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**Planning and organizational effectiveness in the paper and allied products industry: An exploratory study of small French and United States companies**

**Cheosakul, Adith, Ph.D.**

**City University of New York, 1992**

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PLANNING AND ORGANIZATIONAL EFFECTIVENESS IN THE PAPER  
AND ALLIED PRODUCTS INDUSTRY: AN EXPLORATORY STUDY OF  
SMALL FRENCH AND UNITED STATES COMPANIES

by

ADITH CHEOSAKUL

A dissertation submitted to the Graduate Faculty in  
Business in partial fulfillment of the requirements for  
the degree of Doctor of Philosophy, The City University  
of New York

1992

c 1992

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This manuscript has been read and accepted for the Graduate Faculty in Business in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

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## Abstract

PLANNING AND ORGANIZATIONAL EFFECTIVENESS IN THE PAPER  
AND ALLIED PRODUCTS INDUSTRY: AN EXPLORATORY STUDY OF  
SMALL FRENCH AND UNITED STATES COMPANIES

by

Adith Cheosakul

Adviser: Professor Michael N. Chanin

Empirical research in the area of planning in small business is inadequate. Contradictory findings in the empirical literature with regard to the presence or absence of planning and its impact on small businesses are apparent. This study attempts to resolve some of these contradictory findings.

The purposes of this dissertation were twofold: (1) to examine actual planning practices among small firms in the paper and allied products industry in France and the United States, and (2) to determine the relationship, if any, between the level of planning practices sophistication and organizational effectiveness among these firms in France and the United States. Return on sales and sales growth rate served as surrogate measures of organizational effectiveness.

Six hundred fifty-two companies in the United States were retrieved from Standard & Poor's Corporation Database on CD-ROM, using SIC 26 for the paper and allied products industry. One hundred ninety-two companies in France were compiled from various directories of French companies. Data were obtained by mailed questionnaires. Response rates were 16.10% and 27.08% respectively. Content validity and reliability using measures of internal consistency were verified.

The SAS program was used to perform regression analysis, t-test, Spearman rank correlation, Wilcoxon's rank-sum test, and ANOVA in order to test the hypotheses relating to the study. The analysis of the statistical results provided the following findings: (1) there was no difference in intensity of planning practices between France and the United States, and (2) those firms which engaged in high levels of planning practices sophistication outperformed those firms using low levels of planning practices sophistication.

Both practical and theoretical implications emanated from these findings. From a practical aspect, the relationship found between planning and organizational effectiveness would suggest that organizational effectiveness can be improved by extensively engaging in planning. From a theoretical aspect, the results of this

study provide an incremental contribution to contingency theory, small firm research, and comparative management.

Limitations of the study are as follows: (1) the results from the samples can be only inferred to small French and United States companies in the paper and allied products industry, and (2) this study did not consider different stages of small firm development.

To my parents, Dr. Pradisth  
and Mrs. Ubolsri Cheosakul, with love and respect;  
to my best friends, Marc Matoussowsky and  
Michael Evagelinos, for their encouragement and love.

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CHAPTER 1  
INTRODUCTION

Small business is a dominant component of the economy. Small business' contribution to the U.S. income and wealth is clear: small firms are significant in terms of their number and in their contribution to GNP, employment, and innovation (Clapman, 1985; Cross, 1983). Based on the data released by the U.S. Small Business Administration, Acs and Audretsch (1989) found that about two-thirds of all new jobs in the U.S. between 1976 and 1982 were generated by firms with fewer than 500 employees, and small firms generated a larger share of the new jobs in manufacturing, over 95 percent, than they did in the service sector, where large firms accounted for just over 40 percent of the new employment. Also, similar to the U.S. where small business accounts for 47.8% of the private sector workforce, employment in European small enterprises ranges from a low of 40% in France to a high of 98% in Denmark (falling between these extremes are West Germany (43%), the U.K. (44%), and the Netherlands (56%)) (Berger, 1984). In Japan, small and medium enterprises account for 99.4% of all private business establishments (Soon, 1984). In 1983, the EEC announced the Year of the Small and Medium-sized Enterprises (YSME) (Berger, 1984). However, regardless of how rapidly an industry grows,

small firms experience higher birth and death rates than large firms (The U.S. Small Business Administration, 1986). There are various reasons for the failure of a small business: financial insolvency, acquisition by a merger with another firm, the owner's retirement, death, or movement into another line of work. Venturing into small business is risky (Bracker & Pearson, 1986). The cost of small business failures involves more than financial losses (Robinson, Logan & Salem, 1986). This study explores the complex relationship between planning and organizational effectiveness in small and allied products in France and the United States.

