

The mean values representing the jury's and sample's responses concerning need and use of the six personnel management tools are presented in Table XI. Data for the tests of significant differences in the mean values reported are also presented.

TABLE XI
COMPARISON OF NEED AND USE -- PERSONNEL MANAGEMENT TOOLS

Tool	Jury-Need Mean Ratings	Sample-Use Mean Ratings	Statistical Test "Z" Value
Employment Tests	1.85	0.15	3.79*
Job Analysis	2.85	0.70	3.42*
Performance Evaluation Check Sheet	2.00	0.90	3.25*
Interview Check Sheet	1.85	0.85	3.15*
Employment Application Form	2.57	1.80	1.80*
Training Manual	1.57	0.90	1.49

Scale: Jury-Need

- 0-not an appropriate tool
- 1-useful for routine operations
- 2-provides useful decision data
- 3-helpful in planned decision-making
- 4-imperative to decision-making

Scale: Sample-Use

- 0-no knowledge of tool
- 1-limited knowledge, little or no data
- 2-some data is available
- 3-tool used in daily operations
- 4-part of planned decision-making

*Significant at the 0.05 level

Criteria for the use of each tool was developed from references and experience. The jury evaluated the appropriateness of the criteria for the use of each tool as they envisioned its use in small firms. The dual use of the criteria permitted the jury and the sample to base their ratings of need and use on essentially the same factors.

The null hypothesis was rejected at the .05 level of confidence for five of the six tools related to personnel management. The implication of this data is that the retailers were not employing the five

tools to the degree deemed necessary by the jury of experts for the most effective retail management practices. It is interesting to note that Employment Application Forms were receiving considerably heavier use (1.80) than the other five tools. The jury's estimation of need was also very high (2.57) for this tool, thus causing the difference to be significant.

The null hypothesis for the tool Training Manual was not rejected at the .05 level. Accordingly, the conclusion must be that the difference between need and use was not significant. The reported use of a Training Manual by the sample was quite low (0.90), but the mean rating of need by the jury was also very low (1.57). Both the jury and the sample apparently felt that a Training Manual is not a very necessary tool for small retail establishments.

Determinant Variables of Use

In each case where the tools were not receiving the degree of use deemed necessary by the jury, an analysis of the determinant variables was made. The retailers perspectives concerning the importance of selected variables were studied. The retailers were asked to rank on a semantic differential scale of 0.00 to 3.00 the importance they attached to the variables of education, experience, and motivation as determinants of use. Essentially, the retailers were reporting the level or degree of education, experience, and motivation they felt was necessary for the use of the selected tools. (The ranking values and their descriptions are presented in Appendix D.)

It is readily admitted that the responses concerning the variables (education, experience, motivation) are not tantamount to any exact

level that would be needed for using any given tool. It is important to note, however, that it is the perceptions that retailers hold about these variables, regardless of correctness, that influence their receptiveness of use. Consulting experience with retailers indicates that unless retailers see the variables of education, experience and motivation as being important, they will be hesitant to accept procedures for using the tools that are developed on the basis of these variables.

The statistic (Kolmogorov-Smirnov test) used to analyze the data for the variables education, experience, and motivation is a measure of the divergence of observed values from a theoretical distribution. In this study it is assumed that if the retailers do not perceive the variables as being important determinants of use, the theoretical distribution of values would approximate the mean of the possible scores. If the retailers view any of the three variables as significantly important to the use of any tool, the null hypothesis of no significant difference between the expected and observed distribution can be rejected. Projections about procedures or techniques for improving the feasibility for using the selected tools will need to be considered in light of the findings about these three variables.

The analysis for the variables education, experience, and motivation is presented in Table XII for the area of personnel management.

The Kolmogorov-Smirnov test accounts only for differences in observed and expected values. It does not distinguish between positive (above mean) and negative (below mean) values. It is important to note the mean values as well as the "D" values of significance.

TABLE XII
DETERMINANT VARIABLES OF USE -- PERSONNEL MANAGEMENT TOOLS

Tool	Variables	Mean Values	Statistical Tests "D" Values
Performance Evaluation Check Sheet	Education	2.70	0.50*
	Experience	2.07	0.50*
	Motivation	1.12	0.29**
Interview Check Sheet	Education	2.35	0.47*
	Experience	2.07	0.50*
	Motivation	1.00	0.39**
Job Analysis	Education	2.92	0.67*
	Experience	2.72	0.50*
	Motivation	1.05	0.24**
Employment Application Form	Education	1.95	0.45*
	Experience	2.02	0.50*
	Motivation	2.02	0.42*
Training Manual	Education	2.87	0.62*
	Experience	2.17	0.50*
	Motivation	1.25	0.25**
Employment Tests	Education	2.97	0.72*
	Experience	3.00	0.75*
	Motivation	0.20	0.57**

Scale: Education

- 0-of no value
- 1-of limited value
- 2-helpful but not essential
- 3-imperative

Scale: Experience

- 0-no experience
- 1-some retail experience
- 2-general managerial experience
- 3-actual experience

Scale: Motivation

- 0-of no value to small firms
- 1-limited use, regardless of cost
- 2-worthwhile if cost can be minimized
- 3-tool worth time, cost, effort for use

* Significant at the 0.05 level

** Significant at the 0.05 level-negative

Education and Experience. Education and experience were considered to be important variables for the use of all six of the personnel management tools. Employment Tests received the highest mean values indicating that the retailers felt that actual experience with the tests would be necessary. They also believed that formal education would be imperative for the use of this tool.

Employment Application Forms received the lowest mean values concerning the need for education and experience. The values for education (1.95) and experience (2.02) indicate that education is helpful, but not essential, and that experience of a general management nature would be needed.

Motivation. The mean values for motivation for each of the tools except Employment Application Forms was less than the mean of the possible responses (1.50). The general concensus from this data must be that the retailers felt that all of these tools except Employment Application Forms would be of limited value. Employment Application Forms with a value of 2.02 are felt to be worthwhile if their cost could be minimized.

Environmental Factors. The procedure for appraising the importance of environmental factors as determinants of use of the selected tools was to determine the mean value of the ranks assigned to each of six selected variables. Additionally, a statistical test was used to determine if a significant amount of agreement existed among the retailers concerning the importance they attached to the environmental variables. Table XIII presents the findings for the six personnel management tools.

TABLE XIII

RANKING OF ENVIRONMENTAL VARIABLES -- PERSONNEL MANAGEMENT TOOLS

Variables	Mean Ranking Values						Mean
	Tool 1	Tool 2	Tool 3	Tool 4	Tool 5	Tool 6	
Staff	4.92	4.82	4.80	4.92	4.57	4.57	4.77
Time	4.82	4.87	4.45	4.60	4.70	4.07	4.59
Cost	4.25	4.37	4.42	3.37	3.97	4.42	4.43
Equipment-Supplies	2.90	3.17	3.52	4.25	3.72	4.30	3.64
Organizational Structure	2.75	2.72	2.67	2.75	2.92	2.55	2.73
Accounting Procedures	1.35	1.02	1.12	1.10	1.07	1.07	1.12
Chi Square Value	113.07*	128.50*	111.66*	115.90*	103.49*	111.60*	

Rating Values 1.00-6.00, 6.00 is the highest value

*Significant at the 0.05 level

Tool 1 - Performance Evaluation Check Sheet
 Tool 2 - Interview Check Sheet
 Tool 3 - Job Analysis

Tool 4 - Employment Application Form
 Tool 5 - Training Manual
 Tool 6 - Employment Tests

The null hypothesis concerning the amount of agreement among the retailers about the relative importance of the six environmental factors was rejected for all tools in the personnel management area. The sample members were in agreement about the importance of the environmental factors as determinants of use for the six personnel management tools.

It should be remembered that a significant amount of agreement as indicated by the statistical test does not imply that the rankings are necessarily correct, but only that the retailers are in agreement about their importance. The use of tools hinges on the retailer's perceptions about determinants and it is for this reason that the amount of agreement was deemed important.

Table XIII presents the mean rating values for each of the tools and for each environmental variable. It is clear that staff, time, and cost were of utmost importance in the minds of the retailers as determinants of use for all six tools.

Three tools (Employment Application Forms, Training Manual, and Employment Tests) received high ratings on equipment and supplies. Organizational structure and accounting procedures were ranked quite low for all tools in the area of personnel management.

Personal interviews with many retailers indicated that several of the tools would be considered for use if programmed formats were developed. Employment Application Forms, for example, were not used in many cases simply because the manager did not have one available. The retailers felt that the cost, time, and staff requirements to develop or locate an application form were not worth the return received from its use. It became apparent in many cases that if a form could be

provided for using the tool or for collecting the data necessary for its use, that cost, time, and staff would not have been considered as crucial variables of use.

Proper utilization of the outside accountants would significantly increase the feasibility of any tool that requires accounting data for its use.

Summary -- Personnel Management Tools

Need and Use. The null hypothesis (H_{0_1}) was rejected for five of the six tools in the area of personnel management. The average value of use for the five tools where the null hypothesis was rejected was .88 as opposed to an average value of need by the jury of 2.224 (see Table XI). The implication of the data is that the five tools were not receiving the degree of use by the sample that the jury of experts considered to be necessary for effective management in this area.

Two of the tools in the area of personnel management require explanation. Employment Application Forms were receiving a relatively high degree of use. (1.80 on a scale of 0.00 - 4.00.) The null hypothesis was rejected, however, because the need (2.57) as expressed by the jury was also quite high.

The null hypothesis was not rejected for the tool Training Manual. The degree of use was low (0.90), but the jury's estimation of need of this tool for small firms was also quite low (1.57) thus causing the mean values to not reflect a significant difference.

Education and Experience. The null hypothesis (H_{0_2}) of no significant difference between the observed mean values for the variables education and experience and the mean of the possible values was

rejected for all six tools. For each tool the sample believed that education and experience were significant determinants that affect the use of these tools.

Motivation. The null hypothesis (Ho_2) of no significant difference between observed and expected values for the variable motivation was also rejected for all six tools. It is important to note that for all of the tools except Employment Application Form the observed mean values were less than the mean of the possible values. The implication is that the sample does not perceive of these five tools as being very important to the improved operations of their firms.

The mean value for the variable motivation for the tool Employment Application Form exceeded the expected value of 1.50. The sample perceived of this tool as being of enough value to them to warrant the cost and effort to use it.

Environmental Factors. The null hypothesis (Ho_3) to the effect that ranking values of the sample concerning the relative importance of environmental conditions are unrelated was rejected for all six tools. The sample does attach a hierarchy of importance to the environmental variables.

Staff (with a mean value of 4.77 on a scale of 1.00-6.00) was considered to be the most important environmental variable for all six tools. Time and cost were also considered as important variables with average ratings of 4.59 and 4.43, respectively. Complete data is presented in Table XIII.

Feasibility of Use

Motivation. It is apparent that motivation is a primary

determinant when considering the feasibility of using the selected tools in the area of personnel management. With the exception of the tool Employment Application Form, it will be necessary to devise methods of demonstrating the usefulness of each of these tools to the improved management of the firm.

Education. Education was considered to be important to the use of all six of the tools in the area of personnel management.

The tool Employment Application Form received a mean rating of 1.95 on a scale of 0.00-3.00, which ranged from "no value" to "imperative." The sample indicated that formal education (classes, seminars, and independent study) would be helpful but not essential. The mean ratings for the other five tools approached the level of "imperative," indicating that the sample believed a high level of education would be necessary for the use of these five tools.

The jury was also asked to indicate the level of education they felt would be needed for the use of each of the tools. Table XIV presents the data for the jury's and sample's estimation of needed education levels.

The jury's ratings indicate that they believe that education of a level equal to specialized seminars and/or some college would be needed for the use of the tools Performance Evaluation Analysis, Interview Check Sheets, Job Analysis, and Employment Tests.

The sample concurred with the jury's findings and additionally indicated that formal educational experiences would approach a level of imperativeness for Training Manuals as well as the four tools which received high ratings by the jury.

TABLE XIV
 COMPARISON OF NEEDED EDUCATION LEVELS --
 PERSONNEL MANAGEMENT TOOLS

Tool	Mean Level of Education Needed Jury	Mean Level of Education Needed Sample
Performance Evaluation Check Sheet	3.83	2.70
Interview Check Sheet	3.33	2.35
Job Analysis	3.28	2.92
Employment Application Form	2.42	1.95
Training Manual	2.16	2.87
Employment Tests	3.33	2.97

Rating Values, Jury: 1-Eighth Grade 4-College, less than four
 2-High School years
 3-Specialized 5-College Degree
 Seminars

Rating Values, Sample: 0-of no value
 1-of limited value
 2-helpful, but not essential
 3-imperative

The divergence of values between the jury and sample appears to be a matter of semantics. The jury rated the tools in terms of use while the sample was thinking in terms of both the preparation and use of Training Manuals.

The data indicates that it would be necessary to present instruction on the use of all tools except for Employment Application Forms. The instruction would need to deal with the criteria for the use of the tools and methods for actual implementation. It is reasonable to assume that the motivational aspects might be cared for coincidentally with the educational instruction.

Experience. The retailers in this sample perceived of experience of at least a general management level as being necessary for the use of all six personnel management tools. Actual experience with the use of the tools was indicated as necessary for Employment Tests and the mean rating for Job Analysis closely approached the "actual experience" level.

The jury was asked to indicate the level of experience they felt would be necessary for the use of the tools. Table XV presents the complete data for the sample and the jury.

General management experience appears to be sufficient for the use of three of the personnel management tools (Performance Evaluation Check Sheet, Interview Check Sheet, and Employment Application Form).

The sample felt that Job Analysis would require some experience with the tool, and both the sample and the jury indicated that actual experience with the tools Employment Tests and Training Manuals would be helpful.

TABLE XV
 COMPARISON OF NEEDED EXPERIENCE LEVELS --
 PERSONNEL MANAGEMENT TOOLS

Tool	Mean Level of Experience Needed Jury	Mean Level of Experience Needed Sample
Performance Evaluation Check Sheet	1.16	2.07
Interview Check Sheet	1.50	2.07
Job Analysis	1.28	2.72
Employment Application Form	1.28	2.02
Training Manual	2.00	2.17
Employment Tests	1.83	3.00

Rating Values, Jury: 0-no experience
 1-general management
 2-specific experience with tool

Rating Values, Sample: 0-no experience
 1-some retail experience
 2-general management experience
 3-actual experience with tool

The average experience in terms of years for the retailers in this sample was 6.5 years (see Table VII). It appears that the sample possesses the general management experience necessary for the use of most of the personnel management tools.

Actual experience of hypothetical cases dealing with the use of Training Manuals and Job Analysis would likely be needed.

There is some doubt about the appropriateness of Employment Tests as a useful management tool for small retailers. The sample indicated an extremely low score on this variable for motivation (0.20). The jury also gave this tool a relatively low ranking (1.85) indicating that it would be of some help in decision-making, but that it is not essential to a well-planned decision sequence.

Summary -- Personnel Management

The general pattern of the sample's responses may be summarized as follows. Use was very low for all tools with the exception of Employment Application Forms. Seventeen per cent of the sample was using this tool in guiding some aspects of their operations. Education and experience were deemed to be important determinants of use. Motivation was low for all tools except Employment Application Forms. Staff, time, and cost were considered the most significant environmental factors affecting the use of the personnel management tools with the exception of Employment Application Forms. Equipment and supplies received a very high rating (4.25) as a determinant for using Employment Application Forms.

The concensus from the data must be that retailers must be motivated to use these tools. They would have to be convinced that the

tools were worth the time, cost, and effort involved in their use.

Education and experience concerning the criteria for using the tools would be necessary for the use of Training Manuals, Employment Tests, and Job Analysis.

The environment ratings indicate that any procedures developed for using these tools would have to be made in full awareness of staff, time, and cost limitations.

CHAPTER VI

MERCHANDISE CONTROL AND SALES-PROMOTION TOOLS

Merchandise control encompasses many functions requisite to adequate sales activity. Promotional efforts, properly conceived, are the cause of sales. The tools selected as aids for merchandise control, promotion, and sales are included in this chapter.

The merchandise control tools will be divided into two areas. Direct merchandise control tools are specifically related to the controlling and appraising of inventories. The indirect merchandise control tools are aids in controlling certain aspects of merchandise handling, but which are not specifically related to inventories.

The sales and promotion tools will be divided into two sections. The first section of sales and promotion tools will deal with sales and promotion control. It also includes one tool specifically related to customer relations, but which is generally of use in the selling function. The second section of sales and promotion includes tools that are appropriate for the evaluation of this functional area of management.

Direct Merchandise Control Tools

Need and Use

The data relating to the jury's and sample's responses for the five

direct merchandise control tools is contained in Table XVI.

TABLE XVI
COMPARISON OF NEED AND USE -- DIRECT MERCHANDISE CONTROL TOOLS

Tool	Jury-Need Mean Ratings	Sample-Use Mean Ratings	Statistical Test "Z" Value
Merchandise Inventory Turnover	3.85	2.02	4.38*
Merchandise Age Analysis	3.57	1.45	4.34*
Inventory Control- Perpetual	3.14	1.35	3.97*
Inventory Control- Periodic	3.00	2.12	2.69*
Purchase Returns and Analysis	2.28	1.60	1.72*

Scale: Jury-Need

- 0-not an appropriate tool
- 1-useful for routine operations
- 2-provides useful decision data
- 3-helpful in planned decision-making
- 4-imperative to decision-making

Scale: Sample-Use

- 0-no knowledge of tool
- 1-limited knowledge, little or no data
- 2-some data is available
- 3-tool used in daily operations
- 4-part of planned decision-making

*Significant at the 0.05 level

The data clearly indicate that the null hypothesis was rejected for each of the tools considered for the area of direct merchandise control. The data given in Table XVI shows that with the exception of the tool Purchase Returns Analysis none of the selected tools were

receiving the attention thought to be consistent with decision-making management by the jury.

Purchase Returns Analysis with a z value of 1.72 and an associated probability of 0.427 very closely approached the rejection level of 0.05. The mean rating values indicate that the null hypothesis approached rejection because of a low expressed need by the jury rather than a high level of use by the sample.

Determinant Variables of Use

Data for the determinant variables education, experience, and motivation is presented in Table XVII.

Education. No single tool in the area of direct merchandise control received a mean rating on the education variable that was significantly different from the other tools. The average mean rating for the five tools was 2.13. The sample indicated that for each of these tools formal education (classes, seminars, and independent study) would be helpful, but not essential for the use of these tools.

Experience. The ratings for the variable experience followed closely the pattern experienced with the variable education. No particular tool had a mean rating that was different from the group as a whole. The average of the mean values was 2.07. The sample felt that general management experience was sufficient for the use of these tools.

Motivation. The sample expressed the opinion that the tools in this group with the exception of Inventory Control-Perpetual would be worthwhile if they could be provided in such a way as to minimize the cost of using the tools.

TABLE XVII
DETERMINANT VARIABLES OF USE -- DIRECT MERCHANDISE CONTROL TOOLS

Tool	Variables	Mean Values	Statistical Tests "D" Values
Merchandise Inventory Turnover	Education	2.10	0.50*
	Experience	2.05	0.50*
	Motivation	2.42	0.50*
Inventory Control-Perpetual	Education	2.45	0.50*
	Experience	2.20	0.50*
	Motivation	1.57	0.20
Inventory Control-Periodic	Education	2.00	0.50*
	Experience	2.05	0.50*
	Motivation	2.32	0.47*
Merchandise Age Analysis	Education	2.15	0.50*
	Experience	2.10	0.50*
	Motivation	1.97	0.37*
Purchase Returns Analysis	Education	1.97	0.47*
	Experience	1.97	0.47*
	Motivation	1.92	0.37*

Scale: Education

- 0-of no value
- 1-of limited value
- 2-helpful but not essential
- 3-imperative

Scale: Experience

- 0-no experience
- 1-some retail experience
- 2-general managerial experience
- 3-actual experience

Scale: Motivation

- 0-of no value to small firms
- 1-limited use, regardless of cost
- 2-worthwhile if cost can be minimized
- 3-tool worth time, cost, effort for use

*Significant at the 0.05 level

Inventory Control-Perpetual received a low rating on the motivation variable. The low rating can be accounted for in that many of the sample firms did not stock any large, expensive items. Since perpetual controls are more suitable for more expensive items, it is not surprising that the null hypothesis was rejected.

Environmental Factors. The environmental responses are indicated in Table XVIII. Again the null hypothesis of no agreement among the retailers about the relative importance of the six variables was rejected.

Staff (4.73), time (4.97), and cost (3.70) were considered the most significant environmental variables for the use of direct inventory control tools.

Accounting was an important variable for the use of the tools Inventory Turnover and Purchase Returns Analysis.

Feasibility of Use

Need and Use. The jury indicated that all tools in the area of direct inventory control should be used as a part of a plan to increase management's decision-making effectiveness (each tool had a mean "need" rating of at least 3.00 with the exception of Purchase Returns Analysis).

Two tools, Merchandise Inventory Turnover and Merchandise Age Analysis, received mean ratings in excess of 3.50. The jury felt these tools must be used as a part of a planned decision-making sequence for effective retail management.

Purchase Returns Analysis was considered by the jury to be helpful

TABLE XVIII

RANKING OF ENVIRONMENTAL VARIABLES -- DIRECT MERCHANDISE CONTROL TOOLS

Variables	Mean Ranking Values					Mean
	Tool 7	Tool 8	Tool 9	Tool 10	Tool 18	
Staff	5.05	4.30	4.92	4.67	4.72	4.73
Time	3.85	5.02	5.60	5.42	4.95	4.97
Cost	2.57	4.30	3.65	4.50	3.50	3.70
Equipment-Supplies	1.85	2.87	2.65	2.10	1.85	2.26
Organizational Structure	2.00	1.75	2.32	2.02	1.52	1.92
Accounting Procedures	5.67	2.75	1.85	2.27	4.45	3.40
Chi Square Value	149.53*	87.10*	129.01*	133.97*	127.19*	

Rating Values 1.00-6.00, 6.00 is the highest value

* Significant at the 0.05 level

Tool 7 - Merchandise Inventory Turnover
Tool 8 - Inventory Control-Perpetual

Tool 9 - Inventory Control-Periodic
Tool 10 - Merchandise Age Analysis
Tool 18 - Purchase Returns Analysis

but not necessary as a part of a planned decision-making sequence for effective retail management.

The sample indicated that none of these tools were part of a planned decision-making program. The retailers had some information available relating to the use of Merchandise Inventory Turnover and Inventory Control-Periodic.

Management had only limited knowledge concerning the tools Inventory Control-Perpetual, Merchandise Age Analysis, and Purchase Returns and Allowances. No specific data relating to these three tools were in use.

Education. The sample indicated that formal education would be helpful but not imperative for the five tools in the direct merchandise control area. Inventory Control-Perpetual with a mean rating of 2.45 would seem to demand some specific educational procedures for its use.

A comparison of perceptions of the jury and sample concerning educational needs is presented in Table XIX.

The tabular data (Table XIX) indicate that the sample believed formal education to be helpful, but not essential, for the use of these tools. The jury felt that high school level education was adequate in most cases. The somewhat higher values of 2.85 for Merchandise Age Analysis and 2.71 for Inventory Turnover would indicate the need for seminar-level educational experiences.

The mean level of education for all sample members was 12.57 years. Sixty-five per cent of the sample had attended management seminars of some type. The sample possesses the necessary educational background for employing the five direct inventory control tools.

Motivation. The mean of the motivation responses was 2.04 (see Table XVII), indicating that the sample believed the tools would be worthwhile if costs were minimized.

The environmental factors considered most important as determinants were time, staff, and cost.

It may be inferred from the data that generally the sample has the education and experience to use the direct inventory control tools. The sample also is receptive to their use if the tools were conducive to time, staff, and cost elements.

The starting point for improving the feasibility of using these tools would be to examine ways in which the tools could be utilized by firms with limited staffs and presented in such a way that utilization would not be too time-consuming.

TABLE XX
 COMPARISON OF NEEDED EXPERIENCE LEVELS --
 DIRECT MERCHANDISE CONTROL TOOLS

Tool	Mean Level of Experience Needed Jury	Mean Level of Experience Needed Sample
Merchandise Inventory Turnover	1.42	2.05
Inventory Control- Perpetual	2.00	2.20
Inventory Control- Periodic	2.00	2.05
Merchandise Age Analysis	1.85	2.10
Purchase Returns Analysis	1.85	1.97

Rating Values, Jury: 0-no experience
 1-general management
 2-specific experience with tool

Rating Values, Sample: 0-no experience
 1-some retail experience
 2-general management experience
 3-actual experience with tool

Indirect Merchandise Control Tools

Much of the success of a retail firm can be attributed to the wise ordering, handling, and controlling of merchandise. Eight tools were selected for use in this study that relate to indirect merchandise handling and control.

The tools identified as aids in indirect merchandise control are: Freight Claims, Resource Rating Guides, Purchase Terms Analysis, Receiving Reports, Merchandise Document Control Slips, Pricing Control Sheets or Invoices, Mark-Down Control Analysis, and Mark-Up Calculations and Conversions. A description of each of these tools is presented in Appendix D along with the criteria believed necessary for their use.

Need and Use

The data depicting the jury's and sample's responses regarding need and use for the eight indirect merchandise control tools are presented in Table XXI.

The null hypothesis of no significant difference between the jury's and sample's ratings for need and use was rejected at the .05 level of confidence for six of the eight indirect merchandise control tools (see Table XXI).

The null hypothesis was not rejected for two of the tools in this management area. Freight Claim Reports were receiving about the degree of use deemed desirable by the jury. Merchandise Document Control Slips received a very low rating on use. The null hypothesis was not rejected because the expressed need was also quite low.

TABLE XXI
 COMPARISON OF NEED AND USE -- INDIRECT
 MERCHANDISE CONTROL TOOLS

Tool	Jury-Need Mean Ratings	Sample-Use Mean Ratings	Statistical Test "Z" Value
Price Control-Invoice	3.71	2.27	4.20*
Receiving Report	3.28	1.85	3.34*
Purchase Terms Analysis	3.00	1.45	3.03*
Resource Rating Guide	2.42	1.40	2.88*
Mark-Down Control	1.71	0.82	2.58*
Mark-Up Calculations	2.57	2.10	1.15*
Freight Claim Report	2.57	2.20	0.89
Merchandise Document Control Slip	1.28	1.07	0.46

Scale: Jury-Need

- 0-not an appropriate tool
- 1-useful for routine operations
- 2-provides useful decision data
- 3-helpful in planned decision-making
- 4-imperative to decision-making

Scale: Sample-Use

- 0-no knowledge of tool
- 1-limited knowledge, little or no data
- 2-some data is available
- 3-tool used in daily operations
- 4-part of planned decision-making

* Significant at the 0.05 level

Determinant Variables of Use

Data concerning the sample's perceptions about the importance of education, experience and motivation as determinants of use are presented in Table XXII.

Education. The mean rating for the eight indirect merchandise control tools for the level of education was 2.01. The sample generally felt formal education would be helpful, but not essential. The mean value for Freight Claim Reports (1.40) and Receiving Reports (1.82) caused the null hypothesis to closely approach the rejection level and thus indicated that education was of only limited value in using these two tools.

Experience. General management experience was deemed adequate by the sample for the use of the indirect merchandise control tools. The null hypothesis was rejected for all tools, but closely approached the rejection level for Freight Claim Reports.

Motivation. It is significant to note that the motivational mean ratings for the tools Freight Claim Reports (2.35), Price Control (2.90), and Mark-Up Charts (2.65) were very high. Conversely two tools, Merchandise Document Control (1.12) and Mark-Down Control (1.17), were considered to be of limited use regardless of their cost.

Environmental Factors. The results of the environmental data are contained in Table XXIII.

The null hypothesis (H_{03}) was rejected for all eight tools. Staff and time were by far the two most important environmental factors for the use of the tools in this area.

TABLE XXII
DETERMINANT VARIABLES OF USE -- INDIRECT
MERCHANDISE CONTROL TOOLS

Tool	Variables	Mean Values	Statistical Tests "D" Values
Freight Claim Report	Education	1.40	0.25*
	Experience	1.60	0.25*
	Motivation	2.35	0.50*
Resource Rating Guide	Education	2.07	0.47*
	Experience	2.02	0.50*
	Motivation	1.82	0.30*
Purchase Terms Analysis	Education	2.02	0.47*
	Experience	1.97	0.47*
	Motivation	1.85	0.35*
Receiving Report	Education	1.82	0.32*
	Experience	1.95	0.45*
	Motivation	1.95	0.35*
Merchandise Document Control Slip	Education	2.07	0.45*
	Experience	2.07	0.50**
	Motivation	1.12	0.34**
Price Control-Invoice	Education	1.92	0.40*
	Experience	1.97	0.47*
	Motivation	2.90	0.65*
Mark-Down Control	Education	2.85	0.60*
	Experience	2.47	0.50**
	Motivation	1.17	0.27**
Mark-Up Calculations	Education	1.95	0.45*
	Experience	1.95	0.45*
	Motivation	2.65	0.50*

Scale: Education

- 0-of no value
- 1-of limited value
- 2-helpful but not essential
- 3-imperative

Scale: Experience

- 0-no experience
- 1-some retail experience
- 2-general managerial experience
- 3-actual experience

Scale: Motivation

- 0-of no value to small firms
- 1-limited use, regardless of cost
- 2-worthwhile if cost can be minimized
- 3-tool worth time, cost, effort for use

* Significant at the 0.05 level

** Significant at the 0.05 level-negative

TABLE XXIII

RANKING OF ENVIRONMENTAL VARIABLES -- INDIRECT MERCHANDISE CONTROL TOOLS

Variables	Mean Ranking Values								Mean
	Tool 14	Tool 16	Tool 17	Tool 19	Tool 20	Tool 21	Tool 22	Tool 23	
Staff	4.90	5.00	4.72	5.05	5.20	5.35	4.80	5.35	5.05
Time	5.20	5.22	4.62	5.37	4.87	5.42	4.82	5.10	5.08
Cost	3.82	3.95	3.35	3.90	4.27	3.32	4.35	3.35	3.66
Equipment-Supplies	2.30	1.87	1.77	2.65	1.97	1.75	2.12	2.87	2.16
Organizational Structure	2.10	1.80	1.60	2.17	2.07	2.95	1.75	2.57	2.13
Accounting Procedures	2.67	3.15	4.92	1.85	2.60	2.20	3.15	1.75	2.78
Chi Square Value	103.27*	126.64*	130.34*	128.90*	120.54*	139.59*	105.64*	117.87*	

Rating Values 1.00-6.00, 6.00 is the highest value

*Significant at the 0.05 level

Tool 14 - Freight Claim Report
 Tool 16 - Resource Rating Guide
 Tool 17 - Purchase Terms Analysis
 Tool 19 - Receiving Report

Tool 20 - Merchandise Document Control Slip
 Tool 21 - Price Control - Invoice
 Tool 22 - Mark-Down Control
 Tool 23 - Mark-Up Calculations

Feasibility of Use

Need and Use. Six of the eight tools in the area of indirect merchandise control were receiving less emphasis than the jury felt was warranted. Freight Claim Reports were being used nearly as much as was felt necessary, and the validity of using Merchandise Document Control Slips was questioned by the jury as indicated by its low "need" rating of 1.28.

Education. The sample indicated that formal education would be helpful but not essential to the use of each of the eight tools. A comparison of the jury's and sample's needed educational levels indicates that the sample possesses adequate education for using these tools. A comparison of the jury's and sample's estimation of needed educational levels is presented in Table XXIV.

Experience. The data in Table XXV indicate that the sample perceives general management experience as adequate for the eight indirect merchandise control tools. The jury generally believed that at least general management experience was needed, and in most cases some specific experience with the tools would be necessary.

The profile data concerning the sample's experience tends to indicate that the retailers have adequate experience to use the indirect merchandise control tools.

Motivation. The sample's estimation of the worth of the eight indirect merchandise control tools as indicated by their motivational scores can be divided into three general patterns.

Three tools, Freight Claim Reports (2.35), Price Control-Invoices (2.90), and Mark-Up Calculations (2.65), were considered as vital to

TABLE XXIV
 COMPARISON OF NEEDED EDUCATION LEVELS --
 INDIRECT MERCHANDISE CONTROL TOOLS

Tool	Mean Level of Education Needed Jury	Mean Level of Education Needed Sample
Freight Claim Report	2.57	1.40
Resource Rating Guide	2.28	2.07
Purchase Terms Analysis	3.14	2.02
Receiving Report	2.00	1.82
Merchandise Document Control Slip	2.25	2.07
Price Control-Invoice	2.28	1.92
Mark-Down Control	2.28	2.85
Mark-Up Calculations	2.00	1.95
Rating Values, Jury:	1-Eighth Grade 2-High School 3-Specialized Seminars	4-College, less than four years 5-College Degree
Rating Values, Sample:	0-of no value 1-of limited value 2-helpful, but not essential 3-imperative	

TABLE XXV
 COMPARISON OF NEEDED EXPERIENCE LEVELS --
 INDIRECT MERCHANDISE CONTROL TOOLS

Tool	Mean Level of Experience Needed Jury	Mean Level of Experience Needed Sample
Freight Claim Report	2.00	1.60
Resource Rating Guide	1.71	2.02
Purchase Terms Analysis	1.28	1.97
Receiving Report	1.71	1.95
Merchandise Document Control Slip	1.50	2.07
Price Control-Invoice	1.71	1.97
Mark-Down Control	1.85	2.47
Mark-Up Calculations	1.66	1.95

Rating Values, Jury: 0-no experience
 1-general management
 2-specific experience with tool

Rating Values, Sample: 0-no experience
 1-some retail experience
 2-general management experience
 3-actual experience with tool

effective retail management and worth the time, cost and effort required for their use.

Two tools, Mark-Down Control (1.17) and Merchandise Document Control Slip (1.12), were considered to be of limited value regardless of their cost.

The remaining tools -- Resource Rating Guide, Purchase Terms Analysis, and Receiving Reports -- received rating values approximating the mean for all tools. These tools were considered worthwhile if the cost of their use could be minimized.

Summary. The sample was considered to have adequate backgrounds in education and experience for the use of the indirect merchandise control tools. Motivation becomes the crucial variable because it has a high degree of relationship to the environmental factors. It can be concluded that for the tools receiving low motivation scores, the feasibility of improving use hinges upon demonstrating their value to the improved day-to-day operations of small firms.

For the tools receiving high (mean or above) values on the motivation variable, it will be necessary to develop means whereby these tools could be used within the staff and time limitations of small firms. Pre-planned forms with programmed instructions could serve to increase the feasibility of using these tools.

Sales and Promotion Tools -- Control

The functional management area of sales and promotion is divided into two areas. The first part of this section will deal with sales and promotion tools that relate to the controlling of operations. One tool dealing specifically with customer relations, but which is

generally related to promotional aspects, will also be considered.

The sales and promotion tools concerned with control include Sales Training Plans, Salesperson's Productivity Reports, Advertising Budget Appropriations, and Advertising Media Control. The customer relations tool that relates to this area is the Service and Adjustment Report.

The first and last steps in the selling sequence are awareness and action, respectively. Customers must be made aware of the firm's offer and sales programs and results must be evaluated for improved operations. The tools in this section were deemed important aids with which management might control sales and promotion efforts.

Need and Use

The results of the questionnaire concerning the need and use of the five tools in this section are presented in Table XXVI.

The null hypothesis (H_{01}) was rejected at the 0.05 level for the two sales control tools and for both of the promotion tools. The tools were not receiving the degree of use by the sample that the jury felt was necessary for effective management.

The null hypothesis was not rejected for the tool Service and Adjustment Reports. The data indicated that sixty-two per cent of the managers utilized data related to this tool in their firms. The comparatively low rating by the jury may be accounted for by their non-involvement whereas the managers were daily faced with the problem of customer relations.

TABLE XXVI
 COMPARISON OF NEED AND USE -- SALES AND
 PROMOTION TOOLS FOR CONTROL

Tool	Jury-Need Mean Ratings	Sample-Use Mean Ratings	Statistical Test "Z" Value
Salesperson's Productivity Report	2.85	1.37	3.70*
Sales Training Plan	2.85	1.30	3.13*
Advertising Budget Appropriations	2.85	1.45	3.04*
Advertising Media Control	2.57	1.07	2.61*
Service and Adjustment Report	2.28	1.77	1.02

Scale: Jury-Need	Scale: Sample-Use
0-not an appropriate tool	0-no knowledge of tool
1-useful for routine operations	1-limited knowledge, little or no data
2-provides useful decision data	2-some data is available
3-helpful in planned decision- making	3-tool used in daily operations
4-imperative to decision- making	4-part of planned decision- making

*Significant at the 0.05 level

Determinant Variables of Use

The managers and owners in the sample generally felt that all of the tools in the area of sales-promotion control and customer relations would be of value in operating their firms. Table XXVII presents the mean values and statistical data for the five tools in this area.

Education. The managers indicated that they perceived formal education as being helpful but not essential for the use of the two sales tools and for customer relations tools. Both of the tools related to advertising received ratings indicating that formal education would be imperative for using these two tools.

Experience. The mean rating for experience for all five tools was 2.17. The indications are that general management experience would be sufficient for using these tools. The two advertising related tools again received somewhat higher values than the other tools.

Motivation. Each tool in the sales and promotion control and customer relations area received a motivational mean rating higher than the mean of the possible responses. Each of these tools would, in the view of the sample members, be useful if costs could be minimized. Service and Adjustment Reports were especially felt to be useful in the improved management of the firm.

Environmental Factors. The null hypothesis of no relationship among the sample members concerning the importance of environmental factors was rejected for each of the five tools.

Staff was considered the most important environmental variable for each of the tools. Time was also considered quite important for using each of the tools. Accounting procedures were also felt to be an important determinant for Salesmen's Productivity Reports, Advertising

TABLE XXVII
 DETERMINANT VARIABLES OF USE -- SALES AND
 PROMOTION TOOLS FOR CONTROL

Tool	Variables	Mean Values	Statistical Tests "D" Values
Sales Training Plan	Education	2.32	0.50*
	Experience	2.00	0.50*
	Motivation	1.57	0.25*
Salesperson's Productivity Report	Education	2.10	0.50*
	Experience	2.02	0.50*
	Motivation	2.05	0.40*
Advertising Budget Appropriations	Education	2.77	0.52*
	Experience	2.37	0.50*
	Motivation	1.97	0.37*
Advertising Media Control	Education	2.85	0.60*
	Experience	2.47	0.50*
	Motivation	1.90	0.37*
Service and Adjustment Report	Education	2.05	0.47*
	Experience	2.00	0.50*
	Motivation	2.35	0.50*

Scale: Education

- 0-of no value
- 1-of limited value
- 2-helpful but not essential
- 3-imperative

Scale: Experience

- 0-no experience
- 1-some retail experience
- 2-general managerial experience
- 3-actual experience

Scale: Motivation

- 0-of no value to small firms
- 1-limited use, regardless of cost
- 2-worthwhile if cost can be minimized
- 3-tool worth time, cost, effort for use

* Significant at the 0.05 level

Budget Appropriations, and Advertising Media Evaluation.

Feasibility Summary Statements

Need and Use. The four tools in this area that deal with sales and promotion were not, in the judgement of the jury, being utilized effectively. In every case, however, the sample was favorably inclined toward the use of these four tools.

Education. The sample members indicated that formal education would be helpful, but not imperative for the two sales control tools and for the Customer Service and Adjustment Report. The managers indicated that formal education would be imperative for the advertising tools.

The jury felt that seminars for retail management would be needed for all the tools in this area.

The sample did not have any exposure to seminars, workshops, or educational experiences that relate to the use of sales and promotion tools.

It would appear that if the feasibility of using any of the five tools is to be improved, that seminars would need to be developed to deal specifically with the need and implementation of the five sales and promotion control tools.

Experience. The sample and the jury both generally felt that general management experience would be all that was needed for using the five sales and promotion control tools. Sixty per cent of the sample had some prior retail experience, and 85 per cent of the managers had been in their firms for more than one year.