#### RESEARCH PROBLEM

The literature review discloses that inconsistencies are apparent among the meanings and interpretations of the terms and expressions used to denote different types of planning. The generic term "planning" is used in this study to encompass the terminologies, namely, strategic management, strategic planning, strategy and policy formulation, long-range planning, business policy, business plan, strategic business planning, functional planning, operational planning, and short-term planning. However, the elements of the questionnaire used in this study lend themselves to the specific concept of strategic management. In particular, the meaning of strategic management defined by Thompson and Strickland (1987) as

described in Chapters 2 and 4 is adopted. Moreover, incongruous meanings of small business exist in the literature review. The definition used by the U.S. Small Business Administration which coincides with the one utilized in France is embraced. Furthermore, numerous studies that examined successful and unsuccessful small businesses have found that a lack of planning or inadequacies in a firm's planning process may contribute to a firm's failure, while planning processes that are well-developed, soundly implemented, and properly controlled contribute to a firm's success (Bracker & Pearson, 1986). However, contradictory findings among empirical literature with regard to the presence or absence of planning and its impact on small business are apparent due to the following causes: inconsistencies of definitions of small business and planning, small sample size, narrow industry coverage, specific geographic regions, short operating time-frame of small businesses which can lead to inadequately developed strategic planning systems, non-availability of key data, non-homogeneity of data, cross-sectional samples, different stages of small firm development, different environments, and the validity and reliability of research methodology. As a result, this study attempts to overcome some of the aforementioned causes.

### PURPOSE

The purposes of this study are to contrast the theory of strategic planning and actual practices in small business in France and the United States, to determine the relationship, if any, between the level of planning practices sophistication and organizational effectiveness among small businesses in France and the United States, and to determine differences and/or common elements in actual planning practices among small businesses in France and the United States which, in turn, will help small business owners in both countries learn more about planning and its impact on their businesses.

### SCOPE

The scope of this study was limited to small businesses in paper and allied products industry in both France and the United States. This restriction accommodated a control for extraneous environmental factors. In addition, variables which were identified as important to the planning-organizational effectiveness relationship include path to ownership, environmental stability, sales volume, number of employees, and number of years in business.

### RESEARCH CONTRIBUTION

The results of this study will provide an insight into actual strategic planning practices of small business in France and the United States. According to Robinson

and Pearce (1984), the state of knowledge pertinent to strategic management of small and growing businesses is woefully inadequate because most literature in this area is prescriptive, discontinuous, and suffering from a little big business syndrome. Therefore, this rigorous, theory based, empirical study could contribute to the state of knowledge related to the strategic management of small business. In addition, the differences and/or common elements in actual planning practices among small businesses in France and the United States found in this study will help small business owners in both countries learn more about planning and its impact on their business. However, the results of the study will benefit U.S. small business owners with global perspective a great deal. In particular, they will learn about their counterparts in France, and they will be better prepared to deal with the unification of European countries in 1992.

The planning-organizational effectiveness relationship could be ascertained by the results of this study. The resulting relationship will reinforce the findings of numerous studies about the importance of planning. Moreover, the results may contribute to the survival and success of small businesses.

An incremental contribution from this study can be added to the contingency theory which is a midrange body

of theory which stands between the view that there are universal principles of organization and management and the view that each organization is unique and that each situation must be analyzed separately (Steiner, 1979). According to Steiner (1979), there are as yet no integrated theories of the strategic management process; however, there are numerous contingency theories that cover different parts of the territory.

Finally, the results of this study will give an incremental contribution to comparative management. Comparative management refers to the identification of both common and different elements of management in different cultural environments so as to formulate the extent to which managerial principles are universally applicable. Empirical studies in this area dealing with France and the United States are sparse. Hall and Hall (1990) described in detail cultural differences between France and the United States. Amado et al. (1991) contrasted France and the United States in term of organizational development. Barsoux and Lawrence (1991) scrutinized management in France.

## CHAPTER 2

### LITERATURE REVIEW

#### DEFINITIONS OF SMALL BUSINESS

Defining small business is not only a prerequisite for conducting small business research, but is also a requirement for establishing appropriate public policy. Many different standards are used to define small business; however, there is no universal definition. To facilitate any research on small business in the international scope, a summary of different definitions of small business adopted by selected countries is presented in Appendix 1. The term "small and medium-sized" business is used to describe "small" business in some countries such as France and Japan.