TABLE XXVIII

RANKING OF ENVIRONMENTAL VARIABLES -- SALES AND PROMOTION TOOLS FOR CONTROL

Variables	Mean Ranking Values					Mean
	Tool 29	Tool 30	Tool 35	Tool 36	Tool 43	
Staff	5.35	5.17	5.27	5.42	5.15	5.27
Time	4.32	4.15	4.12	4.27	4.27	4.23
Cost	4.15	3.47	3.72	3.75	3.62	3.74
Equipment-Supplies	2.30	1.82	1.95	1.92	2.42	2.08
Organizational Structure	3.67	2.12	1.65	1.72	2.10	2.25
Accounting Procedures	1.20	4.25	4.27	3.90	2.42	3.21
Chi Square Value	128.99*	97.00*	114.49*	116.11*	116.11*	

Rating Values 1.00-6.00, 6.00 is the highest value

*Significant at the 0.05 level

Tool 29 - Sales Training Plan

Tool 30 - Salesperson's Productivity Report

Tool 35 - Advertising Budget Appropriations

Tool 36 - Advertising Media Control

Tool 43 - Service and Adjustment Report

TABLE XXIX
 COMPARISON OF NEEDED EDUCATION LEVELS --- SALES
 AND PROMOTION TOOLS FOR CONTROL

Tool	Mean Level of Education Needed Jury	Mean Level of Education Needed Sample
Sales Training Plan	3.42	2.32
Salesperson's Productivity Report	3.00	2.10
Advertising Budget Appropriations	2.71	2.77
Advertising Media Control	3.57	2.85
Service and Adjustment Report	3.14	2.05
Rating Values, Jury:	1-Eighth Grade 2-High School 3-Specialized Seminars	4-College, less than four years 5-College Degree
Rating Values, Sample:	0-of no value 1-of limited value 2-helpful, but not essential 3-imperative	

The sample members appear to have the needed level of experience to use the five tools. Some specific experience would be gained by virtue of the exposure to model tools in the educational sequence recommended.

Motivation. The sample members showed a genuine concern about improving their managerial capabilities in the areas of sales and promotion control. Each of the tools in this area received a relatively high motivation mean rating. It can be inferred that the sample would be receptive to the use of these five tools if they were presented in a way that would be compatible with the environmental conditions found in small retail firms.

Environmental Factors. Staff and time were considered the two most significant environmental factors for the use of the sales-promotion control tools. The implication is that these tools would probably need to be pre-printed or programmed for easy use with limited staff and to meet the time limitations encountered in small firms.

TABLE XXX
 COMPARISON OF NEEDED EXPERIENCE LEVELS -- SALES
 AND PROMOTION TOOLS FOR CONTROL

Tool	Mean Level of Experience Needed Jury	Mean Level of Experience Needed Sample
Sales Training Plan	1.28	2.00
Salesperson's Productivity Report	1.42	2.02
Advertising Budget Appropriations	1.28	2.37
Advertising Media Control	1.57	2.47
Service and Adjustment Report	1.57	2.00

Rating Values, Jury: 0-no experience
 1-general management
 2-specific experience with tool

Rating Values, Sample: 0-no experience
 1-some retail experience
 2-general management experience
 3-actual experience with tool

Sales and Promotion Tools -- Evaluation

The probability of success for a new firm or the continuing success of an established firm is materially related to a knowledge of the demand potential of the area that the firm intends to serve. Six tools were selected that would be of help in appraising the sales and promotion potential of a selected market area.

The demand evaluation tools selected were Sales Forecast, Sales Increment Formula, Trade Area Delineation Formula, Retail Saturation Index, Buying Power Index, and a Demographic Trade Area Analysis. A description of each of the demand evaluation tools is presented in Appendix D.

Need and Use

The discrepancy between the jury's estimation of need and the sample's level of use was extremely large for each of the six tools in this area. Summary data concerning need and use is presented in Table XXXI.

The null hypothesis (H_{01}) was rejected for each of the six demand evaluation tools. It is also significant to note that the degree of use by the sample was extremely low in each case. The retail managers had only a very limited knowledge of the tool Sales Forecast and practically no knowledge of the other five tools.

Two tools received very high-ranking values by the jury. Sales Forecast with a mean rating value of 3.57 approached the ranking of "imperative" as an aid to effective decision-making. Retail Saturation Index received a mean rating of 3.14, indicating that it should be a

TABLE XXXI
COMPARISON OF NEED AND USE -- SALES AND
PROMOTION TOOLS FOR EVALUATION

Tool	Jury-Need Mean Ratings	Sample-Use Mean Ratings	Statistical Test "Z" Value
Retail Saturation Index	3.14	0.00	6.76*
Buying Power Index	1.57	0.02	5.08*
Sales Forecast	3.57	0.67	4.44*
Trade Area Delineation Formula	2.14	0.07	4.43*
Sales Increment Formula	1.71	0.07	3.64*
Demographic Trade Area Analysis	1.28	0.17	2.81*

Scale: Jury-Need

- 0-not an appropriate tool
- 1-useful for routine operations
- 2-provides useful decision data
- 3-helpful in planned decision-making
- 4-imperative to decision-making

Scale: Sample-Use

- 0-no knowledge of tool
- 1-limited knowledge, little or no data
- 2-some data is available
- 3-tool used in daily operations
- 4-part of planned decision-making

* Significant at the 0.05 level

part of a plan to increase management's effectiveness. The remaining tools were felt to be helpful in guiding the firm's operations.

Determinant Variables of Use

It is apparent from the data in Table XXXII that all three variables (education, experience, and motivation) are crucial to the use of the demand evaluation tools.

Education. The mean rating value for the education variable was 2.995. The sample perceived of formal education as being imperative for the use of each of the demand evaluation tools.

Experience. The mean rating (2.955) for experience, like education, was extremely high. This mean value was representative for each of the tools and implies that actual experience with each of the tools would be necessary before they could be used.

Motivation. The null hypothesis (H_0) was rejected for each tool on the motivation variable with the exception of the tool Sales Forecast. In each case where the null hypothesis (H_0) was rejected for the motivation variable the difference was negative. The mean motivational rating for the five tools where the null hypothesis was rejected was .81. The sample expressed the belief that these five tools would be of limited use regardless of their cost. In two cases (Retail Saturation Index-0.62, and Buying Power Index-0.55) the tools approached a rating of "no value" to retail firms.

The null hypothesis for the tool Sales Forecast was not rejected. Its rating of 1.35 was not significantly different from the mean of the possible values (1.50), but it was negative. It was considered as being of limited use regardless of its cost.

TABLE XXXII
DETERMINANT VARIABLES OF USE -- SALES AND
PROMOTION TOOLS FOR EVALUATION

Tool	Variables	Mean Values	Statistical Tests "D" Values
Sales Forecast	Education	2.97	0.72*
	Experience	2.87	0.62*
	Motivation	1.35	0.22
Sales Increment Formula	Education	3.00	0.75*
	Experience	2.97	0.72**
	Motivation	0.82	0.30
Trade Area Delineation Formula	Education	3.00	0.75*
	Experience	2.95	0.70**
	Motivation	0.97	0.24
Retail Saturation Index	Education	3.00	0.75*
	Experience	3.00	0.75**
	Motivation	0.62	0.47
Buying Power Index	Education	3.00	0.75*
	Experience	2.97	0.72**
	Motivation	0.55	0.45
Demographic Trade Area Analysis	Education	3.00	0.75*
	Experience	2.97	0.72**
	Motivation	1.07	0.24

Scale: Education

- 0-of no value
- 1-of limited value
- 2-helpful but not essential
- 3-imperative

Scale: Experience

- 0-no experience
- 1-some retail experience
- 2-general managerial experience
- 3-actual experience

Scale: Motivation

- 0-of no value to small firms
- 1-limited use, regardless of cost
- 2-worthwhile if cost can be minimized
- 3-tool worth time, cost, effort
for use

* Significant at the 0.05 level

** Significant at the 0.05 level-negative

Environmental Factors. The null hypothesis (H_0) was rejected for each of the tools that deals with the evaluation of sales and promotion potential. There was a high degree of relationship among the sample members concerning the importance of the environmental factors.

Staff and cost were considered the two most influential factors for the use of the demand evaluation tools. Time and accounting procedures were also considered quite important. Many retailers expressed the belief, during interview sessions, that these tools would require a good deal of research and accounting expertise to be put into practice.

Feasibility of Use

Need and Use. Every facet of a retail store should be geared to some estimate of sales potential. The retail managers in this sample had practically no knowledge of the tools selected for evaluation of sales and promotion potential.

Education. The sample members and the jury of experts were in agreement concerning the needed levels of education for using the tools in this area. Specifically, the sample felt that formal education would be imperative in this area. The jury indicated that specialized seminars would be needed for an understanding of these tools.

Educational materials dealing with the criteria required for using the six tools in this area will need to be provided to increase the feasibility of their use.

Experience. Experience, like education, is a crucial variable for improving the feasibility of using the sales and promotion evaluation

TABLE XXXIII

RANKING OF ENVIRONMENTAL VARIABLES -- SALES AND PROMOTION TOOLS FOR EVALUATION

Variables	Mean Ranking Values						Mean
	Tool 24	Tool 25	Tool 31	Tool 32	Tool 33	Tool 34	
Staff	5.05	4.97	5.10	5.10	4.90	5.00	5.02
Time	4.55	4.25	4.57	4.60	4.62	4.37	4.49
Cost	4.92	5.00	4.70	4.77	4.90	4.97	4.88
Equipment-Supplies	2.15	1.80	1.95	2.02	1.75	1.75	1.90
Organizational Structure	1.65	1.55	1.67	1.60	1.70	1.65	1.64
Accounting Procedures	2.67	3.42	3.00	2.90	3.12	3.25	3.06
Chi Square Values	130.99*	133.56*	127.30*	131.90*	132.90*	134.16*	

Rating Values 1.00-6.00, 6.00 is the highest value

*Significant at the 0.05 level

Tool 24 - Sales Forecast

Tool 25 - Sales Increment Formula

Tool 32 - Trade Area Delineation Formula

Tool 33 - Retail Saturation Index

Tool 34 - Buying Power Index

Tool 31 - Demographic Trade Area Analysis

tools. The sample members felt that actual experience with each of the tools would be necessary.

Four of the tools (Sales Forecast, Sales Increment Formula, Demographic Trade Area Analysis, and Trade Area Delineation Formula) would, in the jury's estimation, require specific experience with the tool.

Demonstration problems and hypothetical models of the sales and promotion evaluation tools will need to be developed. The model problems can be used in seminars to provide some experience with these tools and the criteria for their use.

Motivation. Motivation will be a major factor in any efforts to increase the feasibility of using the six sales and promotion evaluation tools. The retailer's general attitude about these tools is that they are of no value to small firms; or at best, they would be of limited value regardless of the cost involved.

Quite probably the low motivational values result, at least partially, from a lack of knowledge about the value of these tools. The demonstration problems and materials developed for educational purposes should include a heavy emphasis on the need and implications of using the selected tools.

Environmental Factors. Staff, time, cost, and accounting procedures were considered the major environmental determinants for using these tools. The owners or managers working closely with their outside accountants could secure the necessary data for employing these tools. The data necessary for using the six demand analysis tools are more readily available than is commonly recognized. Any procedures developed for increasing the use of these six tools will need to emphasize the

TABLE XXXV
 COMPARISON OF NEEDED EXPERIENCE LEVELS -- SALES
 AND PROMOTION TOOLS FOR EVALUATION

Tool	Mean Level of Experience Needed Jury	Mean Levels of Experience Needed Sample
Sales Forecast	1.71	2.87
Sales Increment Formula	1.60	2.97
Trade Area Delineation Formula	1.60	2.95
Retail Saturation Index	1.14	3.00
Buying Power Index	1.16	2.97
Demographic Trade Area Analysis	1.75	2.97

Rating Values, Jury: 0-no experience
 1-general management
 2-specific experience with tool

Rating Values, Sample: 0-no experience
 1-some retail experience
 2-general management experience
 3-actual experience with tool

sources of data and thus demonstrate that they can be used within the environmental limitations generally encountered.

Summary. The approach to increasing the feasibility of using the six sales and promotion evaluation tools will need to be triune in nature. It will be necessary to demonstrate the need for these tools and their ramifications for all facets of retail operations. As educational experiences are provided, it will be necessary to demonstrate that the data needed for the use of these tools can be made available. Model problems that demonstrate the use of the requisite data within the environmental limitations will be essential for improving the use of sales and promotion tools.

CHAPTER VII

FINANCE AND COST CONTROL TOOLS

Operating Indicators

Activity without direction very often results in nothing more than activity. The accomplishing of objectives requires guidelines and indicators of progress. Even the best developed plans require adjustment during their implementation. Indicators that deal with the utilization of assets and the production of sales, and which guide in the controlling of costs are indispensable to effective management.

The six tools selected as operating indicators are Retail Method of Inventory Costing, Open-to-Buy-Analysis, Stock to Sales Ratio, Gross Margin per Square Feet of Floor Space, Gross Sales Analysis, and Net Sales to Asset Ratio. Informal research and experience indicated that the six tools selected were the most practical ones for possible use by smaller firms.

Need and Use

The null hypothesis (H_{01}) was rejected at the 0.05 level for each of the six tools that were selected as operating indicators.

The jury indicated that each of the six tools needed to be used as a part of a plan to increase management's decision-making effectiveness. The tools Stock-to-Sales Ratio and Gross Sales Analysis were felt to be imperative for effective retail management.

Conversely to the jury's high estimation of need, the retailers' utilization of the six operating indicators was practically nil.

The data in Table XXXVI indicate that five of the indicators received mean ratings of use of less than 1.00. The retailers surveyed had no specific data available that related to the use of these tools and in most cases they had practically no knowledge of the tools.

The retailers had some information available for using the tool Gross Sales Analysis, but they did not employ this data for the specific purpose of decision-making.

Extensive oral interviews substantiate the non-parametric findings that small retailers tend to operate on a "by guess and by golly" basis. The standard response to questions concerning the use of indicators made it clear that the managers felt they were not needed. Follow-up questions concerning specific aspects of the firm's operations usually could not be answered except in vague generalities.

Determinant Variables of Use

The retailers were in general agreement about the importance of education and experience as determinants of the use of the operating indicators. There was a great deal of disparity concerning the retailers motivation or estimation of the value of the operating indicators. Table XXXVII contains the mean rating values for the determinant variables education, experience, and motivation.

Education. The educational mean rating for all six operating indicators was 2.796. The retailers generally felt that formal education would be imperative for the use of the six operating indicators.

TABLE XXXVI
COMPARISON OF NEED AND USE -- OPERATING INDICATORS

Tool	Jury-Need Mean Ratings	Sample-Use Mean Ratings	Statistical Tests "Z" Value
Retail Method Inventory Costing	2.57	0.15	4.72*
Stock-to-Sales Ratio	3.57	0.77	4.33*
Open-to-Buy Analysis	2.71	0.70	4.04*
Gross Sales Analysis	3.71	1.82	4.01*
Net Sales to Asset Ratio	3.00	0.92	3.25*
Gross Margin per Square Feet Floor Space	2.57	0.92	3.08*

Scale: Jury-Need

- 0-not an appropriate tool
- 1-useful for routine operations
- 2-provides useful decision data
- 3-helpful in planned decision-making
- 4-imperative to decision-making

Scale: Sample-Use

- 0-no knowledge of tool
- 1-limited knowledge, little or no data
- 2-some data is available
- 3-tool used in daily operations
- 4-part of planned decision-making

*Significant at the 0.05 level

TABLE XXXVII
DETERMINANT VARIABLES OF USE -- OPERATING INDICATORS

Tool	Variables	Mean Values	Statistical Tests "D" Values
Retail Method Inventory Costing	Education	3.00	0.75*
	Experience	2.87	0.62**
	Motivation	0.95	0.32
Open-to-Buy Analysis	Education	3.00	0.75*
	Experience	2.90	0.65
	Motivation	1.65	0.20
Stock-to-Sales Ratio	Education	2.72	0.50*
	Experience	2.55	0.50
	Motivation	1.42	0.20
Gross Margin per Square Feet Floor Space	Education	2.92	0.67*
	Experience	2.62	0.50*
	Motivation	1.75	0.25
Gross Sales Analysis	Education	2.32	0.50*
	Experience	2.10	0.50*
	Motivation	2.55	0.47
Net Sales to Asset Ratio	Education	2.82	0.57*
	Experience	2.47	0.50
	Motivation	1.47	0.22

Scale: Education

- 0-of no value
- 1-of limited value
- 2-helpful but not essential
- 3-imperative

Scale: Experience

- 0-no experience
- 1-some retail experience
- 2-general managerial experience
- 3-actual experience

Scale: Motivation

- 0-of no value to small firms
- 1-limited use, regardless of cost
- 2-worthwhile if cost can be minimized
- 3-tool worth time, cost, effort for use

* Significant at the 0.05 level

** Significant at the 0.05 level-negative

Experience. General management experience was deemed adequate for the tools Net Sales to Asset Ratio and Gross Sales Analysis. The remaining four tools would, in the opinion of the retailers, require actual experience with the tools to increase the feasibility of their use.

Motivation. The null hypothesis was not rejected for the tools Open-to-Buy Analysis, Stock-to-Sales Ratio, and Net Sales to Asset Ratio. The mean motivational ratings for these three tools were close to the mean of the possible responses (1.50) and thus indicated that they would be of value if the cost of their use could be minimized.

The tool Gross Margin per Square Feet of Floor Space had a calculated "D" value of 0.25 which closely approximated the rejection level. It, too, was felt to be of value if cost could be held proportional to its use value.

The tool Retail Method of Inventory Costing received a negative (less than the mean of the possible values-1.50) mean rating of 0.95. The retailers believed this tool to be of little value regardless of its cost. Conversely, Gross Sales Analysis with a mean rating of 2.55 was thought to be a direct aid in improving management's effectiveness and would be well worth the cost, time, and effort required for its use.

Environmental Factors. The null hypothesis (H_0) of no significant relationship among the retailers concerning the relative influence of the six environmental variables was rejected in each case. The selected operating indicators would require a considerable amount of accounting data for their calculation and use. It is not surprising that in each case accounting procedures were considered the most

TABLE XXXVIII
RANKING OF ENVIRONMENTAL VARIABLES -- OPERATING INDICATORS

Variables	Mean Ranking Values						Mean
	Tool 11	Tool 15	Tool 12	Tool 13	Tool 26	Tool 27	
Staff	4.27	4.65	4.32	4.32	4.92	4.37	4.475
Time	4.10	4.25	3.95	4.02	3.97	4.20	4.082
Cost	3.77	3.47	3.75	3.65	3.02	3.62	3.547
Equipment-Supplies	1.67	1.70	1.70	1.67	1.72	1.65	1.685
Organizational Structure	1.65	1.52	1.45	1.65	1.75	1.55	1.595
Accounting Procedures	5.52	5.40	5.82	5.67	5.60	5.60	5.601
Chi Square Values	135.89*	144.41*	157.64*	142.43*	149.77*	147.50*	

Rating Values 1.00-6.00, 6.00 is the highest value

*Significant at the 0.05 level

Tool 11 - Retail Method of Inventory Costing
 Tool 15 - Open-to-Buy Analysis
 Tool 12 - Stock-to-Sales Ratio

Tool 13 - Gross Margin per Square Feet Floor Space
 Tool 26 - Gross Sales Analysis
 Tool 27 - Net Sales to Asset Ratio

important environmental variables. Staff and time were logically rated as being important, inasmuch as sophisticated accounting procedures would require the utilization of staff and time.

Feasibility of Use

Need and Use. The retailers in this sample had only limited knowledge of the tools selected as operating indicators. In no case were any of the tools being employed as aids to management decision-making and virtually no data was readily available for the use of the six tools.

Education. The high mean rating value (2.796) on the education variable dictates the need for a strong educational program. The educational data in Table XXXIX indicates agreement between the sample and the jury concerning needed educational levels. The sample thought educational experience would be imperative and the jury indicated that specialized seminars would be necessary. Information will need to be provided to indicate the value of these tools to retail management. It will also be necessary to demonstrate that the data needed for the use of the operating indicators can be secured without a great deal of additional cost.

Experience. The retailers indicated that at least general management experience would be needed for the use of the selected operating indicators. Actual experience with the tools was felt to be necessary in four cases as indicated by Table XL.

The jury members concurred with the sample concerning the needed experience levels for using operating indicators. All six tools would require, in the opinion of the jury, at least general management

TABLE XXXIX
 COMPARISON OF NEEDED EDUCATION LEVELS --
 OPERATING INDICATORS

Tool	Mean Level of Education Needed Jury	Mean Level of Education Needed Sample
Retail Method of Inventory Costing	3.42	3.00
Open-to-Buy Analysis	3.14	3.00
Stock-to-Sales Ratio	2.71	2.72
Gross Margin per Square Feet Floor Space	2.83	2.92
Gross Sales Analysis	3.28	2.32
Net Sales to Asset Ratio	3.71	2.82

Rating Values, Jury: 1-Eighth Grade
 2-High School
 3-Specialized Seminars
 4-College, less than four years
 5-College Degree

Rating Values, Sample: 0-of no value
 1-of limited value
 2-helpful, but not essential
 3-imperative

TABLE XL
 COMPARISON OF NEEDED EXPERIENCE LEVELS --
 OPERATING INDICATORS

Tool	Mean Level of Experience Needed Jury	Mean Level of Experience Needed Sample
Retail Method of Inventory Costing	1.57	2.87
Open-to-Buy Analysis	1.42	2.90
Stock-to-Sales Ratio	1.71	2.55
Gross Margin per Square Feet Floor Space	1.83	2.62
Gross Sales Analysis	1.14	2.10
Net Sales to Asset Ratio	1.28	2.47

Rating Values, Jury: 0-no experience
 1-general management
 2-specific experience with tool

Rating Values, Sample: 0-no experience
 1-some retail experience
 2-general management experience
 3-actual experience with tool

experience. Specific experience would be needed in the use of the tools Retail Inventory Costing, Stock-to-Sales Ratio, and Gross Margin per Square Feet of Floor Space (see Table XL).