Definitions of small business vary widely in the United States. It became evident from several regional meetings sponsored by the White House Conference on Small Business held in January, 1980 that the term "small business" is complex and difficult to define (Nappi & Vora, 1980). Different definitions of small business in the United States are shown in Appendix 2. Perhaps the most widely used definition, however, is that of the Small Business Administration (SBA), a federal agency created by the U.S. Congress in 1953 to help small business thrive, which is based on Section 3 of the Small Business Act of

1953 (as amended) (Peterson, Albaum & Kozmetsky, 1986; Siropolis, 1986):

A small business concern shall be deemed to be one which is independently owned and operated and which is not dominant in its field of operation.

To these essentially qualitative criteria of independent ownership and management (operation) and small market share are added the quantitative criteria of employment and sales volume (Peterson, Albaum & Kozmetsky, 1986). The latter criteria is the SBA body of definitions called "size standards" which can be found in Title 13 of the Code of Federal Regulations (CFR) Part 121 (AT&T, 1985). Size standards are established primarily to define eligibility for SBA programs and Federal procurement purposes (Small Business Size Regulations, 1992). Size standards are not constant; rather, they vary by industry (i.e., 4-digit SIC code) with particular attention to the structure of the designated industry, Administration policy, and the needs of the various Federal programs to which they apply (Peterson, Albaum & Kozmetsky, 1986; Small Business Size Regulations, 1992). The number of employees or annual receipts indicates the maximum allowed of a concern (including its affiliates) to be considered small (Small Business Size Regulations, 1992). Final rule size standards by SIC industry are also shown in Appendix 2.

On the contrary, the SBA, in its 1986 Report on

Small Business and Competition in accordance with the provisions of the Small Business Economic Policy Act of 1980 submitted to the President, defines small enterprises as firms with fewer than 100 employees or firms with fewer than 500 employees, depending on the average or typical firm in the industry being studied (The U.S. Small Business Administration, 1986). In all cases, small firms should be defined so that there is a sufficient number of large firms with which to compare (The U.S. Small Business Administration, 1986). For example, in manufacturing, defining a small firm as a firm with 500 or fewer employees covers only 28.9 percent of the jobs in the industry, but defining it the same way in services covers 52.4 percent of all employment in 1982 in Small Business Data Base, data developed and maintained by the SBA (The U.S. Small Business Administration, 1986). Therefore, 500 employees per firm may be a more useful small business definition in manufacturing, and 100 employees per firm may be more useful in services, particularly if an impact on very small firms is being studied (The U.S. Small Business Administration, 1986).

However, the definitions can be relaxed in some cases. For example, in 1966 the SBA classified American Motors which ranked as the nation's sixty-third largest manufacturer, with 32,000 employees and sales revenues of \$991 million as small to enable the company to bid on

certain government contracts (Siropolis, 1986).

In order to reduce the complexity of the definitions, the SBA is considering a proposal to use the total number of a firm's employees, with limits differing from one industry to another (Scarborough & Zimmerer, 1984). However, the agency is postponing a decision until it gauges public response to the proposal (Scarborough & Zimmerer, 1984).

Nappi and Vora (1980) studied what definition of a small business each state agency used, its rationale for using the definition, and whether the definition was written into its state law. Appendix 3 summarizes the result of this study, revealing that only twenty-nine of the fifty-two governmental units in the survey reported using a definition of a small business, while the remainder did not use such a definition. Merely fourteen (near half) of the twenty-nine governmental units in the survey using a definition of a small business indicated using the SBA guidelines, while the remaining fifteen had developed their own definitions (Nappi & Vora, 1980). Only five out of the fourteen states using the SBA definition into law, while twelve of the fifteen states which had developed their own definitions had incorporated these into the statutes (Nappi & Vora, 1980). In addition, thirteen of the twenty-nine governments using definitions had developed a rationale for their choices

(Nappi & Vora, 1980). Of these, ten had incorporated their definitions into laws (Nappi & Vora, 1980). In spite of a great deal of variations in the quantitative criteria and measures used, there is a qualitative consensus among the respondents that a small business should be independently owned and operated for profit and should not dominate in its field and industry (Nappi & Vora, 1980). Moreover, discrepancies in the definitions of small business exist among government agencies within the same state, i.e., the Minnesota Department of Economic Security vs. the State House of Representatives' Task Force on Small Business and Georgia's Department of Industry and Trade vs. the state's Small Business Assistance Act, as shown in Appendix 2.