Hypothetical case problems designed to fit the conditions found in small firms would need to be developed. Exemplary models might be used to show the acquisition of the needed data, the formulation of the various indicators from the data, and the applications that might be made of the indicators.

Motivation. Motivation appears to be, at least partially, a function of education and experience. The retailers tend to indicate high motivation levels when they have at least some understanding of the tools.

The materials developed to provide information about the value and use of the operating indicators coupled with sample problems would probably serve as motivating factors. The Retail Method of Inventory Costing was the only tool receiving an extremely low motivation rating. A special effort would be needed to demonstrate the value and cost tradeoffs from employing the inventory costing tool.

Environmental Factors. The most significant environmental factors were accounting procedures, staff, and time. The feasibility of improving the degree of use made of the selected operating indicators is inextricably tied to accounting procedures. Sequentially, accounting procedures implies the need for staff and time to formulate the data once they are available.

Eighty-five per cent of the sample members were using an outside accountant, and all forty retailers had someone on their staff assigned to bookkeeping and accounting duties. The environmental criteria for

employing the selected operating indicators can be met by most of the firms surveyed.

The selected operating indicators can be formulated, for the most part, from the existing data being used to provide periodic accounting reports. A limited amount of additional data would be needed for some tools. The new data could be accumulated by the present staff members in a majority of the firms.

Periodic Financial Tools

Financial data generally is designed to serve three basic functions. First, it is used as a basis for reporting information to owners, creditors, taxing agencies, and other interested persons. Second, it is the primary source of data that directs management's attention to areas of concern. Third, accounting and financial data is extremely useful as a basis for problem-solving and decision-making.

Need and Use

The results of this study make it clear that small retail store managers employ financial and accounting data primarily for the purpose of reporting. The entire emphasis that retailers give to financial data is directed toward reporting the results of past periods and reflecting one's current position.

The jury envisioned a much broader need for financial data. They indicated that the tools selected which provide financial data should be used in the decision-making processes of small retailers. The financial tools selected for study and a comparison of the need and use of each are presented in Table XLI.

TABLE XLI
COMPARISON OF NEED AND USE -- PERIODIC FINANCIAL TOOLS

Tool	Jury-Need Mean Ratings	Sample-Use Mean Ratings	Statistical Data "Z" Value
Cash Report	4.00	2.97	4.95*
Balance Sheet	4.00	2.45	4.49*
Break-Even Analysis	2.85	0.25	4.33*
Profit and Loss Statement	4.00	2.57	4.11*
Ratios and Analyses	3.85	1.57	4.10*
Contribution Margin Statement	2.28	0.30	3.09*

Scale: Jury-Need

- 0-not an appropriate tool
- 1-useful for routine operations
- 2-provides useful decision data
- 3-helpful in planned decision-making
- 4-imperative to decision-making

Scale: Sample-Use

- 0-no knowledge of tool
- 1-limited knowledge, little or no data
- 2-some data available
- 3-tool used in daily operations
- 4-part of planned decision-making

* Significant at the 0.05 level

The null hypothesis (H_{01}) was rejected for each of the tools dealing with financial and accounting data. In no instance was the tool receiving the degree of use by the sample that the jury deemed desirable for effective management.

The data in Table XLI shows that four of the six financial tools had mean ratings in excess of 3.80. It was thus indicated that the jury felt these tools were imperative to wise decision-making and effective management. The retailers had some data available relating to

these same four tools and generally referred to the data as a guide for operations. They were not, however, using the available data as part of a planned decision-making sequence.

The jury indicated that the use of Break-Even Analysis and Contribution Margin Statement was not imperative, but should be used as aids to decision-making. The sample, conversely, had practically no knowledge of either of these tools.

Determinant Variables of Use

The data indicate an inverse relationship between the degree of use made of a tool and the retailer's estimation of the importance of the various determinant variables.

Education. The lower the degree of use that existed for each tool the higher was the sample's evaluation of the need for formal education. The use rating for Break-Even Analysis, Contribution Margin Statements, and Ratios and Analyses were 0.25, 0.30, and 1.57 respectively. The mean education ratings for these same three tools were 3.00, 3.00, and 2.87. The tools Profit and Loss Statement, Balance Sheet, and Cash Report received relatively high use ratings of 2.57, 2.45, and 2.97. The educational need ratings for the same three tools were only 2.27, 2.30, and 1.90 respectively. Essentially, the retailers were implying that use is a direct function of education.

Experience. The same pattern was found for use and experience as was noted between use and the expressed need for education. Reference to Table XLII indicates that for each tool the degree of use was inversely related to the expressed importance of experience as a determinant variable of use.

TABLE XLII
 DETERMINANT VARIABLES OF USE -- PERIODIC FINANCIAL TOOLS

Tool	Variables	Mean Values	Statistical Tests "D" Values
Break-Even Analysis	Education	3.00	0.75*
	Experience	2.95	0.70*
	Motivation	0.67	0.39**
Profit and Loss Statement	Education	2.27	0.50*
	Experience	2.05	0.50*
	Motivation	2.87	0.62*
Balance Sheet	Education	2.30	0.50*
	Experience	2.05	0.50*
	Motivation	2.82	0.57*
Cash Report	Education	1.90	0.37*
	Experience	2.00	0.50*
	Motivation	2.87	0.67*
Contribution Margin Statement	Education	3.00	0.75*
	Experience	2.95	0.70*
	Motivation	1.60	0.22
Ratios and Analyses	Education	2.87	0.62*
	Experience	2.80	0.55*
	Motivation	2.02	0.37*

Scale: Education

- 0-of no value
- 1-of limited value
- 2-helpful but not essential
- 3-imperative

Scale: Experience

- 0-no experience
- 1-some retail experience
- 2-general managerial experience
- 3-actual experience

Scale: Motivation

- 0-of no value to small firms
- 1-limited use, regardless of cost
- 2-worthwhile if cost can be minimized
- 3-tool worth time, cost, effort for use

* Significant at the 0.05 level

** Significant at the 0.05 level-negative

Motivation. A high positive correlation was noted between the use ratings and the retailers' motivational perceptions. The three tools receiving the highest use ratings (Profit and Loss Statement, Balance Sheet, and Cash Report) were all considered to be well worth the cost, time, and effort involved in their use. The three tools with low use ratings (Break-Even Analysis, Contribution Margin Statement, and Ratios and Analyses) were thought to be of limited use or worthwhile only if their cost could be minimized.

It is apparent, for the six financial data tools, that motivation is a consequence of education and experience and that use is directly contingent upon motivation.

Environmental Factors. The forty retailers in this study were in agreement about the relative importance of the six environmental factors. The null hypothesis of no significant degree of relationship was rejected for each tool.

The data in Table XLIII indicates, with the exception of the tool Cash Reports, that accounting procedures, staff, and time were considered the most important environmental variables. The daily cash report requires a daily accounting for cash-in-use and reporting the results on a simple control slip. It is logical, therefore, that time and staff would be considered the most important variables for using the Daily Cash Report.

Feasibility of Use

Need and Use. A great deal more use needs to be made of the selected financial tools than was evidenced in the findings of this study. The tools Profit and Loss Statement, Balance Sheet, and Cash

TABLE XLIII

RANKING OF ENVIRONMENTAL VARIABLES -- PERIODIC FINANCIAL TOOLS

Variables	Mean Ranking Values						Mean
	Tool 28	Tool 47	Tool 46	Tool 50	Tool 48	Tool 49	
Staff	4.27	4.70	4.80	5.37	4.75	4.87	4.793
Time	4.07	4.22	4.12	5.50	3.75	3.67	4.221
Cost	4.22	2.57	2.60	2.47	3.45	3.22	3.088
Equipment-Supplies	1.67	1.82	1.82	2.27	1.72	1.80	1.850
Organizational Structure	1.42	1.77	1.72	2.92	1.47	1.55	1.808
Accounting Procedures	5.32	5.90	5.92	2.45	5.85	5.87	5.218
Chi Square Values	141.99*	164.14*	168.31*	131.43*	164.59*	163.77*	

Rating Values 1.00-6.00, 6.00 is the highest value

*Significant at the 0.05 level

Tool 28 - Break-Even Analysis

Tool 47 - Profit and Loss Statement

Tool 46 - Balance Sheet

Tool 50 - Cash Report

Tool 48 - Contribution Margin Statement

Tool 49 - Ratios and Analyses

Report received relatively high use ratings. Interviews with the retail managers confirmed that the reported use was primarily for reporting purposes and not for planned decision-making.

Education. The data in Table XLIV indicate that the retailers do not possess the necessary educational levels for proper use of the selected financial tools. The jury of experts indicated that in their opinion, specialized seminars or educational experiences dealing with the specific financial tools would be needed. For the three tools which received low use ratings (Break-Even Analysis, Contribution Margin Statement, and Ratios and Analyses) the educational programs will need to focus on the need and value of these tools.

Educational considerations dealing with Profit and Loss Statements, Balance Sheets, and Cash Reports will need to emphasize the use of these tools for attention directing and problem-solving.

Experience. The jury indicated that general management experience would be sufficient for the use of each of the six financial tools. Conversely, the sample felt that actual experience with the tools would be needed in the case of the three tools that were not used to any appreciable degree.

The disparity between the jury's and sample's opinions about the need for experience can be accounted for in two ways. First, retailers are likely to be thinking in terms of acquiring, formulating, and utilizing the data. The jury indicated that they were thinking only in terms of implementation. If the retailers were to utilize their outside accountants more effectively, the assumption by the jury would be correct. It could then be reasoned that general management experience would be adequate. Secondly, the jury may be prone to attach a

connotation to the term "general management experience" that implies a good deal of managerial sophistication. It is the researcher's observation from conversations with the retailers that a good deal of actual experience with models and practice problems will need to be provided.

TABLE XLIV
COMPARISON OF NEEDED EDUCATION LEVELS -- PERIODIC FINANCIAL TOOLS

Tool	Mean Level of Education Needed Jury	Mean Level of Education Needed Sample
Break-Even Analysis	3.57	3.00
Profit and Loss Statement	3.42	2.27
Balance Sheet	3.57	2.30
Cash Report	3.42	1.90
Contribution Margin Statement	4.16	3.00
Ratios and Analyses	3.71	2.87

Rating Values, Jury: 1-Eighth Grade
2-High School
3-Specialized Seminars
4-College, less than four years
5-College Degree

Rating Values, Sample: 0-of no value
1-of limited value
2-helpful, but not essential
3-imperative

Motivation. The retailers are generally inclined to be receptive towards the use of financial tools. Only Break-Even Analysis received

a low or negative (0.67) motivational rating. The materials and procedures developed to provide information and experience with these tools should improve the retailer's attitudes toward their use.

TABLE XLV
COMPARISON OF NEEDED EXPERIENCE LEVELS --
PERIODIC FINANCIAL TOOLS

Tool	Mean Level of Experience Needed Jury	Mean Level of Experience Needed Sample
Break-Even Analysis	1.14	2.95
Profit and Loss Statement	1.14	2.05
Balance Sheet	1.00	2.05
Cash Report	1.42	2.00
Contribution Margin Statement	1.16	2.95
Ratios and Analyses	1.42	2.80

Rating Values, Jury: 0-no experience
1-general management
2-specific experience with tool

Rating Values, Sample: 0-no experience
1-some retail experience
2-general management experience
3-actual experience with tool

Environmental Factors. The crucial environmental factors for using financial tools (accounting procedures, staff, and time) do not seem to present insurmountable problems. Improved utilization of the

staff members concerned with accounting duties and closer rapport with the outside accountant could make the use of financial tools feasible.

Expense and Cost Control Tools

Profit is the result of what appears to be a paradox. Expenses must be incurred to produce sales. At the same time, many of the expense items necessary for the production of sales must be controlled to insure that some residue or profit will remain. An extreme liberal or conservative attitude on either sales or costs may adversely affect profitability.

The retailing environment of today is highly competitive in nature. The wise utilization of assets to achieve a proper balance between sales and costs is often the edge needed for success.

Several tools were selected that relate to the management of costs. The tools were divided into three groups: Current Operating Expense Analysis, Long-Term or Capital Expenditure Tools, and four tools dealing with accounts receivable. Accounts receivable tools were included in this section because they, in particular, are sales-producing items that may be costly if not properly controlled.

Need and Use

Table XLVI lists the specific tools and a comparison of the need and use of each of the selected tools.

The null hypothesis (H_0) of no significant difference between the jury's estimation of need and the sample's reported use was rejected in each case. The jury indicated that each tool selected should be used as part of a plan to increase managerial effectiveness. In two cases,

TABLE XLVI

COMPARISON OF NEED AND USE -- EXPENSE AND COST CONTROL TOOLS

Tool	Jury-Need Mean Ratings	Sample-Use Mean Ratings	Statistical Test "Z" Value
<u>Current Operating Expense Tools</u>			
Expense Summary Sheet	3.85	1.45	4.54*
Comparative Expense Analysis	2.85	1.87	2.28
<u>Capital Expenditure Tools</u>			
Differential Analysis Report for Equipment Replacement	2.71	0.05	6.05*
Fixed Assets-Long Term Liabilities Ratio	3.14	0.42	4.53
<u>Credit and Collection Tools</u>			
Ratio of Accounts Receivable to: Sales, Inventories, Assets	3.42	0.52	4.43*
Aging Chart-Accounts Receivable	3.85	2.32	4.20*
Accounts Receivable Turnover	3.71	1.05	4.13*
Score Card Credit Rating	3.00	0.97	3.19

Scale: Jury-Need

- 0-not an appropriate tool
- 1-useful for routine operations
- 2-provides useful decision-making
- 3-helpful in planned decision-making
- 4-imperative to decision-making

Scale: Sample-Use

- 0-no knowledge of tool
- 1-limited knowledge, little or no data
- 2-some data is available
- 3-tool used in daily operations
- 4-part of planned decision-making

*Significant at the 0.05 level

Comparative Expense Analysis and Aging of Accounts Receivables, the retailers had some data available relating to the use of these tools. The retailers had only limited knowledge of any of the remaining six tools.

Determinant Variables of Use

The tools dealing with cost control range from highly complex to relatively simple in nature. The relative importance of the determinant variables varied considerably among the several tools.

Education. The retailers had some data available or at least some knowledge of the tools Comparative Expense Analysis, Expense Summary Sheets, and Aging of Accounts Receivable. In each of these three cases, education was considered to be helpful, but not essential.

The sample members had little or no knowledge of the remaining five tools as indicated by the use ratings in Table XLVI. In each case the retail managers indicated that formal education would be imperative to the increased use of these tools.

Experience. General management experience was felt to be significant in each case where the retailers had any appreciable knowledge of the selected tools. Actual experience with the tools was indicated as being necessary for the use of the two capital expenditure tools and the Ratio of Accounts Receivable to Sales, Inventories and Assets.

Motivation. The retail managers were strongly inclined towards the use of Comparative Expense Analyses and Aging of Accounts Receivable. The Expense Summary Sheet, Score Card Credit Rating, and Accounts Receivable Turnover were considered to be worthwhile if the cost of their use could be minimized.

TABLE XLVII
 DETERMINANT VARIABLES OF USE -- EXPENSE
 AND COST CONTROL TOOLS

Tool	Variables	Mean Values	Statistical Tests "D" Values
<u>Current Operating Expense Tools</u>			
Expense Summary Sheet	Education	2.10	0.50*
	Experience	2.02	0.50*
	Motivation	1.72	0.25*
Comparative Expense Analysis	Education	2.15	0.50*
	Experience	2.05	0.50*
	Motivation	2.52	0.50*
<u>Capital Expenditure Tools</u>			
Differential Analysis Report for Equipment Replacement	Education	2.97	0.72*
	Experience	2.92	0.67*
	Motivation	0.55	0.50*
Fixed Assets-Long Term Liabilities Ratio	Education	2.97	0.72*
	Experience	2.82	0.57*
	Motivation	0.75	0.44**
<u>Credit and Collection Tools</u>			
Ratio of Accounts Receivable to-Sales, Inventories, Assets	Education	2.80	0.55*
	Experience	2.57	0.50*
	Motivation	0.92	0.34**
Aging Chart-Accounts Receivable	Education	1.97	0.45*
	Experience	2.00	0.47*
	Motivation	2.50	0.42*
Accounts Receivable Turnover	Education	2.55	0.50*
	Experience	2.25	0.50*
	Motivation	1.72	0.22

TABLE XLVII (Continued)

Tool	Variables	Mean Values	Statistical Tests "D" Values
Score Card Credit Rating	Education	2.87	0.62*
	Experience	2.27	0.50*
	Motivation	1.67	0.24*

Scale: Education

- 0-of no value
- 1-of limited value
- 2-helpful but not essential
- 3-imperative

Scale: Experience

- 0-no experience
- 1-some retail experience
- 2-general managerial experience
- 3-actual experience

Scale: Motivation

- 0-of no value to small firms
- 1-limited use, regardless of cost
- 2-worthwhile if cost can be minimized
- 3-tool worth time, cost, effort for use

* Significant at the 0.05 level

** Significant at the 0.05 level-negative

The two capital expenditure tools and the ratio of accounts receivable to sales and asset items were considered to be of limited use regardless of their cost.

Environmental Factors. The null hypothesis (H_{03}) of no significant pattern of agreement among the retailers concerning the hierarchical importance of the environmental factors was rejected for each tool.

The general consensus of the retailers was that accounting procedures would be most important in determining the feasibility of using the expense control tools. Time and staff are related to accounting procedures, and they were also considered strong determinants of use.

Feasibility of Use

Need and Use. Expense analyses are generally considered as absolute musts for planning, controlling, and adjusting operating procedures. None of the selected expense and cost control tools was being used by the retail managers as a planned part of decision-making for improved management.

The feasibility of using these tools within the environmental limitations of small firms will need to be demonstrated in a practical way.

Education. The data in Table XLIX indicate that the jury thought that specialized seminars and/or some college work would generally be needed for the use of expense control tools. The sample perceived that formal education would be helpful in all cases and imperative for five of the eight tools.

The educational profile data (Chapter IV) indicates that the retailers do not possess the specialized educational expertise to utilize expense control tools. Specialized seminars or consulting materials

TABLE XLVIII
RANKING OF ENVIRONMENTAL VARIABLES -- EXPENSE AND COST CONTROL TOOLS

Variables	Mean Rating								Mean
	Tool 37	Tool 38	Tool 45	Tool 44	Tool 42	Tool 41	Tool 40	Tool 39	
Staff	4.65	4.62	4.35	4.40	5.45	5.00	4.55	4.40	4.130
Time	4.17	4.07	3.97	3.80	4.70	5.20	4.20	4.17	4.285
Cost	2.82	3.00	4.05	4.02	4.32	3.12	3.97	4.15	3.681
Equipment-Supplies	1.80	1.82	1.72	1.72	2.15	1.72	1.62	1.67	1.777
Organizational Structure	1.77	1.75	1.40	1.35	1.80	1.77	1.45	1.50	1.599
Accounting Procedures	5.77	5.72	5.50	5.70	2.57	4.17	5.20	5.10	4.966
Chi Square Values	151.71*	144.74*	146.41*	157.59*	131.33*	135.57*	142.01*	132.33*	

Rating Values 1.00-6.00, 6.00 is the highest value

*Significant at the 0.05 level

Tool 37 - Comparative Expense Analysis

Tool 38 - Expense Summary Sheet

Tool 45 - Differential Analysis Report for Equipment Replacement

Tool 44 - Fixed Assets-Long Term Liabilities Ratio

Tool 42 - Score Card Credit Rating

Tool 41 - Aging Chart-Accounts Receivable

Tool 40 - Accounts Receivable Turnover

Tool 39 - Ratio of Accounts Receivable to: Sales, Inventories, Assets

will need to be developed. The proposed materials will need to be motivational as well as informative.

Experience. Experience of a general management nature was considered adequate by the jury for the use of the selected expense control tools. The retailers agreed with the jury concerning the needed level of experience except in the case of the two capital expenditure tools. The information needed for the employment of the capital expenditure tools could be provided by the outside accountants. General management experience would be sufficient for implementing the use of these two tools.