Peterson et al. (1986) designed a nationwide survey to document the general public's definition of a small business. The results of this survey suggest that the general public's definition of a small business corresponds to a degree with the SBA definition, at least with respect to qualitative criteria (Peterson, Albaum & Kozmetsky, 1986). The public's definition of small business and that of the SBA differ, however, quantitatively (Peterson, Albaum & Kozmetsky, 1986). Appendix 4 and Appendix 5 summarize responses to the maximum number of employees and the maximum sales volume questions respectively. Less than 3 percent of the

individuals surveyed stated that the maximum number of employees a business could have and still be termed "small" was more than 100; the SBA's employment size standards vary, depending on the industry, from 500 to 1,500 employees (Peterson, Albaum & Kozmetsky, 1986). Similarly, only 27 percent of the survey participants stated that the maximum sales a firm could have and still be termed "small" was greater than \$500,000; the SBA's sales volume standard ranges as high as \$17 million (Peterson, Albaum & Kozmetsky, 1986). In general, the public appears to view small business in terms of so-called "mom and pop" businesses, particularly retail stores (Peterson, Albaum & Kozmetsky, 1986). It may be that the public's perception of small business is in large part derived from personal experience with very small retailers (Peterson, Albaum & Kozmetsky, 1986).

It is obvious that there is a lack of consensus as to the definition of a small business. There is even a hodgepodge of definitions of small business among federal agencies. Since the definitions for size standards are complex and sometimes change among agencies, it is essential to seek expert advice in order to determine appropriate definitions for particular cases.

Moreover, misleading approaches to defining small business are frequently encountered in empirical management literature (Robinson & Pearce, 1984). For

example, Lindsay and Rue (1980), addressing the impact of environmental uncertainty on long range planning processes, drew several conclusions for both "large" and "small" businesses based on their partitioning the top half of the Fortune 500 as the large firms and the bottom half as the small firms.

Consequently, it is essential to accurately define small business at the outset of any research on small business. Moreover, an equitable treatment of and assistance to small business is very difficult, if not impossible, without uniformity in definition (Nappi & Vora, 1980). An agreed national definition of small business is essential if legislations were to treat it in a consistent manner, so as to enable a business to realize its status, irrespective of the contextual meaning of each individual legislation (Hertz, 1982). An agreed international definition of small business is desirable for the promotion of economic co-operation and communication, that without such an agreed definition, it is unattainable, and if attempted is inconsequential (Hertz, 1982). Otherwise, it will be difficult to make empirically based comparisons among different countries because of the lack of common data base on small business. In this respect, the SBA proposal to use the total number of a firm's employees as a yardstick for the definition of small business must be adopted. When the

total number of a firm's employees is used to define the firm size, comparisons of small business research at a national as well as international level can be facilitated. On the other hand, monetary measures such as fixed asset, capital, annual turn over, and so on are difficult to apply consistently among different countries. In particular, the fluctuations of exchange rates and the inflation rates have to be considered. In addition, Miller (1982) and Peterson et al. (1986) argued that a definition incorporating only the number of employees would include as many high productivity firms as practical while keeping the number of low productivity firms at a minimum. Encouraging productivity is a national priority (Miller, 1982). Figure 1 shows Miller's diagram used in supporting his argument. A very comprehensive discussion of small business definitions can be found in a monograph by Hertz (1982).

Related to small business are the terms "entrepreneur" and "entrepreneurship." An entrepreneur is a person who organizes, operates, and assumes the risk for business ventures while entrepreneurship is the capacity for innovation, investment, and expansion in new markets, products, and techniques (Siropolis, 1986). According to Cooper and Dunkelberg (1986), there are differences in entrepreneurial characteristics according to how ownership is achieved:

Starting a business requires the innovative task of conceiving and shaping a business, and of taking the initiative to create something where nothing has existed before. It also involves personal risk-taking and would be regarded, by almost any definition, as being an entrepreneurial act. Purchasing a business involves risk-taking and requires initiative in finding and negotiating the purchase of a suitable business. However, depending upon the extent to which the purchaser plans changes or desires growth, there may be little need for creativity, or the visualization of an opportunity, or the bringing together of resources. Becoming a business owner through inheritance or through being promoted or brought in by other owners involves less personal risk-taking (although commitment of one's time, reputation, and personal wealth may be involved). For some who inherit or who are promoted to become owner-managers it may not be necessary to change organizations or to make major additional commitments. Less is required in the innovative task of bringing resources together to create an enterprise, although there may be an opportunity for shaping and creatively expanding an existing firm.

These differences seem to exist in a predictable pattern, relating to what might be thought of as the degree of entrepreneurship associated with different paths to ownership. Their survey of one thousand seven hundred fifty-six independent business owners reveals the ordering from most to least entrepreneurial intensity as follows: 1) starters; 2) purchasers; 3) inheritors; and 4) those promoted or brought in to become owner-managers. Watts (1987) extended the least entrepreneurial end of the Cooper and Dunkelberg (1986)'s continuum to include those promoted or brought in as a professional non-owner manager. Watts (1987)' study on small banks found a significant and positive relationship between degree of

entrepreneurship and planning practices sophistication, net interest margin, and return on assets.

Various definitions of entrepreneurship employed by a number of theoretical economists are shown in Appendix 6. Three recurring themes emerge from their definitions, namely that "entrepreneurship" involves: 1) uncertainty and risk, 2) complementary managerial competence, and 3) creative opportunism (Long, 1983). Long (1983) argued that modern definitions of entrepreneurship that exclude any of these three fundamental dimensions are basically incomplete. In some textbooks, entrepreneurs include those who take over a business after the founder retires, dies, or sells out - but who continue to build and innovate and those who run a franchise independently of the franchisor (Siropolis, 1986). While there are many ways to describe a small business owner, the word most often used is entrepreneur (Hodgetts & Kurattro, 115). But an entrepreneur is not necessarily a small business owner because the definition of entrepreneur does not include any limit on size standards of the firm. To support this argument, Edwin (Long, 1983)'s statement about entrepreneur is cited as follows:

In a liberal definition of entrepreneurship, even Lenin might qualify as an entrepreneur since he took considerable risk, showed a high degree of independence, and applied to Russian society innovative ideas that led to new organizational forms in many sectors of Soviet life.

In addition, it is established that, although there is an overlap between entrepreneurial firms and small business firms, they are different entities (Carland et al., 1984). To guide future studies, Carland et al. (1984) proposed to distinguish between a small business owner and an entrepreneur as follows:

Small business owner is an individual who establishes and manages a business for the principal purpose of furthering personal goals. The business must be the primary source of income and will consume the majority of one's time and resources. The owner perceives the business as an extension of his or her personality, intricately bound with family needs and desires. Entrepreneur is an individual who establishes and manages a business for the principal purposes of profit and growth. The entrepreneur is characterized principally by innovative behavior and will employ strategic management practices in the business.

However, entrepreneurs are rarely found in large, mature industries (Bracker & Pearson, 1986). One of the ways in which one can classify those starting their own firm is to separate those who wish to make money (classic entrepreneur) from those whose prime motivation is to make "things" and generate sufficient income to continue in a self-employed status (artisan and perpetual inventor) (Birley & Norburn, 1985). Unfortunately, many researchers often use the term "entrepreneur" to represent "small business owner." Inevitably, both terms will still be used in this study interchangeably. The main reason is that some citations use the term "entrepreneur."

### CLASSIFICATIONS OF SMALL BUSINESS

In the research on small business, only very few authors distinguished between different types of small businesses. So far, research in this specific area is sporadic. The simplest classification is given by Robinson and Pearce (1984) as follows:

- 1) The growing (entrepreneurial) business
- 2) The small static (Mom and Pop) business

We can notice that the term "entrepreneurial" is used here to indicate a kind of business which has the capacity for innovation, investment, and expansion in new markets, products and techniques. With regard to this classification, Robinson and Pearce (1984) also suggested future research on whether the application of planning is the main ingredient that separates these two types of small businesses.

A more refined classification was done by Vesper (Cooper, 1981; Robinson & Pearce, 1984) as follows:

1) Mom and Pop Firms

They are the majority of small businesses, particularly in retailing and service industries. Many have no hired employees and rely only on the proprietor or members of the family. Their founders often lack formal managerial training, but may have technical skills, such as being able to sell real estate, cut hair, or do automobile repairs. Capital barriers to entry are usually low, management methods intuitive, and profits moderate or low. Startups and discontinuances are frequent and the founders often move from blue-collar or clerical jobs to entrepreneurship and back again. Some such places of business need revolving doors, not for the few customers, but for the entrepreneurs who come and go.