Sixty per cent of the sample had previous retailing experience and 77.5 per cent had been in business for more than two years. The experience and tenure of the retailers coupled with the suggested educational activities, which inherently provides some experience, would be adequate experience for the use of the expense control tools.

Motivation. Motivation does not appear to be a major determinant of use for the expense control tools. The data in Table XLVII indicate that the retailers are receptive to the use of five of the eight tools. The low motivational ratings for the remaining three tools stems from a lack of knowledge about their use. Personal interviews pointed out that the retailers were primarily concerned about the data acquisition and formulation of the capital expenditure tools and the Ratio of Accounts Receivable to Sales and Assets. The retailer's attitude towards these tools may be improved by demonstrating their use with educational materials. It will be necessary to show that the outside accountant can provide the data for using the capital expenditure tools and ratios.

TABLE XLIX
COMPARISON OF NEEDED EDUCATION LEVELS --
EXPENSE AND COST CONTROL TOOLS

Tool	Mean Level of Education Needed Jury	Mean Level of Education Needed Sample
<u>Current Operating Expense Tools</u>		
Comparative Expense Analysis	3.42	2.15
Expense Summary Sheet	4.00	2.10
<u>Capital Expenditure Tools</u>		
Differential Analysis Report for Equipment Replacement	3.57	2.97
Fixed Assets-Long Term Liabilities Ratio	3.71	2.97
<u>Credit and Collection Tools</u>		
Score Card Credit Rating	3.16	2.87
Aging Chart Accounts Receivable	3.57	1.97
Accounts Receivable Turnover	3.71	2.55
Ratio of Accounts Receivable to: Sales, Inventories, Assets	3.71	2.80

Rating Values, Jury: 1-Eighth Grade
2-High School
3-Specialized Seminars
4-College, less than four years
5-College Degree

Rating Values, Sample: 0-of no value
1-of limited value
2-helpful, but not essential
3-imperative

Environmental Factors. The environmental factors considered most important for the use of expense control tools were accounting procedures, time, and staff. The probability of using these tools could be significantly increased by more complete utilization of the data available from the outside accountants that are employed by small retailers. The provision of forms for accumulating and summarizing the data needed for using the expense control tools would materially offset the time and staff limitations.

TABLE L
COMPARISON OF NEEDED EXPERIENCE LEVELS --
EXPENSE AND COST CONTROL TOOLS

Tool	Mean Level of Experience Needed Jury	Mean Level of Experience Needed Sample
<u>Current Operating Expense Tools</u>		
Comparative Expense Analysis	1.14	2.05
Expense Summary Sheet	1.14	2.02
<u>Capital Expenditure Tools</u>		
Differential Analysis Report for Equipment Replacement	1.42	2.92
Fixed Assets-Long Term Liabilities Ratio	1.28	2.82
<u>Credit and Collection Tools</u>		
Score Card Credit Rating	1.66	2.27
Aging Chart Accounts Receivable	1.14	2.00
Accounts Receivable Turnover	1.14	2.25
Ratio of Accounts Receivable to: Sales, Inventories, Assets	1.00	2.57

Rating Values, Jury: 0-no experience
1-general management
2-specific experience

Rating Values, Sample: 0-no experience
1-some retail experience
2-general management experience
3-actual experience with tool

CHAPTER VIII

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to determine the feasibility of developing measures or procedures whereby selected decision-making aids could be more effectively utilized by the managers of small retail firms.

The procedure in this study employed the use of semantic differential rating devices. The jury and the sample rated the fifty selected tools concerning their estimation of need and use. The Mann-Whitney "U" test, a non-parametric statistical test, was used to check for significant differences between the reported levels of need and use. The null hypothesis (H_{01}) was stated to the effect that no significant differences existed between the mean values for need and use as reported for each tool.

The sample used a semantic differential scale to report their opinions about the importance of four variables (education, experience, motivation, and environmental factors) as important determinants of use.

Two non-parametric statistical tests were used to analyze the significance of the determinant variables. The Kolmogorov-Smirnov one-sample test was employed to test the significance of the variables education, experience, and motivation. The null hypothesis (H_{02}) was to the effect that the mean ratings for the variables education, experience, and motivation would not vary significantly from the mean value

of the possible semantic responses.

The third null hypothesis (H_{03}) tested stated that the mean ranking values of the sample members concerning the importance of environmental factors were unrelated.

Summary of Sample Characteristics

The sample members of this study included four managers for each of ten different types of retail firms. Characteristics were analyzed by education, experience, and environmental factors.

Education

The mean number of years of education for all sample members was 12.57. Sixty-two per cent of the retailers had completed high school. High school programs of an academic nature were completed by three-fourths of the retailers who attended high school.

Over 60 per cent of the retailers had received some college work. Only a little over one-half of those attending college had received any business courses.

Seminars, workshops, and other specialized educational experiences were encountered by 65 per cent of the retailers. For the most part the seminars were of less than two weeks duration and dealt primarily with sales and general management practices.

Experience

The retailers in this study possessed an adequate amount of experience in quantity if not in quality. Seventy-eight per cent of the managers had been in business for more than two years. Over half of

them had been in their present positions in excess of five years.

Sixty per cent of the retail managers had owned, operated, or been employed in some phase of retailing prior to their present positions.

Environmental Factors

The average number of employees per firm was 4.4. Sixty-five per cent of the managers had an individual designated as an assistant.

Only seven of the forty firms surveyed used departmentalization to assign areas of responsibility and for accounting purposes.

Eighty-five per cent of the firms employed an outside accountant. For the most part the accountant provided only tax services and the traditional end of year statements. The Kendall Coefficient of Concordance W: test was used to test the significance of the environmental responses.

The Spearman Rank Correlation test was used to check for significant relationships between seven pairs of variables. The data from the correlation test were not intended to be part of the findings, but were considered important for recommendations that might be made for additional research.

Summary of Need and Use

The null hypothesis of no significant difference, at the 0.05 level, between the jury's mean rating of need and the sample's mean rating of use was rejected for 46 of the 50 tools. The findings conclusively show that small retailers do not, in the opinion of the jury, use decision-making tools adequately for effective management.

In three of four cases where the null hypothesis was not rejected,

the reported degree of use was quite low. The null hypothesis was rejected because the jury's ratings for these three tools was also low, and thus the differences were not significant.

An examination of the need-and-use findings in the aggregate demonstrates the wide disparity between the reported levels of need and use. The jury reported that 72 per cent of the tools would be helpful or imperative to effective decision-making. Conversely in 68 per cent of the cases the sample had only limited or no knowledge of the tools.

Thirteen tools (26 per cent) were considered by the jury to be imperative for effective managerial practices. The sample reported only two cases where tools were being used to guide daily operations and no tools were being used as a planned part of a decision-making sequence.

Summary of Determinant Variables of Use

Aggregate figures often provide perspectives that are lost when masses of data are analyzed singly or by sections. The data for the determinant variables education, experience, and motivation are summarized in toto for clarification.

Education

Education was very definitely an important determinant of use. Formal education was felt to be imperative for 26 out of the 50 tools or in 52 per cent of the cases. Additionally, formal education was believed to be helpful, though not essential, for 46 per cent of the tools.

Experience

General management experience was felt by the sample to be adequate for using 64 per cent of the selected tools. For 18 tools (36 per cent) actual experience with the selected tools was thought to be necessary to improve the feasibility of using the respective tools.

Motivation

The retailers generally were not inclined toward the use of decision-making tools. In only 16 per cent of the cases did the sample members report that the tool would be worthwhile regardless of the cost of employing it. Twenty-two of the selected 50 tools would, in the opinion of the sample, be worthwhile if the cost of their use could be minimized. Nineteen tools (38 per cent) were considered to be of limited value regardless of the cost involved in their use.

The motivational ratings were quite low in virtually every case where education and experience were considered to be very important. Apparently the retailers felt that the cost, time, or effort for using a given tool would be too great when a great deal of education or experience was needed.

Environmental Factors

The null hypothesis (H_{o_3}) was that the sample member's responses concerning the relative importance of the environmental factors were unrelated. There was a high level of agreement among the sample members. The null hypothesis was rejected in each case.

Composite mean values for each environmental factor for all tools indicate that staff was considered the most important variable. The

remaining five variables were ranked in descending order of importance as follows: time, cost, accounting procedures, equipment and supplies, and organizational structure.

The rankings assigned to the variable accounting procedures showed the greatest amount of variability. This variability of rankings can be attributed to the nature of the tools. Some tools require accounting data, while others have little or no relationship to accounting procedures. The ratings assigned to the variables, staff, time, cost, equipment and supplies, and organizational structure, were very consistent.

The staff variable never received a ranking lower than second in importance. Ninety-two per cent of the retailers ranked time no lower than third in importance. Cost was rated as moderately important. Eighty-six per cent of the retailers gave cost a rank of 3 or 4. Equipment and supplies and organizational structure were considered the least important. Seventy-eight per cent of the sample rated equipment and supplies as fifth or sixth in importance. Sixty-eight per cent of the retailers rated organizational structure as the least important variable and an additional 24 per cent felt it was next-to-last as a determinant variable of use.

Summary of Needed Education Levels

The jury was asked to indicate the level of education they believed would be needed for the use of each of the selected tools. Their judgment was based on the criteria outlined for the use of each of the tools. Additionally, the jury members were instructed to make their responses in keeping with conditions normally found in small retail firms.

The retailers in the sample were also asked to indicate their perceptions about the importance of formal education as a determinant of use. A comparison of the responses by the jury and the sample aided in the determination of the degree of feasibility of use that might be expected.

The jury indicated that specialized seminars or some college educational experiences would be needed for using 78 per cent of the tools.

The sample members reported that formal education would be imperative for the use of 52 per cent of the selected tools. Education was thought to be helpful, but not essential, for the use of 46 per cent of the tools.

Summary of Needed Experience Levels

The level of experience needed for the use of the selected tools was indicated by both the jury and the sample. The jury and sample opinions were in close agreement concerning the aggregate need for experience.

The jury indicated that general management experience would be adequate for 56 per cent of the tools. The sample thought that general management experience would suffice for the use of 62 per cent of the selected tools.

The need for specific experience with certain tools was felt to be necessary by the jury for 44 per cent of the tools. The sample's expressed need for specific experiences applied to 38 per cent of the tools.

Summary of Feasibility of Use

Feasibility of use is a function of the potential user's background (education and experience), attitudes and motivations, and the limiting and enabling environmental factors.

A general pattern of relationships between use, education, experience, and motivation become apparent when the data were analyzed in their entirety. When the reported degree of use was very low, the importance attached to education and experience was extremely high. At the same time when the use ratings were low, the motivational ratings were generally quite low also. It is significant to note that there tends to be a direct relationship between degree of use and attitude about the usefulness of the tools. The feasibility of increasing the use of the selected tools is dependent upon improving the attitudes or motivation of the retailers in many cases.

The feasibility of use may be increased by the development of materials that are designed to motivate the retailers to use selected tools. Primarily, it will be necessary to demonstrate in practical ways that the tools being considered are imperative to improved management practices.

Time, staff, cost, and accounting procedures were considered the most important determinant environmental factors. It will be necessary to show that any procedures for improving the use of tools can be made compatible with the crucial environmental variables.

The sample members perceived of education and experience as important determinants of use. The logical first step for improving the feasibility of use of management decision-making tools would be educational efforts.

Feasibility could be significantly increased by the use of educational materials designed to provide experience through the use of problems and hypothetical case situations. The cases and problems must be designed to fit the staff, time, cost, and accounting procedures generally found in small retail firms. It will be necessary to show that the data sources for the use of the tools are available without incurring costs that are disproportionate to the returns gained from using the tools.

It can be demonstrated through educational materials that the use of tools can improve managerial effectiveness. Cost control, released management time, and improved utilization of staffs will do much to offset negative attitudes.

Conclusions

1. Knowledgeable people in the field of retailing recognize that decision-making tools and data sources are imperative to effective management practices.

2. Small retailers do not use, to any appreciable degree, tools or available data sources for planned decision-making in managing the functions of their firms.

3. Education is a significant determinant of the feasibility of use. There is an inverse relationship between the degree of use and the sample's perceived value of education.

4. The small retailers in the sample do not generally possess an adequate degree of specialized educational expertise for the use of many of the selected tools.

5. Experience was perceived by the retailers as an important variable influencing the use of the selected decision-making tools.

6. The sample members have sufficient experience to utilize a majority of the selected tools. Virtually all the selected tools could be used if they were modified to fit the crucial environmental factors.

7. Motivation was an extremely significant determinant variable of use. In a majority of the cases the sample members were not favorably inclined toward the use of the selected tools.

8. A high amount of agreement exists among the sample members concerning the relative importance of environmental factors as determinants of use.

9. The small retailers in this sample are not using fully the available data sources as aids to improved management.

10. Retail personnel, accountants, and outside data sources are not being properly employed to provide much needed decision-making information.

11. The feasibility of improving the use of decision-making tools can be increased by educational methods. The materials or procedures developed will need to give particular attention to the costs and returns involved in using any specific tool.

12. Initial contacts to acquaint retailers with decision-making tools and data sources will need to be designed to offset management's apathy towards the use of tools.

13. Pre-programmed formats will need to be developed for many of the tools in order for their use to be feasible within the environments found in small firms.

Recommendations

1. Additional study should be undertaken to determine the effect of decision-making tools as it relates to success or failure.
2. Studies need to be attempted where the various determinant variables of use can be controlled to determine the relative importance of each variable on effective management practices.
3. It would be beneficial to do in-depth studies to identify all possible variables that could be considered determinants of use of decision-making tools.
4. Specialized studies dealing with the full range of motivational aspects of management of small firms should be considered.
5. Controlled experimental studies should be conducted to investigate the procedures, problems, and results of using decision-making tools adapted for use by small firms.
6. The degree of correlation between the use of tools and a multiplicity of variables (tenure, education, experience, motivation) would be pertinent to improved management practices.
7. Research should be conducted to determine the amount of time which retail managers actually spend on management functions.
8. A retail audit needs to be conducted to assess the amount and quality of specific data sources that are available for use by small retailers.
9. A great deal of useful data could result from a comparative study of retail firms stratified by levels of management practices and corresponding levels of success.

10. An inquiry needs to be made concerning the relative competitive posture of small retailers vis-a-vis their larger retail counterparts.

11. A comprehensive literature search for tools presented in pre-programmed formats appropriate for small firms would be beneficial to retail managers and students of retailing.

12. The findings in this study may be used as a basis for restructuring and simplifying decision-making tools for use by small retail firms.

13. Educational materials designed to stimulate interest in the use of information sources and decision aids should be developed. The findings in this study can serve as a point of departure for developing the necessary materials.

14. The findings in this study should be used as a guide for developing hypothetical case materials. The case materials should emphasize increased management effectiveness as a direct result of using the modified decision-making tools.

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APPENDIX A

LETTERS TO SAMPLE MEMBERS

SOUTHWESTERN STATE COLLEGE

Weatherford, Oklahoma 73086



DIVISION OF BUSINESS AND BUSINESS EDUCATION

Gentlemen:

Economic and competitive developments are making it increasingly difficult for independent retailers to meet the "profit squeeze" that is caused by rising costs and the proliferation of sales by large retailers.

Many decision-making tools are available to aid management. Unfortunately many of these aids cannot be used by smaller retailers because they do not fit the backgrounds of independent retailers or the environments in which they operate.

The ultimate objective of this research project is to determine if it is feasible to adopt some of the more common decision-making aids for use by smaller retailers. Naturally the tools must fit the conditions found in small retail firms. We need your responses concerning the data on the questionnaire to allow us to make an investigation of possible ways to help retailers by structuring these tools for use by independent firms.

All information will be strictly confidential. No firm or individual will be identified with any response after the data has been tabulated.

I sincerely appreciate your help and will be happy to furnish you with an extract of the study upon its completion.

Sincerely,

A handwritten signature in cursive script that reads "Roger W. Egerton".

Roger W. Egerton
Assistant Professor

SOUTHWESTERN STATE COLLEGE
Weatherford, Oklahoma 73088



DIVISION OF BUSINESS AND BUSINESS EDUCATION

Gentlemen:

The following forms are being considered as part of a questionnaire that will be used with small independent retail firms. I would appreciate your looking it over and indicating any parts that you think are unclear or which might need additional explanation.

If you think of additional information that would be useful in developing a general profile of retailer's backgrounds and environmental operating factors, I would appreciate your making a note of it.

Sincerely,

Roger W. Egerton
Roger W. Egerton
Assistant Professor

APPENDIX B

LETTERS TO MEMBERS OF THE JURY

SOUTHWESTERN STATE COLLEGE
Weatherford, Oklahoma 73088



DIVISION OF BUSINESS AND BUSINESS EDUCATION

February 13, 1970

Dear Dr. _____:

Research in the area of retail management has definitely been lacking for many years. Increased emphasis on marketing and distribution makes research in this field even more crucial now.

I am planning a study (Ed.D. at Oklahoma State University) concerning the feasibility of using decision-making tools for small retail managements.

As a recognized authority in the retailing field, I am soliciting your help. I need a jury of retail experts to aid me in selecting the proper tools for consideration and in making a judgement of the criteria necessary for the use of each tool.

I would submit to you a list of the tools I have screened from the literature. I would need for you to evaluate the appropriateness of each tool for use in most types of small retail firms. This could be done by checking a differential rating scale. Additionally, after we have agreed upon the proper tools for consideration, I would need for you to review the criteria and indicate, by checking a scale, the extent to which you agree that it would be an essential requirement for employing each of the tools. I feel that perhaps the evaluation would not require more than an hour or two of your time.

Essentially, I am trying to determine the extent to which the selected tools are being used and which variable or variables (education-experience-environment-motivation) contributes to their non-use. I believe this study will have significance in that it will serve as a guide for developing teaching materials for retail management classes and for developing seminar material for consulting work with retail managers. I will be happy to send you a summary of the research upon its completion.

I hope you will consider helping with this evaluation.

Sincerely,

Roger W. Egerton
Assistant Professor

SOUTHWESTERN STATE COLLEGE
Weatherford, Oklahoma 73088



DIVISION OF BUSINESS AND BUSINESS EDUCATION

May 7, 1970

Dear Mr. _____:

DON'T PANIC! The material looks very long and time-consuming -- it isn't.

I have placed each tool on a separate page and structured the responses so that, hopefully, they can be handled with a minimum of time and effort. Each tool or aid that you rate "zero" (not an appropriate tool for small retail firms) you may disregard evaluating the criteria. I would appreciate it very much if you would indicate on the colored sheet at the end of each section any additional tools or aids that you know about that would be useful to small retailers.

Again, thanks for your help.

Sincerely,

A handwritten signature in cursive script that reads "Roger W. Egerton".

Roger W. Egerton
Assistant Professor

SOUTHWESTERN STATE COLLEGE
Weatherford, Oklahoma 73860



DIVISION OF BUSINESS AND BUSINESS EDUCATION

May 5, 1970

Dear Jury Member:

Thank you very much for agreeing to act as a panel member to evaluate the tools and criteria for my research study.

A very heavy teaching load plus some family illness (and a broken foot) delayed the preparation of the materials. I hope that it will not be inconvenient for you to make your evaluation at this time.

The firms included in the sample of the study will be small, independently owned firms which have ten or less employees and which do \$300,000 of business (at retail) or less. The sample will consist of four firms in each of the following categories: hardware, food, apparel, shoes, furniture, appliance, drug, book and office supply, sporting goods, and gift-accessories.

Your decisions about the degree of usefulness of the tools and aids and the necessary criteria should be made in keeping with practices as commonly found in most small firms.

I feel sure that your responses will be invaluable in structuring my data gathering instruments and will serve as guides against which my findings can be evaluated.

Sincerely,

Roger W. Egerton
Assistant Professor

APPENDIX C

SAMPLE PROFILE QUESTIONNAIRE

RETAIL MANAGEMENT QUESTIONNAIRE

Firm Number _____
 City Code _____
 Firm Type _____

Part I EDUCATION

1. How many years of formal education have you completed?
- | | |
|--------------------|---------------------------------|
| 1. 0-6 years () | 4. College, 2 years or less () |
| 2. 7-9 years () | 5. College, 3 years or less () |
| 3. 10-12 years () | 6. College degree () |
2. If you completed high school, what type of program did you pursue?
- | | |
|----------------------------|---|
| 1. Academic () | 4. Agricultural () |
| 2. Commercial Business () | 5. Distributive Education () |
| 3. Industrial () | 6. Other ()
Nature of Program _____ |
3. What specific commercial or business courses were taken in high school?
- | | |
|-------------------------|----------------------------|
| 1. Bookkeeping () | 4. Business Arithmetic () |
| 2. Typewriting () | 5. Economics () |
| 3. General Business () | 6. Others: _____ |
4. If any college work was completed, what business courses did you complete in college:
- | Courses | Hours of credit | Courses | Hours of credit |
|---------------|-----------------|-----------------|-----------------|
| 1. Accounting | _____ | 5. Finance | _____ |
| 2. Economics | _____ | 6. Salesmanship | _____ |
| 3. Management | _____ | 7. Advertising | _____ |
| 4. Marketing | _____ | 8. Retailing | _____ |
| Others | _____ hours | _____ | _____ hours |

Part I EDUCATION

6. Have you participated in any seminars, workshops, or short training courses that were related to some aspect of retailing? 1. () Yes
2. () No

If yes, what was the nature and duration of your participation?