2) Stable, High-Pay Off Companies

They are some small retail and service firms and

a higher percentage of small manufacturing firms. Their founders often have more formal education and higher expectations than the mom and pop founders. Often they enjoy strong competitive positions deriving from specialized know-how, patents, or a virtual monopoly in a particular local market. Management methods, although informal by large company standards, may be very effective.

### 3) Growth-Oriented Small Firms

They offer the possibility of high payoff through selling out, through floating public issues of stock, or through controlling a large enterprise. They are started more often by groups, with the founders usually having had managerial experience. Their strategies usually position them in growing markets or involve innovative methods or products which give them clear competitive advantages. However, their growth may impose heavy demands on the founders, in personal commitments and the need to take the risks. Capital requirements may bring outside investors and loss of control. Management methods may change to such a degree that the original founders must be replaced.

It is certainly possible for a firm to move from one category to another; however, in general, these types of firms start with different resources, follow different growth paths, and involve different internal environments for the formulation and implementation of strategy (Cooper, 1981; Robinson & Pearce, 1984).

Susbauer (1979) gave a more detailed classification of small businesses. His typology is based on different definitions of success for small firms. He classified four types of small businesses as follows:

#### 1) The Survival Firm

This class of firm corresponds to the mom and pop firm classified by Vesper (Bracker & Pearson, 1986). This kind of enterprise has the highest failure rate, and succeeds by surviving.

#### 2) The Attractive Growth Potential Firm

This type also defines success in terms of

survival, at least initially. However, the survival criteria is simply an intermediate step on the way to more substantial financial performance. High technology firms frequently fall into this category. Regionally-based retailers, multi-location service firms and some manufacturing and wholesaling firms also may be placed in this slot. These firms usually target a specialized market, are growth-oriented, have professional management and management assistance, and are backed by proper capitalization.

### 3) The Underachieving Firm

Anecdotal evidence suggests that a market niche has generally been established, and that the entrepreneur has reached a stage where he/she is able to derive a substantial standard of living from the fruits of the enterprise. The "true" potential of the firm is not being realized however. There are two basic types of underachievement: 1) A Conscious Underachievement The potential is intentionally hampered because of the personal aspirations of the entrepreneur; and 2) An Unintentionally Underachieving The potential is unintentionally thwarted by actions (or inactions) on the part of the entrepreneur such as a mismatch of technology, market, finance, and/or management capabilities.

### 4) The High Success Growth Firm

They are growth enterprises that have survived and are achieving their potential. Such firms may still be managed by their founding entrepreneur, and may maintain a high degree of continuing entrepreneurial activity in the firm, as business planning techniques begin to rationalize behavior in the firm, and strategic issues become of direct concern as old products cycle to maturity, new products are created to fill new niches, and the firm expands.

We can see that different authors arrived at different classifications. For the strategic planning purpose, the best way to classify small businesses is to characterize firms according to the application of strategic planning. In essence, this is similar to Robinson and Pearce (1984)'s suggestion for future research. However, their suggestion for future research

relates the application of strategic planning to only two types of small businesses. In this regard, we should not just limit ourselves to only two types.

#### SMALL BUSINESS CHARACTERISTICS AND ENVIRONMENT

Differences between small and large companies exist not only in size but also in structure, policy making procedures, utilization of human resources as well as personnel practices. Distinctive characteristics of small business are as follows:

- 1) Unlike the CEO of a large company, a small business owner is frequently not well educated and sophisticated (Bund, 1981). As a result, effective management techniques may not be applied in small business. In order to fill this management gap, a small business owner needs to learn to incorporate strong working relationships with outside consultants into the structure of everyday operations to form a management team, typically comprised of an accountant, attorney, banker, and possibly other consultants who would provide the needed expertise to assist in closing this gap (Kilzer & Glausser, 1984). Although a considerable body of prescriptive literature has evolved in small business planning that emphasizes the important role of outsiders in improving the effectiveness of strategic planning in small firms, only limited empirical evidence has been gathered to support such an idea (Robinson, 1982).