Type of Program	Duration of Program
_____	_____
_____	_____
_____	_____

7. Have you participated in any specific management training programs, either sponsored or of a self study nature?

Type or Nature of Program	Duration of Program
_____	_____
_____	_____

Will you please indicate any additional information you believe would be useful in developing a general profile of the educational background of small independent retail owners and managers. This data will be used to determine the structure that decision-making tools will need to have to be useful by small retailers.

RETAIL MANAGEMENT QUESTIONNAIRE

Part II EXPERIENCE

1. What is your present capacity?

- 1. Owner ()
- 2. Owner-manager ()
- 3. Manager ()
- 4. Assistant Manager ()
- 5. Accountant ()
- 6. Other _____

2. How long have you been actively associated with your present business? _____ years

3. Have you in the past owned, operated, or been associated with other small businesses? 1. () yes 2. () no

4. If you have had prior small business experience, please check the following:

Type of Business	Capacity	Tenure
_____	_____	_____
_____	_____	_____
_____	_____	_____

5. What specific management capacities have you fulfilled prior to your present position?

- 1. Selling ()
- 2. Sales Management ()
- 3. Accounting ()
- 4. Purchasing ()
- 5. Advertising ()
- 6. Personnel Management ()
- 7. Merchandise Control ()
- 8. Pricing ()
- 9. Credit - Collections ()
- 10. Customer Relations ()
- Other _____
- Other _____

6. What management experiences or work experience have you had outside of the general area of retailing?

Type of Experience	Capacity	Tenure
_____	_____	_____
_____	_____	_____
_____	_____	_____

RETAIL MANAGEMENT QUESTIONNAIRE

Part III ENVIRONMENT

1. The staff of this firm consists of _____ (number) of persons including the owner or owner-manager.
2. A breakdown of the staff by activities is as follows:

Activity	Number of Persons Performing This Activity	Approximate Per Cent of Time Devoted to This Activity by Each Person			
		100%	50%	70%	20%
EXAMPLE Sales	4	100%	50%	70%	20%
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

3. Is there a person designated as "assistant" who has the authority to make decisions in the absence of the owner or manager?
 1. () yes 2. () no If yes, what is this person's normal capacity? _____
4. Are the activities of the firm divided into areas of responsibility with an individual assigned supervisory duties for the various activities? 1. () yes 2. () no

If yes, what type of training and experience has this middle manager had?

Will you please indicate any additional information you believe would be useful in developing a general profile of the environmental conditions of small retail firms (data dealing with costs, time, staff, equipment, and operating procedures would be appropriate). This data will be used to determine the structure that decision-making tools will need to have to be useful by small retailers.

5. Do you receive management aids from any franchised source?
 1. () yes 2. () no

RETAIL MANAGEMENT QUESTIONNAIRE

Part III ENVIRONMENT

6. Do you have a staff member (including yourself) who is assigned accounting or bookkeeping duties? 1. () yes 2. () no
7. If yes, does he perform other duties? 1. () yes 2. () no
8. If the answer to question 6 is yes, what per cent of his time (approximate) is devoted to accounting procedures?
1. () 25-50% 2. () 50-75% 3. () 75-100%
9. Do you use an outside accountant or bookkeeper?
1. () yes 2. () no
10. Please indicate who has the primary responsibility.

1 = Accountant

2 = Specific individual assigned the responsibility

3 = Owner or manager has this responsibility

Accounts Receivable _____

Inventory Control _____

Payroll-Time Keeping _____

Accounts Payable _____

Daily Cash Records _____

11. Do you have an organizational structure outlined for your firm?
1. () yes 2. () no

EXAMPLE

Owner
_____Manager
_____Assistant Manager or Supervisor

Sales Purchasing General

12. Please check the items of equipment used in your firm.

1. Cash Register _____

2. Adding - Listing Machines _____

3. Bookkeeping Machines _____

4. Time Clocks _____

Other _____

APPENDIX D

SAMPLE QUESTIONNAIRE-TOOLS

MANAGEMENT DECISION-MAKING AREA: Personnel Management

Tool -- Aid: Employment Tests

Description: Employment tests are generally administered to evaluate the skill, aptitude and personality of the individual applicant for a given position. Employment tests are generally constructed by professionals and are available from test publishing firms. They can be administered, scored, and interpreted by the manager. Their purpose is to supplement the data received during the personal interview and on the application form. They are strong indicators of the applicant's ability to handle his job.

The data contained in this questionnaire will be used to study the feasibility of changing some common decision-making tools for greater use by independent retailers. Will you please review the description of this tool and mark the degree to which it is currently being used.

EXPLANATION OF RATINGS

- 4 - Tool must be written or well verbalized and actually utilized for planned decision-making that relates to this area of management.
- 3 - Management is generally aware of this tool or the criteria for its use. It is used to aid in guiding the firm's operations, but it is not a part of a planned decision-making sequence.
- 2 - Some information is available that relates to this tool or the criteria for its use. Management refers to this data but does not use it for the specified purpose of making decisions.
- 1 - Management has only limited knowledge of this tool. No specific data relating to this tool or its criteria is in use.
- 0 - Management has no knowledge of this tool.

We will, ultimately want to determine if we can devise methods for using this tool that will be consistent with the backgrounds and environments of independent retailers. We need your response concerning the importance of education, experience, motivation, and environmental factors as they relate to the use of this tool.

MANAGEMENT DECISION-MAKING AREA: Personnel Management

Tool -- Aid: Job Analysis

Description: A job analysis is a description of the specific duties involved in a given job. It should contain the exact nature of the work; the training needed for entry and advancement in the position; the equipment and supplies to be used; and an expression of the physical and mental requirements of the job. The job analysis should be used in the development of compensation plans and promotion policies. It contributes to the morale of the staff.

MANAGEMENT DECISION-MAKING AREA: Personnel Management

Tool -- Aid: Performance Evaluation Checksheet

Description: The performance checksheet is designed to allow an objective evaluation of an employee's performance. It permits one to rate the employee on his: skill, personality, attitude, motivation, judgment, and maturity. It contains an evaluation of his responsiveness to direction, and his ability to supervise. It provides data on which one can base decisions concerning training, compensation, and promotion.

MANAGEMENT DECISION-MAKING AREA: Personnel Management

Tool -- Aid: Interview Checksheet (Patterned Interview Form)

Description: The interview checksheet is designed to guide the manager in conducting the personal interview with employment applicants. It should aid in the securing of personal information, while communicating to the applicant basic information about the firm. It should serve as an aid in maintaining rapport and objectivity. Combined with the application form, it provides a composite evaluation of the applicant for a given position.

MANAGEMENT DECISION-MAKING AREA: Personnel Management

Tool -- Aid: Employment Application Form

Description: The employment application form is used to collect and summarize information pertinent to the selection of an employee. It should be flexible enough to fit all positions and allow the manager to make a wise decision.

MANAGEMENT DECISION-MAKING AREA: Personnel Management

Tool -- Aid: Training Manual

Description: A training manual is designed to acquaint employees with policies and operating procedures of the firm. It should also contain: training information, promotional policies, job requirements and responsibilities, and an organization chart. The purpose of the training manual is to clarify the firm's policies in every area of concern to employees.

MANAGEMENT DECISION-MAKING AREA: Inventory Control Tools -- Direct

Tool -- Aid: Inventory Turnover Figure

Description: The merchandise inventory turnover figure represents the number of times the average value of the inventory is sold. The turn figure may be calculated:

$$\frac{\text{Cost of Goods Sold (CGS)}}{\text{Average Inventory (at cost)}} \quad \text{or} \quad \frac{\text{Net Sales}}{\text{Average Inventory (retail)}}$$

The inventory turn rate utilizes a sales figure and cost of inventory. It provides a very useful ratio of the effectiveness of producing sales (turn merchandise) with a given amount of merchandise investment.

MANAGEMENT DECISION-MAKING AREA: Inventory Control Tools -- Direct

Tool -- Aid: Merchandise Age Analysis Report

Description: The merchandise age analysis report provides data concerning receipts of goods and length of time in stock. It is a particularly useful aid in the taking of markdowns and in ordering. The system commonly used is to date-code the merchandise and periodically complete a physical age analysis. Age analysis results may be summarized in a merchandise report.

MANAGEMENT DECISION-MAKING AREA: Inventory Control Tools -- Direct

Tool -- Aid: Inventory Control-Perpetual

Description: A perpetual inventory control system is designed to provide continuous data concerning sales, purchases, stock conditions, outstanding orders, and cost information. It can facilitate pricing, buying, selling, and claims processing. Additionally it may furnish data concerning sales trends, shipping time and costs, and required stock levels. It is often considered as the single most useful tool for the smooth, daily operation of a retail firm. It is best suited for "large ticket" items and it is particularly useful if off-sales-floor stocking is maintained.

MANAGEMENT DECISION-MAKING AREA: Inventory Control Tools -- Direct

Tool -- Aid: Inventory Control-Periodic

Description: A periodic inventory control system permits a systematic means of checking on stock conditions and facilitates reordering. It facilitates the displaying of merchandise and the noting of price changes. It directs attention to back-orders, substitutions, and cancellations. It involves a procedure of periodically reviewing physical inventory conditions. The inventory count may be compared with a standard level of inventory requirements or judgment may be used to determine re-ordering points. Its chief value lies in the forced review of inventory conditions.

MANAGEMENT DECISION-MAKING AREA: Inventory Control Tools -- Direct

Tool -- Aid: Purchase Returns Analysis

Description: The purchase returns analysis form summarizes data concerning the amount and kind of merchandise returned to vendors. It also shows any allowances that have been received. Notations are recorded to indicate the reason for returns or allowances and the disposition of the return or the request for an allowance.

MANAGEMENT DECISION-MAKING AREA: Indirect Merchandise Control

Tool -- Aid: Pricing Control Slip or Invoice

Description: The pricing control slip or notated invoice provides management with information concerning the marking of merchandise. It calls attention to price changes (cost), markups, and any discrepancies in items or prices on the invoice. It insures that all pricing decisions are brought to the attention of the manager without bothering him with routine details that can be handled by the staff.

MANAGEMENT DECISION-MAKING AREA: Indirect Merchandise Control

Tool -- Aid: Receiving Report

Description: The receiving report is used to record all pertinent information concerning the receiving of merchandise. It consists of the following data: resource name, invoice number and date, name of the carrier, freight bill number and date, and number of pieces received with the rates and weight of the shipment. Any discrepancies or damages should be noted. The report should be signed by the individual receiving the shipment. The information from the receiving reports is very beneficial in filing freight claims, negotiating with resources and in making decisions concerning resources and carriers.

MANAGEMENT DECISION-MAKING AREA: Indirect Merchandise Control

Tool -- Aid: Purchase Terms Analysis

Description: The analysis of purchasing terms is a means of summarizing data concerning terms and costs of purchasing from several resources. It brings together in one document a comparison of: the amount and percentage of discounts, freight costs, dating terms, title acquisition, and the disposition of returns and allowances. It is an aid to the retailer in evaluating resources and negotiating for terms.

MANAGEMENT DECISION-MAKING AREA: Indirect Merchandise Control

Tool -- Aid: Resource Rating Guide

Description: The resource rating guide is a device for making a comparative analysis of the performance of the resources with which you do business. It generally employs some method of assigning weighted values to the various pertinent characteristics of suppliers of merchandise. Basic considerations to be evaluated are: reliability, buying and shipping terms, territory protection, pricing and promotion policies, service, and frequency of contact.

MANAGEMENT DECISION-MAKING AREA: Indirect Merchandise Control

Tool -- Aid: Markdown Control Sheet

Description: The markdown control sheet summarizes all pertinent data concerning the taking of markdowns. It should include the amount of markdowns by departments or lines of merchandise and the resource from which the goods were received. Causes of the markdowns should be noted as well as the effect of the markdown upon the salability of the merchandise. A cumulative record of all markdowns expressed as a per cent of the selling price should be available.

MANAGEMENT DECISION-MAKING AREA: Indirect Merchandise Control

Tool -- Aid: Markup Conversion Chart and Markup Formulas

Description: The markup chart provides a ready reference of the relative markups based on cost and selling values. The markup chart saves time and reduces errors in pricing.

MANAGEMENT DECISION-MAKING AREA: Indirect Merchandise Control

Tool -- Aid: Freight Claim Report

Description: The freight claim report provides a means of recording all data necessary for the filing of damage and loss claims. It allows management to check on the disposition of claims and facilitates and insures that all claims are processed. The actual handling of the claim can be delegated to staff members. Some method of identifying merchandise with specific invoices, freight bills, and inspection reports is necessary.

MANAGEMENT DECISION-MAKING AREA: Indirect Merchandise Control

Tool -- Aid: Merchandise Document Control Slip

Description: The merchandise document control slip contains information concerning acknowledgements, invoices, freight bills, and delivery receipts. Its use is initiated by attaching it to the original order. As the acknowledgement, invoice, freight bill, and delivery receipt are received they are noted on the document slip by entering their number and date. The document control slip provides a cross reference for the location of all papers necessary for filing claims, taking discounts and any correspondence that may be necessary.

MANAGEMENT DECISION-MAKING AREA: Sales and Promotion -- Control

Tool -- Aid: Sales Training Plan

Description: A sales training plan is a written document outlining all aspects of a training sequence. It should contain specific data concerning: who is to be trained; the duration of the training period; the responsibility for the training; methods to be used; and an evaluation plan. The relationship of the training sequence to promotion and compensation policies should be clearly stated. The sales training plan has as its objectives: the improvement of the skills of the sales force; and the improvement of employee morale. It clarifies management's policies on pay, promotions, and employee production levels.

MANAGEMENT DECISION-MAKING AREA: Sales and Promotion -- Control

Tool -- Aid: Salesperson's Productivity Report

Description: The salesperson's productivity report summarizes the activity of each sales staff member in line with the objectives of the firm. It normally accumulates data about the amount of sales, per cent of markup maintained, number and type of transactions completed, and any data the manager may find useful in his evaluation and compensation of the staff.

MANAGEMENT DECISION-MAKING AREA: Sales and Promotion -- Control

Tool -- Aid: Advertising Budget Appropriation

Description: The advertising budget appropriation is a method of determining the amount of dollars to spend for promotion in line with some stated objectives. The appropriation may be determined by one of the following methods: a per cent of sales; competitive parity; all excess funds; or the objective-task approach.

MANAGEMENT DECISION-MAKING AREA: Sales and Promotion -- Control

Tool -- Aid: Advertising Media Evaluation Analysis

Description: The media evaluation analysis summarizes the managers' findings about the cost and effectiveness of using various media. Effectiveness is generally stated in terms of coverage, frequency of contact, continuity maintained and facilities and services available. Direct results may also be tabulated when they are in terms of sales, calls for special items, redemption of coupons or other concrete measurable items.

MANAGEMENT DECISION-MAKING AREA: Sales and Promotion -- Control

Tool -- Aid: Customer Service and Adjustment Report

Description: Customer services and adjustments can be very expensive if not properly controlled. Customer relations are crucial to retailers and particularly to small independents who may not be able to compete equitably in other areas with the larger firms. The service and adjustment report summarizes for management: the number and dollar costs of services and adjustments; and the disposition of all claims. Its use is imperative for decisions concerning services and adjustments. It is also a needed document for accounting for an integral phase of the operations.

MANAGEMENT DECISION-MAKING AREA: Sales and Promotion -- Evaluation

Tool -- Aid: Sales Increment Formula (Gist, 1)

Description: The sales increment formula is a means of estimating additional sales that might be generated as a function of proximity and compatibility of competitors. Its use demands an estimate of the volume of business by competitors, an estimate of the per cent of people planning to shop each competing firm, and the degree of interchangeability of shopping among competing firms.

$$\text{Formula: } V = I \cdot \frac{V_l}{V_s} \cdot (P_l + P_s) \cdot (V_l + V_s)$$

I = degree of customer interchange in shopping
 V = increase in volume of two stores
 V_l = volume of large store
 V_s = volume of small store
 P_l = proposed degree of shopping at large store
 P_s = proposed degree of shopping at small store

MANAGEMENT DECISION-MAKING AREA: Sales and Promotion -- Evaluation

Tool -- Aid: Sales Forecast

Description: A sales forecast is an estimate of expected sales activity for a future period of time. The forecast is crucial for planning because all phases of the business generate from the amount of sales activity. The forecast should be based on past sales records and the best available data concerning general and industrial economic conditions. Seasonal and special events as well as general and local business conditions should be considered in developing the forecast.

MANAGEMENT DECISION-MAKING AREA: Sales and Promotion -- Evaluation

Tool -- Aid: Trade Area Delineation Formula

Description: A trade area delineation formula describes the boundaries of your primary trading area. It is based on the relative population and distances between trading areas. It indicates the probability of customer "pulling" power of each trading area. The formula for its computation as presented by Gist (1) is:

$$1 + \frac{\text{miles between cities}}{\sqrt{\frac{\text{population of city "A"}}{\text{population of city "B"}}}}$$

MANAGEMENT DECISION-MAKING AREA: Sales and Promotion -- Evaluation

Tool -- Aid: Retail Store Saturation Index (Gist, 1)

Description: The retail saturation index is an aid in determining the potential for opening a firm or for the expansion of existing facilities. The index is a function of the number of potential customers in the trade area, the average annual household expenditure for a given line of goods and some comparative measure of the competitive situation.

$$\text{Formula: } \frac{C \cdot RE}{RF}$$

C = number of customers in the trading area
 RE = retail expenditures on an average annual household basis for a given line of goods
 RF = retail firms on some comparative basis (square feet of floor space)

As (RF) increases by the existence of a new firm or expansion of an existing firm in relation to (C · RE) the potential for any given firm decreases.

MANAGEMENT DECISION-MAKING AREA: Sales and Promotion -- Evaluation

Tool -- Aid: Buying Power Index

Description: The buying power index indicates the relative attractiveness of a trading area. It is based on population, retail sales, and buying power as a per cent of the total for the United States. It could be utilized in decisions concerning the expansion of the business into new areas or in appraising areas for a new firm or branch.

MANAGEMENT DECISION-MAKING AREA: Sales and Promotion -- Evaluation

Tool -- Aid: Demographic Trade Area Analysis

Description: A demographic trade area analysis is a comprehensive description of the characteristics of the clientele that comprise a trading area. It may be used to define and segment targets and to ascertain whether a reasonable opportunity for success exists in the area. The analysis can, for the most part, be constructed from published secondary data. The analysis consists of data about income levels, stages in the life cycle, household expenditures, population, and occupations. The secondary data may be supplemented by primary data including housing starts, utilities in use, and traffic counts.

MANAGEMENT DECISION-MAKING AREA: Operating Indicators

Tool -- Aid: Retail Method of Inventory Costing

Description: The retail method of inventory costing is a method of applying a "cost complement" to retail inventory values to arrive at the cost value of inventories and cost of goods sold. It requires a knowledge of "percentage of markup" on lines of merchandise. The retail method of inventory costing facilitates the determining of departmental gross margins without the necessity and cost of counting the merchandise.

MANAGEMENT DECISION-MAKING AREA: Operating Indicators

Tool -- Aid: Stock-to-Sales Ratio

Description: The stock-to-sales ratio is an indicator of the dollar amount of sales in relation to the dollar amount of inventory being maintained. It is normally based on past experience and should be compared to published data for effective use. If it is computed by time periods and departments, it is a very useful aid in planning for purchases and the maintenance of required inventory levels.

MANAGEMENT DECISION-MAKING AREA: Operating Indicators

Tool -- Aid: Open-to-Buy Analysis

Description: An open-to-buy analysis is a tool that aids in the determination of the amount of merchandise to receive into stock to accomplish the expected sales budget and maintain desired inventory levels. An open-to-buy analysis requires a sales estimate and a decision concerning inventory levels. Additionally, information concerning losses, markdowns, returns, withdrawals, and outstanding orders are needed for its use.