Recognizing the need for staff specialists and planning consultants in small firms, as well as the hesitancy or inability of small firm owner/managers to procure such services through conventional sources, the Small Business Development Center (SBDC) program, staffed by MBA students, Ph.D. students already holding the MBA, and full time professionals (holding the MBA), was inaugurated in 1977 on an experimental basis in eight states to meet this outsider need more effectively by providing free, comprehensive managerial planning consultation to small businesses in a manner patterned after the Agricultural Extension Service (Robinson, 1982). Robinson (1982) concluded from his study of over one hundred small retail, service, and manufacturing firms that the effectiveness of small firms engaging in outsider-based strategic planning was significantly higher than that of firms that did not engage in such planning.

2) Small business is especially vulnerable to unstable economic conditions and other unforeseen events because a small business owner has fewer or limited internal and external resources (equity, borrowing capacity, cash flow, products, technologies, services, know-how, manpower, and advice), and opportunities to spread the risk through portfolio management seldom exist (Bund, 1981; Rimler & Humphreys, 1980; Van Hoorn, 1979). If the small business manager does not have the ability to

create his or her own profit opportunities, then that manager must compensate for this weakness by developing planning and decision-making techniques that allow him or her to take the greatest advantage of opportunity created by others (Sonfield, 1984). This can be accomplished through the development and implementation of contingency plans, as shown in Appendix 7. Although each small firm individually cannot influence its outside environment, collectively small firms can influence the outside environment, i.e., cooperative efforts (DeNoble & Moliver, 1983; Rimler & Humphreys, 1980). A strategic model for these cooperative efforts will be presented in the next section. Cooperative efforts on the part of smaller firms attempting to accomplish a wide range of diversified objectives may take on any number of forms, ranging from getting together and hiring one competent computer programmer who would service all participating firms to the concept of an industrial coalition of small firms as the key to small business survival (DeNoble & Moliver, 1983). Examples of small firm cooperative efforts are shown in Appendix 8. Also, small business owners can provide the best protection for their companies from outside forces by being aware of the external forces that affect them (Rimler & Humphreys, 1980). Given the constraint of limited resources in terms of both time and money, a small business owner can use environmental

scanning techniques to fulfill the important function of the acquisition of information about his environment (Pearce, Chapman & David, 1982). Environmental scanning is the radar that informs the pilot of conditions which are likely to be encountered, and scanning techniques range from the regular monthly reading of a business journal to the continuous operation of an information analysis department employing a large staff of researchers and analysts (Pearce, Chapman & David, 1982). However, these techniques cannot be used blindly or haphazardly, but must be carefully adapted with a full understanding of the differences between large and small businesses (Miller, 1987). Pearce et al. (1982) suggested four general guidelines for profitably implementing environmental scanning in small and growing firms as follows:

- a) Figure out what the technique provides.
- b) Evaluate the firm's need for the information the technique provides.
- c) Analyze the cost/benefit ratio of the technique.
- d) Establish an acceptable level of risk.

In addition, a relatively new qualitative tool for collecting primary data from consumers, called the focus group technique, can be used. Focus group research involves a trained moderator or facilitator conducting several small-group discussions about a particular topic of interest (Keown, 1983). While the principal advantage of focus groups is synergism, the prime disadvantage is

the lack of generalizability due to the small sample size (Keown, 1983). A relatively new concept in assisting entrepreneurs is a small business incubator which is a facility that aids the early-stage growth of companies by providing rental space, shared office services, and business consulting assistance (Allen & Rahman, 1980). As owners begin to realize that business survival depends not only on the ability to react to changes in the external environment, but also on strategies that anticipate and plan for these changes, the need for strategic planning becomes clear.

3) Although small firms cannot compete with large firms in hiring many and finally choosing the best few from the original group and providing training and directed career development through a succession of jobs within the company over an extended period of time, small firms can offer different patterns of career development such as extraordinary opportunities for the person who is willing to work and to take responsibility to become the sole owner of the operation after a period of time - it can even be called the American Dream (Rimler & Humphreys, 1980). However, sometimes outstanding qualifications or the lack of them do not determine the extent of an individual's success in a small firm because of family succession syndrome (Rimler & Humphreys, 1980). Family succession can result in a business failure if

non-qualified person is chosen. Therefore, there should be meaningful succession criteria in order to prevent any disastrous implications.

4) Because there is no place to hide in small business, every employee and manager must be productive and useful to the company (Rimler & Humphreys, 1980). A person who has poor performance can be easily uncovered, and he has to leave the job.