MANAGEMENT DECISION-MAKING AREA: Operating Indicators

Tool -- Aid: Gross Sales Analysis

Description: The gross sales analysis is a means of examining the amount and percentage that sales revenue exceeds the cost of the goods sold. It indicates the amount and percentage of sales dollars that are available to cover operating expenses and to contribute to profits. Its use is dependent upon an accurate accounting of sales, purchases, inventories, and both sales and purchases returns and allowances. Gross sales analysis based on departments, lines of merchandise, or other comparative delineations enhances management's use of the tool.

MANAGEMENT DECISION-MAKING AREA: Operating Indicators

Tool -- Aid: Net Sales to Asset Ratio

Description: The net sales to asset ratio is an indication of how efficiently assets are being employed in the production of sales. It is necessary to have an accounting of net sales and the total amount of assets employed. It may be used to make comparisons for time periods, departments or with similar types of firms.

MANAGEMENT DECISION-MAKING AREA: Operating Indicators

Tool -- Aid: Gross Margin per Square Feet of Floor Space

Description: The gross margin per square feet of floor space is actually an indicator of the "cost" or value of the available selling space. It is a method of equating gross margins (sales less cost of merchandise sold) with the space utilized for the sale of the goods. It provides a measure of the relative profitability (gross) of departments or lines of merchandise in terms of space required for their handling and sales.

MANAGEMENT DECISION-MAKING AREA: Financial Data

Tool -- Aid: Daily Cash Report

Description: The daily cash report summarizes the cash flow for the day. It is an audit document that permits control and pinpoints responsibility for all cash transactions. It should contain beginning and end-of-day cash balances, cash receipts and sales, cash paid-outs, withdrawals, and the signature of all responsible persons.

MANAGEMENT DECISION-MAKING AREA: Financial Data

Tool -- Aid: Balance Sheet

Description: The balance sheet is a position paper in that it presents a firm's statement of condition as of a given date. When it is used on a comparative basis the balance sheet reflects trends in net ownership as a result of operations for past periods. Balance sheet items should be shown as percentages as well as dollar amounts to make comparative analysis feasible and meaningful.

MANAGEMENT DECISION-MAKING AREA: Financial Data

Tool -- Aid: Break-Even Analysis

Description: A break-even analysis is a useful tool to indicate the amount of sales that must be made to cover all costs. It can also be used to determine the amount of profit that will occur given a sales and cost estimate. It provides useful data for decisions concerning expansion and for controlling various segments of the business. A break-even analysis requires data concerning costs that vary with sales volume and the total amount of fixed costs.

$$\text{Formula: } \frac{FC}{1 - \frac{VC}{S}}$$

FC = fixed costs
VC = variable costs
S = sales

MANAGEMENT DECISION-MAKING AREA: Financial Data

Tool -- Aid: Profit and Loss Statement

Description: The profit and loss statement is a reflection of revenue and expenditure results for a past period. It is a basic decision-making aid and should be available on an interim period basis -- quarterly or monthly. The line items of the statement should be converted into percentages based on net sales. The percentage conversion allows a meaningful comparison with other periods and with average figures for similar firms.

MANAGEMENT DECISION-MAKING AREA: Financial Data

Tool -- Aid: Financial Ratios and Analyses -- Current Ratio, Acid-Test Ratio, Equity to Debt Ratio, Return on Investments, Ratio of Sales to Working Capital

Description: Financial ratios are indicators of stability, profitability, and solvency. They are readily comparable with similar outside data and they provide the basis for developing trends for evaluation. Properly interpreted they serve management well in making decisions about investments and financing. They can be computed from data contained in the balance sheet and the income statement.

MANAGEMENT DECISION-MAKING AREA: Financial Data

Tool -- Aid: Contribution Margin Income Statement or Analysis

Description: The contribution margin statement is a valuable management evaluation tool. It is based on the concepts of accountability and responsibility. Departments or other segments of the firm are evaluated only on those revenue and cost elements that are clearly associated with the given department. It indicates the "contribution" (sales minus traceable or variable costs) that a segment of the firm makes towards the covering of fixed (unassignable) costs and thus subsequently to the profits of the firm.

MANAGEMENT DECISION-MAKING AREA: Expense and Cost Control

Tool -- Aid: Expense Summary Sheet

Description: The expense summary sheet facilitates the classification of expenses by departments or functions. It is a necessary document if departments are to be evaluated properly. If expenses are properly classified and analyzed, management is better qualified to make decisions relative to cost control.

MANAGEMENT DECISION-MAKING AREA: Expense and Cost Control

Tool -- Aid: Comparative Expense Analysis

Description: The expense analysis summarizes expenses by departments, functions or other delineation methods. Expenses are generally stated as a percentage of sales and are comparable with like time periods and with national and regional averages. The analysis allows the manager to examine the utilization of assets (expiration of expenses) to produce sales and the control of overhead expenses to produce a profit.

MANAGEMENT DECISION-MAKING AREA: Expense and Cost Control

Tool -- Aid: Differential Analysis Report for Equipment Replacement

Description: The differential analysis report summarizes the difference in revenues and costs of the alternatives of keeping or replacing old equipment. It provides a decision base for acquiring new equipment that is cost-revenue oriented. Differential analysis requires that sunk (non-retrievable) cost of the present equipment be disregarded. Additionally one needs to know new equipment costs, variable costs of operating both the old and new equipment, and an estimate of salvage values of the old equipment.

MANAGEMENT DECISION-MAKING AREA: Expense and Cost Control

Tool -- Aid: Ratio of Fixed Assets to Long-Term Liabilities

Description: The ratio of fixed assets to long-term liabilities indicates the dollar relationship of long-term assets to long-term debt. It is indicative of the firm's stability and its borrowing ability over a long period of time.

MANAGEMENT DECISION-MAKING AREA: Expense and Cost Control

Tool -- Aid: Ratio of Accounts Receivable to Sales, Inventories, and Assets

Description: The amount of money one has "out on account" significantly affects the amount of funds for inventories or other assets which are needed for the continuous generation of sales (assuming that funds are not unlimited). The ratio of accounts receivable to sales, inventories, and assets may be used to estimate, when compared with national and regional averages, the safe limits of the receivables. These ratios require the availability of data about sales, accounts receivable, inventories, and asset investments.

MANAGEMENT DECISION-MAKING AREA: Expense and Cost Control

Tool -- Aid: Aging of Accounts Receivable Chart

Description: The accounts receivable aging chart summarizes the dollar amount of outstanding accounts by the amount of time they are past due. It permits the development of a trend analysis that is indicative of collection effectiveness. It directs management's attention to the amount of credit funds that may be needed and to individual accounts that need evaluation as to the reason for non-payment.

MANAGEMENT DECISION-MAKING AREA: Expense and Cost Control

Tool -- Aid: Accounts Receivable Turnover

Description: The accounts receivable turnover rate is an indicator of collection effectiveness in relation to the credit terms being granted. Its calculation is net sales on account for a given period divided by the average amount of accounts receivable outstanding for the period. The accounts receivable turn figure is a helpful aid in making decisions about financing, credit, collections, and cash needs.

MANAGEMENT DECISION-MAKING AREA: Expense and Cost Control

Tool -- Aid: Score-Card Credit Rating

Description: The score-card credit rating is a procedure of assigning "weighted" values to the variables that affect the probability of collection of accounts receivables. The time sequence of the collection series is based upon the score given to a particular account. Some of the factors that may be "weighted" in the determination of a score are: debt load, employment tenure, income, credit references, residence, age, and living style.

APPENDIX E

JURY QUESTIONNAIRE

MANAGEMENT DECISION-MAKING AREA
Personnel

TOOL -- AID	(Rating Scale)*				
	Circle one				
<u>Employment Tests:</u> Aptitude	4	3	2	1	0
Skill	4	3	2	1	0
Personality	4	3	2	1	0

Criteria for the use of these aids: (Circle one for each criteria listed)

Awareness of a valid test instrument	Y	X	N
Test administration ability	Y	X	N
Ability to evaluate results	Y	X	N

Other criteria you believe are necessary for the use of this aid:

- a. _____
b. _____

Y = Criteria is necessary if tool is to be used as a decision-making aid.
X = Helpful in the use of the tool but not imperative.
N = Criteria is not necessary for using this aid.

*TOOL -- AID: Ranking Values

- 4 - Imperative, tool must be used as a planned decision-making aid for effective retail management.
- 3 - Not imperative, but should be used as a part of a plan to increase management's decision-making effectiveness.
- 2 - Helpful -- supplies useful decision-making data, but does not need to be a part of a planned decision-making sequence.
- 1 - Is of some value in guiding the routine operations of the firm.
- 0 - Not an appropriate tool for small retail firms.

Please indicate your appraisal of the degree of education and experience that would in your judgement be necessary for the use of this tool.

- Education: () Eighth Grade () High School () Seminars, Retail
() College - less than four years Management
() College Degree
Distributive education or a Business Program in high school or college would be:
() necessary () helpful () immaterial
- Experience: () Requires general management experience
() Requires specialized experience directly related to the use of the tool
() No experience is necessary

MANAGEMENT DECISION-MAKING AREA: Personnel Management

Tool -- Aid: Job Analysis

Criteria for the use of this aid:

- Understanding of the nature of the work
- Tools and equipment needed to perform the job
- Training needed for the position
- Physical and mental requirements
- Relationship of job analysis to morale
- Place of a job analysis in salary determination
- Use of a job analysis for promoting employees

MANAGEMENT DECISION-MAKING AREA: Personnel Management

Tool -- Aid: Performance Evaluation Checksheet

Criteria for the use of this aid:

- A knowledge of skills for the job
- Employee's personality and attitudes
- Promotion potential
- Motivation, initiative judgement or measurement
- Use of skills
- Employee's maturity
- Employee's responsiveness to direction
- Employee's ability to supervise

MANAGEMENT DECISION-MAKING AREA: Personnel Management

Tool -- Aid: Interview Checksheet -- Patterned Interview Form

Criteria for the use of this aid:

Experience in interviewing

Formal training in interviewing techniques

Ability to establish and maintain rapport

Availability of a place conducive to interviewing

Ability to communicate company information to the interviewee

Possess precise knowledge about the requirements of the position

Ability to maintain objectivity

Ability to arrive at a composite evaluation without being swayed by a single strong or weak factor

Office procedures for filing and retrieving interview forms

MANAGEMENT DECISION-MAKING AREA: Personnel Management

Tool -- Aid: Employment Application Form

Criteria for the use of this aid:

A knowledge of essential personnel selection factors

A filing procedure for current and inactive applications

The ability to analyze pertinent selection factors

Personnel to process applications

MANAGEMENT DECISION-MAKING AREA: Personnel Management

Tool -- Aid: Training Manual

Criteria necessary for the use of this aid:

Statement of store policies
Operating procedures outlined
Training guides for each job
Promotion requirements stated
Responsibilities and duties for each job
Organization chart
References on training

MANAGEMENT DECISION-MAKING AREA: Inventory Control Tools -- Direct

Tool -- Aid: Merchandise Inventory Turnover Figure

Criteria for the use of this aid:

Dollar figure of cost-of-goods sold
Dollar figure of sales at retail
Average inventory valuation at: Cost prices
Retail prices
Both cost and retail values
Net value of purchases
Beginning inventory figure
Ending inventory figure
Reductions from inventory -- other than sales

MANAGEMENT DECISION-MAKING AREA: Inventory Control Tools -- Direct

Tool -- Aid: Merchandise Age Analysis Report

Criteria for the use of this aid:

Coding method or record of date of purchase

Perpetual inventory record or periodic counting of merchandise on hand

Dollar value of items or departments being analyzed

A method of summarizing data by lines, departments, styles, or other classifications

A method of summarizing data by age groups and total dollar amounts

MANAGEMENT DECISION-MAKING AREA: Inventory Control Tools -- Direct

Tool -- Aid: Inventory Control System (perpetual control -- large ticket items)

Criteria for the use of this aid:

An initial accounting of merchandise by:

- Item description
- Item stock number
- Name of resource
- Cost of item
- Retail selling price
- Quantity on hand and on order

A daily, accurate procedure for recording:

- Orders of merchandise
- Receipts of merchandise
- Sales
- Other reductions from inventory

Staff member to be responsible for all inventory control records

A commitment by the owner-manager for the maintenance of the control system

MANAGEMENT DECISION-MAKING AREA: Inventory Control Tools -- Direct
 Tool -- Aid: Inventory Control System (periodic -- small items)

Criteria for the use of this aid:

A method of using tags, bins, or other means of locating the merchandise

A procedure to periodically check the quantity of items on hand

Use of a planned re-order system

Use of some type of "want-slip"

Invoice control to inform management of price changes, back orders, cancellations, and substitutions

Minimum and maximum figures on quantity of inventory to be carried

Responsibility assigned for the periodic inventory check and ordering

A method of verification of outstanding orders

MANAGEMENT DECISION-MAKING AREA: Inventory Control Tools -- Direct

Tool -- Aid: Purchase Returns Analysis

Criteria for the use of this aid:

Data of the amount and kind of merchandise returned to resources

Reason for return of merchandise

Disposition or action by the resources concerning the return of the merchandise

Dates - Return of merchandise
 Action by the resource
 Transaction finalized

MANAGEMENT DECISION-MAKING AREA: Indirect Merchandise Control

Tool -- Aid: Pricing Control Slip or Invoice

Criteria for the use of this aid:

Stock number verification of items priced

Cost code and retail prices marked

Initials of person doing the pricing

Price changes noted (cost) and called to attention of manager or owner

Price changes recorded by inventory control clerk

MANAGEMENT DECISION-MAKING AREA: Indirect Merchandise Control

Tool -- Aid: Receiving Report

Criteria for the use of this aid:

Name of resource, invoice number and date

Name of carrier, freight bill number and date

Item count verification

Signatures to determine responsibility

Notation of: Damages
Shortages
Overages
Rates and Weights

Log book or method of recording information

An individual with special training to accept the responsibility for receiving merchandise

MANAGEMENT DECISION-MAKING AREA: Indirect Merchandise Control

Tool -- Aid: Purchase Terms Analysis

Criteria for the use of this aid:

- Data concerning the discount terms of various resources
- Transportation charges and terms
- Time of title acquisition
- Discount dates and extra dating allowed
- Anticipation allowances
- Availability of memorandum, approval and consignment purchasing
- Document (invoice, acknowledgements, freight bill) handling procedure for data acquisition
- Knowledgeable staff member to analyze the necessary data

MANAGEMENT DECISION-MAKING AREA: Indirect Merchandise Control

Tool -- Aid: Resource Rating Guide

Criteria for the use of this aid:

- Information concerning the reputation and reliability of the resource -- Dun and Bradstreet's or Lyon's rating
- Comparative data with other resources concerning buying and shipping terms
- Judgement or data relative to territorial (sales) protection
- A subjective evaluation of the compatibility of the resource's total offer with proposed image
- A knowledge of pricing and promotional policies
- An evaluation or an analysis of selling and other supporting aids furnished by the resources
- Amount of advertising "pull" that the resource supplies
- Record of resource's performance in regard to service and warranties
- Appraisal of frequency of contact between supplier (their representative) and the retail firm

MANAGEMENT DECISION-MAKING AREA: Indirect Merchandise Control

Tool -- Aid: Markdown Control Sheet

Criteria for the use of this aid:

The development of a planned markdown procedure as to dollar and percentage amounts and timing

An analysis of the causes of markdowns

An accounting of the effect of the markdowns on inventory and profitability

Assigning the responsibility for implementing the markdown policy and analyzing the results of the policy

An analysis of the amount of unplanned markdowns by resources, styles, price lines, and other controllable factors

MANAGEMENT DECISION-MAKING AREA: Indirect Merchandise Control

Tool -- Aid: Markup Conversion With Markup Formulas

Criteria for the use of this aid:

Availability of data showing cross reference of markup on cost to markup on selling prices

A knowledge of percentage markups to be applied to various lines or items of merchandise

Ability to apply markup formulas for pricing calculations

Ability to interpret the use of the chart or formulas to employees that will use it

MANAGEMENT DECISION-MAKING AREA: Indirect Merchandise Control

Tool -- Aid: Freight Claims (Damage-Loss) Procedure

Criteria for the use of this aid:

Assembling of claims documents (invoices, freight bills, inspection reports, claim forms)

A knowledge of claim filing procedures

A knowledge of shipping terms (passage of title, liability for freight charges, weights, and rates for merchandise shipped)

A knowledge of the legal aspects of shipping and receiving merchandise

A log book or inventory system to permit tracing of items to invoices, freight bills, and other documents

A specifically trained individual to assume responsibility for the handling of claims

MANAGEMENT DECISION-MAKING AREA: Indirect Merchandise Control

Tool -- Aid: Merchandise Document Control Slip

Criteria for the use of this aid:

Development of a slip to record purchase order numbers and dates

Acknowledgement number and date

Invoice number and date

Freight bill or delivery bill number and date

Filing system to insure that all documents are accounted for and retrievable

A staff member with the responsibility for the completion of the slip

MANAGEMENT DECISION-MAKING AREA: Sales and Promotion Control

Tool -- Aid: Sales Training Plan

Criteria for the use of this aid:

A written plan of: Who is to be trained
 Responsibility for the training
 Methods to be used
 Evaluation procedures

A detailed analysis of: Training activities
 Renumeration plans
 Duration of the training programs

Promotion and renumeration sequence by steps, increments or dates

Realization by management of the value of an effective training program

Availability of staff, time, and know-how to implement the training plan

MANAGEMENT DECISION-MAKING AREA: Sales and Promotion Control

Tool -- Aid: Salesperson's Productivity Report

Criteria for the use of this aid:

A record of each salesman for: Gross sales
 Number of transactions completed
 Average dollar amount per sale
 Number and dollar amount of returns
 Percentage of gross markup maintained
 Percentage of cash and credit sales completed
 Number and dollar amount of "special sale" items
 Profit, or other classification of items sold

MANAGEMENT DECISION-MAKING AREA: Sales and Promotion Control

Tool -- Aid: Advertising Budget Appropriation

Criteria for the use of this aid:

A knowledge of the advertising expenditure as a per cent of sales

Availability of data for comparing the firm's expenditures with local, regional, national averages for like-type firms

A definite long-term objective

Specifically stated short-term promotional objectives

Some knowledge of competitor's advertising policies

Ability to estimate the costs of the "tasks" necessary to accomplish stated objectives

MANAGEMENT DECISION-MAKING AREA: Sales and Promotion Control

Tool -- Aid: Advertising Media Evaluation Analysis

Criteria for the use of this aid:

Media data for comparative cost analysis

Knowledge of: Coverage (territory-clientele)

Frequency of contact

Continuity maintained

Facilities and services available from media

Some form of research to estimate the amount of readership and recall gained by the various media

MANAGEMENT DECISION-MAKING AREA: Sales and Promotion Control

Tool -- Aid: Customer Service-Adjustment Report

Criteria for the use of this aid:

Recording of merchandise returned

Reason for return of merchandise

Signature of receiving clerk and disposition of the claim

Service calls completed

Nature of the problem

Recording of charges to be made

Signature of customer and adjustor

Some method of summarizing by departments, clerks, etc. the number and dollar amount of adjustments and service calls for a given period

MANAGEMENT DECISION-MAKING AREA: Sales and Promotion -- Evaluation

Tool -- Aid: Sales Forecast

Criteria for the use of this aid:

Availability of past sales records

A general knowledge of the use of traditional economic indicators

Securing and using sales data from resources

A knowledge of data available from banks, research centers, trade associations, private research institutions, and governmental agencies

An awareness of the effect of seasonal and special events on the sales forecasts

The development of a trend analysis

Availability of perpetual inventory records of sales by specific items

An analysis of local business and economic conditions

Awareness of the relationship of the sales forecast to all other areas of management planning

MANAGEMENT DECISION-MAKING AREA: Sales and Promotion -- Evaluation

Tool -- Aid: Sales Increment Formula (based on proximity and compatibility of competitors) (Gist, 1)

Criteria for the use of this aid:

Knowledge or estimation of the volume of business done by competitors

Purposive purchasing patterns for each store (i.e. per cent of customers planning to shop or visit each store)

Information about the amount of interchange in shopping among the competing stores

Ability to conduct or hire research concerning shopping patterns

The ability to use the shopping data in a formula to give a sales increment index number.

MANAGEMENT DECISION-MAKING AREA: Sales and Promotion -- Evaluation

Tool -- Aid: Trade Area Delineation (Gist, 1)

Criteria for the use of this aid:

Credit record analysis of addresses

Automobile license tag analysis

Knowledge of the population of neighboring trade centers

The use of a formula based on population and distance to indicate the probability of customer "pull" for each trading area

MANAGEMENT DECISION-MAKING AREA: Sales and Promotion -- Evaluation

Tool -- Aid: Retail (Store) Saturation Index (Gist, 1)

Criteria for the use of this aid:

Estimate of the number of prospective customers in the area
(county, city, other classification)

A knowledge of the average expenditure for your line of merchandise

An appraisal of competing retail facilities, in the trade area,
on some comparative measure (i.e. square feet of space)

MANAGEMENT DECISION-MAKING AREA: Sales and Promotion -- Evaluation

Tool -- Aid: Buying Power Index

Criteria for the use of this aid:

Data and index numbers for population, effective buying power,
and retail sales (available from Sales Management Magazine)

Recognition that BPI numbers may not be accurate for any given
locality or situation

MANAGEMENT DECISION-MAKING AREA: Sales and Promotion -- Evaluation

Tool -- Aid: Demographic Trade Area Analysis

Criteria for the use of this aid:

Availability of current data concerning:

Occupations and income levels

Life cycle data (ages of family members)

Annual household expenditures by product lines

Population and number of households by income groups

Conduct primary research to appraise the demographic makeup of the trading area

Ability to use local data (housing starts, utilities in use, etc.) to supplement average data for area

MANAGEMENT DECISION-MAKING AREA: Operating Indicators

Tool -- Aid: Retail Method of Inventory Costing

Criteria for the use of this aid:

Availability of data for goods-available-for-sale at cost and retail values

The knowledge to calculate a "cost compliment" of cost to retail values

Availability of data to determine the retail value of the ending inventory

The ability to determine a cost-of-goods sold figure by applying the "cost compliment" to the ending retail value of inventories

A knowledge of the percentage of markup on various classifications of merchandise

A system of accounting for inventories perpetually on a retail dollar basis

MANAGEMENT DECISION-MAKING AREA: Operating Indicators

Tool -- Aid: Stock-to-Sales Ratio

Criteria for the use of this aid:

An accounting of the inventory investment (preferably by departments, lines of merchandise, or other classifications)

Availability of sales figures by departments, lines of merchandise, or other means of classification

Dollar amount of sales returns and allowances

A record of the amount of purchases for the period

Data concerning purchases returns and allowances

An accumulation of historical data to allow computation of a reliable stock-to-sales ratio by months, quarters or other periods

MANAGEMENT DECISION-MAKING AREA: Operating Indicators

Tool -- Aid: Open-to-Buy Analysis

Criteria for the use of this aid:

An estimate of the expected sales for the period

An analysis of data to determine other reductions from inventory (losses, shrinkage, markdowns, returned merchandise, and withdrawals)

Some method of calculating the amount of desired ending inventory

Accounting for the amount of merchandise on outstanding orders, back orders, and in transit orders

An accurate accounting of the amount of inventory on hand at the beginning of the period

MANAGEMENT DECISION-MAKING AREA: Operating Indicators

Tool -- Aid: Gross Sales Analysis

Criteria for the use of this aid:

A record of gross sales by: Sales persons
 Departments
 Price lines
 Styles
 Time periods

A method of accumulating data for comparison by time periods, departments, salesmen, etc.

Availability of data for comparing gross sales figures with local and regional norms

MANAGEMENT DECISION-MAKING AREA: Operating Indicators

Tool -- Aid: Net Sales to Assets Ratio

Criteria for the use of this aid:

An accounting of net sales

Net sales by: Periods of time
 Departments
 Lines of merchandise

A record of asset investments (total firm)

Asset investment by: Periods of time
 Departments
 Lines of merchandise

Availability of data for a comparative analysis with similar firms and similar time periods

MANAGEMENT DECISION-MAKING AREA: Operating Indicators

Tool -- Aid: Gross Margin per Square Feet of Floor Space (Departmentalized)

Criteria for the use of this aid:

Sales data by departments, lines of goods, other classifications

Percentage of gross margin by departments or other classifications

Gross margin in dollars by departments or other classifications

Square feet of floor space utilized by various departments, merchandise lines, or other merchandise classifications

A knowledge of factors to be considered in space allocation other than sales and cost-of-goods sold

MANAGEMENT DECISION-MAKING AREA: Financial Data

Tool -- Aid: Cash Report -- Daily

Criteria for the use of this aid:

A systematic procedure for recording: Beginning-of-day cash balances
Cash sales
Paid-outs
Cash withdrawals
End-of-day cash balances
Signatures of responsible individuals

A procedure for internal control and auditing of all cash receipts and disbursements

MANAGEMENT DECISION-MAKING AREA: Financial Data

Tool -- Aid: Balance Sheet

Criteria for the use of this aid:

An accurate record of: Assets
Liabilities

Complete records of: Capital expenditures
Withdrawals

Data for comparative balance sheet analysis

An understanding of the concept of net worth

Some experience in statement interpretation

MANAGEMENT DECISION-MAKING AREA: Financial Data

Tool -- Aid: Break-Even Analysis

Criteria for the use of this aid:

A knowledge of the nature of variable costs and fixed costs

A bookkeeping system to provide a breakdown of total fixed costs

The ability to calculate variable costs as a percentage of sales

Data concerning volume or activity levels and selling values

MANAGEMENT DECISION-MAKING AREA: Financial Data

Tool -- Aid: Profit and Loss Statement

Criteria for the use of this aid:

An accurate record of: Sales and sales returns and allowances
 Purchases and purchases returns and allowances
 Inventory levels
 Selling and general expenses

Income statement data should be available for the preparation of interim statements -- at least on a monthly basis

A staff member or outside accountant to assemble, summarize, and report profit and loss data

MANAGEMENT DECISION-MAKING AREA: Financial Data

Tool -- Aid: Ratio and Analysis

- (a) Working Capital
- (b) Current Ratio
- (c) Acid-Test Ratio
- (d) Ratio of Owner's Equity to Liabilities
- (e) Rate of Return on Investment
(total assets)
- (f) Ratio of Sales to Working Capital

Criteria for the use of these aids:

An accounting system to provide the necessary breakdown of data for computing each of the ratios

Knowledge and (or) experience in interpreting the significance of the various rates and ratios

Availability of data to permit comparisons with norms for like-type firms

MANAGEMENT DECISION-MAKING AREA: Financial Data

Tool -- Aid: Contribution Margin Income Statement (departmentalized)

Criteria for the use of this aid:

A record of gross and net sales by departments or other classifications

A record of inventories and purchases for the computation of costs-of-goods sold on a departmental basis

An accounting procedure for tracing direct costs to various departments

An understanding of the concept of "contribution" as it relates to the coverage of fixed costs and subsequently to profits

An understanding of the concepts of responsibility and accountability in evaluating departmental efficiency

MANAGEMENT DECISION-MAKING AREA: Expense and Cost Control

Tool -- Aid: Expense Summary Sheet

Criteria for the use of this aid:

A bookkeeping system to permit the classification of expenses by functions

Summarization of expenses by natural accounts

A method of accounting for expenses by departments or other classifications

The ability to differentiate between expenses and capital expenditures (investments)

Recognition of expenses (non-cash) that should be charged against current revenues (pro rata share of depreciation)

MANAGEMENT DECISION-MAKING AREA: Expense and Cost Control

Tool -- Aid: Comparative Expense Analysis

Criteria for the use of this aid:

A summary of expenses for the firm by departments

Availability of data on national, regional, and local averages for like firms

A vertical analysis -- all expense categories computed as a percentage of sales

A horizontal analysis -- all expense categories compared with similar data for other time periods

An appreciation of the value of comparative analysis and noting developing trends

MANAGEMENT DECISION-MAKING AREA: Expense and Cost Control

Tool -- Aid: Differential Analysis Report (Equipment Replacement)

Criteria for the use of this aid:

Determination of the book value of old equipment

Cost estimate of new equipment

Calculation of variable costs of: Keeping old machinery
New equipment

Estimation of the life of old and new equipment

An understanding of the nature of "sunk" (non-retrievable fixed) costs

MANAGEMENT DECISION-MAKING AREA: Expense and Cost Control

Tool -- Aid: Ratio of Fixed Assets to Long-Term Liabilities

Criteria for the use of this aid:

An accurate appraisal of the value of all long-term or fixed assets

A record of all outstanding long-term debts

An understanding of the ratio in relation to long-term borrowing ability

MANAGEMENT DECISION-MAKING AREA: Expense and Cost Control

Tool -- Aid: Ratio of Accounts Receivable to: Sales
Inventory
Assets

Criteria for the use of this aid:

A bookkeeping system to provide data concerning:

Accounts receivable outstanding
Sales to date
Inventory investment
Investment in assets

Availability of regional and local data against which to evaluate the firm's ratios

Ability to interpret the ratios for decision-making in areas of finance, credit, and investments

MANAGEMENT DECISION-MAKING AREA: Expense and Cost Control

Tool -- Aid: Aging Chart for Accounts Receivables

Criteria for the use of this aid:

A method of determining the dollar amount of the outstanding accounts receivables by the amount of time they are past due

Noting the development of any significant trends

Understanding the relationship of accounts receivable aging to policies of granting credit and collection procedures

Combining the aging chart with a collectibility percentage to determine the value of accounts receivable.

MANAGEMENT DECISION-MAKING AREA: Expense and Cost Control

Tool -- Aid: Accounts Receivable Turnover

Criteria for the use of this aid:

An accounting of the amount of net sales on account for the period

Availability of data to determine the average dollar amount of accounts receivables outstanding

Knowledge of the terms (time periods) used when granting credit

The ability to interpret the turn figure in relation to the credit terms being granted

An appreciation of the significance of the turn figure in relation to financing, credit, cash needs, and other operating functions

APPENDIX F
STATISTICAL TESTS

The One-Sample Runs Test: Statistical Model

The One-Sample Runs Test is a technique for testing a hypothesis that a sample is random. It is based on an order or sequence in which some variable, which is common to all sample members, was originally obtained. As the name implies, it is appropriate for use with single samples and requires only ordinal level data.

The formula for large samples (n_1 or $n_2 \geq 20$) is presented by Siegel (58, pp. 56-57).

$$Z = \frac{r - \left(\frac{2n_1 n_2}{n_1 + n_2} + 1 \right)}{\sqrt{\frac{2n_1 n_2 (2n_1 n_2 - n_1 - n_2)}{(n_1 + n_2)^2 (n_1 + n_2 - 1)}}$$

A good approximation of r with large samples is the normal distribution, and, therefore, Z is the appropriate statistic.

where: r = number of runs

n_1 = number of items in the smaller run

n_2 = number of items in the larger run

The One-Sample Runs Test: Data

The calculation of randomness for the forty firms in this study was based on the distribution array of the number of employees in each firm. The number of employees were dichotomized as those above and below the mean number of employees for all the firms.

The distribution sequence of the number of employees per firm in the order in which they were obtained was as follows:

Ordered Sequence of the Number of Employees per Firm

6-7-5 4-3 7 3-2-3-2-4-2-2
6 2 10 3 5-10-7-9 3-4-3
5-6 2-2-2-2 8 2-2-2-2-2-2
5-6-10

The mean number of employees was 4.3. The dichotomization of the array, which is also the number of runs (r) was fifteen as indicated by the groupings marked within the distribution.

The One-Sample Runs Test: Computation

1.

$$Z = \frac{r - \left(\frac{2n_1 n_2}{n_1 + n_2} + 1 \right)}{\sqrt{\frac{2n_1 n_2 (2n_1 n_2 - n_1 - n_2)}{(n_1 + n_2)^2 (n_1 + n_2 - 1)}}$$

2.

$$Z = \frac{15 - \left(\frac{2(24)(16)}{24+16} + 1 \right)}{\sqrt{\frac{2(24)(16)[2(24)(16) - 24 - 16]}{(24+16)^2 (24+16-1)}}$$

3. $Z = .0007$

Z values may be interpreted by reference to Table A in Siegel's book Non-Parametric Statistics (58).

The null hypothesis was that the number of employees reported by each firm will show a random distribution array when dichotomized by values greater and less than the mean value for all firms.

$Z = .0007$ is probability (p) = .9442 (two-tailed, non-directional test). Inasmuch as the probability associated with the observed occurrence ($p = .9442$) was greater than the level of significance (.01) -- the null hypothesis was not rejected. The sample was a random one when measured by the number of employees for each firm.

The Mann-Whitney U Test

The Mann-Whitney U Test as presented by Siegel (58, pp. 116-127) is appropriate for tests of significance differences between two independent samples when ordinal level data is used. It is one of the most powerful nonparametric tests and a useful alternative for the parametric t test.

The U model appropriate for large samples ($N_2 > 20$) is:

$$Z = \frac{U - \frac{n_1 n_2}{2}}{\sqrt{\frac{(n_1)(n_2)(n_1 + n_2 + 1)}{12}}}$$

When the number of tied ranks in the data are large or the length of the tied values (the size of the t's) is large, a correction factor should be employed. The appropriate U model with corrections for ties is:

$$Z = \frac{U - \frac{n_1 n_2}{2}}{\sqrt{\left(\frac{n_1 n_2}{N(N-1)}\right) \left(\frac{N^3 - N}{12} - \Sigma T\right)}}$$

n_1 = number of cases, smaller group

n_2 = number of cases, larger group

$N = n_1 + n_2$

$T = \frac{t^3 - t}{12}$

t = number of observations tied for a given rank

$$U = n_1 n_2 + \frac{n_1(n_1+1)}{2} - R_1$$

R_1 = sum of ranks assigned to the group whose sample is n_1

Additionally, one should check to make sure that U rather than U' is being used, thus, $U = n_1 n_2 - U'$.

The Kolmogorov-Smirnov One-Sample Test

The Kolmogorov-Smirnov One-Sample Test is a test of goodness of fit. That is, it is concerned with the degree of agreement between the distribution of a set of sample values (observed scores) and some specified theoretical distribution.

The null hypothesis (H_0) to be tested is that there is no significant difference in the expected number of choices for each of the four ranks (0-1-2-3), and any observed differences are merely chance variations to be expected in a random sample.

The alternative hypothesis (H_1) is that the frequency distribution array of $f_1 f_2 \dots$ are not equal. The formula as presented by Siegel (58, pp. 47-52) is $D = \text{maximum}/F_0(X) - S_n(X)/$.

where: $F_0(X)$ = a completely specified cumulative frequency distribution function, the theoretical cumulative distribution under H_0 .

$S_n(X)$ = the observed cumulative frequency distribution of a random sample of N observations $S_n(X) = k/N$ where k = the number of observations equal or less than x

X = any possible score or rank

The Kolmogorov-Smirnov One-Sample Test treats individual observations separately and thus, unlike the χ^2 test for one sample, need not lose information through the combining of categories. Moreover, for very small samples the χ^2 test is not applicable at all, but the Kolmogorov-Smirnov test is. These facts suggest that the Kolmogorov-Smirnov test may in all cases be more powerful than its alternative, the χ^2 test.

The Kendall Coefficient of Concordance: W

The Kendall Coefficient of Concordance: W is a technique for considering the relationship or correlation among several rankings of N objects or individuals. In essence, the Coefficient of Concordance is an index of the divergence of actual agreement shown in a set of data from the maximum possible (perfect) agreement. Siegel (58, pp. 229-238) presents the computation of W as

$$W = \frac{s}{1/12k^2(N^3-N)}$$

where: $s = \sum (R_j - \sum \frac{R_i}{N})^2$

R_j = the sum of the rankings for each variable by all of the sample members

k = the number of sample members or judges

N = the number of variables to be ranked

For large samples it is necessary to convert the W to χ^2 for interpretation. The conversion formula is: $\chi^2 = k(N-1)W$.

A high or significant W does not mean that the orderings observed are correct, but simply that agreement exists among the judges or sample members.

The null hypothesis was that the k rankings are unrelated. If χ^2 equals or exceeds the tabled value (Table C Siegel, 58) for a particular level of significance ($\alpha = .05$) and a particular value of $df = N-1$, the null hypothesis may be rejected.

The Spearman Rank Correlation Coefficient: r_s

The Spearman Rank Correlation Coefficient is a measure of association between two variables in a sample. It permits inferences about the existence of association within a population.

The Spearman Rank Correlation Coefficient is a non-parametric statistic requiring only that both variables being studied be measured at the ordinal level.

The model employed in this study is presented by Siegel (58, pp. 210-213):

$$r_s = \frac{\Sigma x^2 + \Sigma y^2 - \Sigma d^2}{2 \sqrt{\Sigma x^2 \Sigma y^2}}$$

Where:

$$\Sigma x^2 = \frac{N^3 - N}{12} - \Sigma Tx,$$

$$\Sigma y^2 = \frac{N^3 - N}{12} - \Sigma Ty, \text{ and}$$

N = Number of individuals in the sample

T = Number of tied score ranks

d = The deviation (difference) between the x and y variable (rank) scores for any given sample member.

When N is greater than ten, r_s needs to be converted to Student's t for interpretation.

$$t = r_s \sqrt{\frac{N-2}{1-r_s^2}}$$

The Spearman Rank Correlation Coefficient is about 91 per cent as powerful as the most powerful parametric statistic of correlation (the Pearson r). It is, therefore, a useful device for appraising degrees of association when the assumptions underlying the use of parametric statistics cannot be met.

APPENDIX G

GEOGRAPHIC AREA OF SAMPLE

GEOGRAPHICAL AREA OF THE STUDY

Counties in southwestern Oklahoma
included in the sample area

Cities in southwestern Oklahoma
from which sample members were
selected

Canadian*	Hinton
Custer*	Anadarko
Roger Mills*	Grandfield
Beckham	Carnegie
Harmon	Weatherford
Greer	Clinton
Jackson	Cordell
Tillman	Elk City
Kiowa	Sayre
Washita	Erick
Caddo	Hollis
Comanche	Mangum
Cotton	Hobart
Jefferson*	Granite
Stephens*	Frederick
Grady*	Snyder
	Roosevelt

* Area did not include the entire county

APPENDIX H

LIST OF JURY MEMBERS

JURY MEMBERS

Dr. Fred M. Jones
Professor of Marketing
Department of Business Administration
College of Commerce and Business Administration
University of Illinois
Urbana, Illinois 61801

Mr. T. A. Killian
Merchandise Manager
T. G. and Y. Stores Company
P. O. Box 25967
3815 North Santa Fe Street
Oklahoma City, Oklahoma 73125

Mr. Richard L. Long
Senior Business Analyst
Small Business Administration
501 Mercantile Building
30 North Hudson Street
Oklahoma City, Oklahoma 73102

Mr. Bob Thomas, Supervisor
Sales Development Department
Moore Business Forms, Inc.
Denton, Texas 76201

Mr. Wayne H. Wornom
Sales Representative
The Neil Greenfield Company
4700 N. W. 46th Court
Oklahoma City, Oklahoma 73125

Two members of the jury were managers of large retail firms located in southwestern Oklahoma. Both men possessed extensive experience in small retail establishments. The selection of these two jury members was made by distributive education teacher-coordinators who were familiar with their backgrounds and merchandising expertise. They wished to remain anonymous.

VITA^s

Roger W. Egerton

Candidate for the Degree of

Doctor of Education

Thesis: THE USE OF DECISION-MAKING TOOLS BY THE MANAGERS OF SMALL RETAIL FIRMS -- A FEASIBILITY STUDY

Major Field: Business Education

Biographical:

Personal Data: Born at Woodstock, Illinois, August 13, 1931, the son of William and Inez Egerton.

Education: Attended grade schools in both Illinois and Kansas; graduated from Norcatour Rural High School, 1950; received the Bachelor of Science degree from Bethany Nazarene College, Bethany, Oklahoma, with majors in Business Administration and Education in May, 1957; received the Masters of Business Education degree from the University of Oklahoma in May, 1963; attended Indiana University as a Ford Foundation Fellow, summer, 1965; completed requirements for the Doctor of Education in May, 1971, at Oklahoma State University.

Professional Experience: Served as assistant manager, Western Auto Store, Bethany, Oklahoma, 1954-1957; business teacher, Knowles, Oklahoma, 1957-1960; assistant manager of Cherry's Furniture Store, Bethany, Oklahoma, 1960-1963; instructor of Business, Southwestern State College, 1963; Consultant for Oklahoma State Technical Services, 1966-1969; served as a teaching assistant, Oklahoma State University, 1968-1969; presently assistant professor, Department of Business, Southwestern State College.

Professional Organizations: Oklahoma Education Association, Mountain-Plains Business Education Association, National Business Education Association, Delta Pi Epsilon, Phi Beta Lambda (sponsor), Phi Delta Lambda.