5) Delegation often appears optional to small business people because it seems so much easier to do everything alone by the owner (Rimler & Humphreys, 1980). However, failure to properly delegate can have disastrous personal and organizational consequences (Rimler & Humphreys, 1980).

6) Communication is an area where small firms have a definite advantage, and every owner can make this advantage work for him (Rimler & Humphreys, 1980). In particular, personal business relationships without any bureaucracy can be established between potential buyers and small business.

7) Small business has inherent strengths in the area of motivation, and these strengths need to be explored and developed (Rimler & Humphreys, 1980). Small business owners are less constrained by company policy and tradition, union contract agreements and employee apathy and are free (in theory, at least) to motivate their

employees in any way that they choose, so they can be more flexible and responsive (Rimler & Humphreys, 1980).

#### PLANNING FOR SMALL BUSINESS

Small businesses need strategic planning as much as large businesses. Most of the strategic planning literature focuses on the large, multi-product, multi-divisional firm, and suggested planning procedures and organizational structures are also associated with large firms (Moyer, 1982). Only recently, a small but growing body of research is addressing the important issue of small business strategic planning (Sexton & Van Auken, 1985).

With regard to small business strategic planning, Robinson and Pearce (1984) alleged the following:

Unfortunately, the state of knowledge pertinent to strategic management of small and growing firms is woefully inadequate. Most literature in this area is prescriptive, lacking a rigorous empirical base. There is a noticeable lack of continuity in published research. Inexplicably, studies rarely build on and refine issues raised in previous "small firm" planning research. Finally, literature in this area suffers from a "little big business" syndrome. This syndrome frequently is manifested in two ways. In prescriptive literature, one frequently encounters a concept that has been used within large firms and is being written about as a small application. . . . In empirical literature, one often finds inappropriate definitions of a "small and growing firm."

In the previous section, different definitions of a small business were purposely examined. Researchers in the small business area must be aware of the lack of consensus as to the definition of a small business. In

this section, some definitions and concepts of strategy and planning will be briefly reviewed. Then, the factors influencing the formulation and implementation of strategy in small business will be examined. Finally, normative and empirical literature dealing with small business strategic planning will be reviewed.

#### CONCEPTS OF STRATEGY AND PLANNING

Below are some definitions of strategy, strategic planning, and strategic management.

Based on a study of the different definitions and concepts of strategy proposed by leading authors, Hofer and Schendel (1978) defined an organization's strategy as the:

fundamental pattern of present and planned resource deployment and environmental interactions that indicates how the organization will achieve its objectives.

Their composite definition of strategy built around four components (Hofer & Schendel, 1978; Schendel & Hofer, 1979):

- 1) Scope or Domain, that is, the extent of the organization's present and planned interactions with its environment.
- 2) Resource Deployments or Distinctive Competences, that is, the level and patterns of the organization's past and present resource and skill deployments that will help it achieve its goals and objectives.
- 3) Competitive Advantages, that is, the unique positions an organization develops vis-a-vis its competitors through its pattern of resource deployments and/or scope decisions.
- 4) Synergy, that is, the joint effects that are sought from the organization's resource deployments and/or scope decisions.

While this definition excludes goals and objectives, it recognizes that the achievement of objectives is the aim of strategy and that the combination of objectives, strategy, and policies form a "grand design" or master strategy for the firm (Schendel & Hofer, 1979).

The results of interviews with fifteen managers of small manufacturing firms suggest that managers do indeed characterize their competitive approaches in terms like the following strategies (Davig, 1986):

1. Defender Strategy A firm following this strategy attempts to locate and maintain a secure niche in a relatively stable product or service area. It focuses on a more limited range of products or services than its competitors, and it tries to protect its domain by offering higher quality, superior service, lower prices, or the like. It does not attempt to be at the forefront of the industry.

2. Prospector Strategy A firm following this strategy typically operates within a fairly broad product or market definition and the products or services it offers may change periodically. It values being one of the first to offer new products, even if not all of these efforts prove to be highly profitable.

3. Analyzer Strategy A firm following this strategy attempts to maintain a stable, somewhat limited line of products while at the same time moving to following the more promising new developments in the industry. In many respects it is intermediate between Defender and Prospector strategies.

4. Reactor Strategy A firm following this strategy exhibits a more inconsistent approach than the other three types - a kind of "non-strategy." Such firm does not take risks on new products or services unless threatened by the competition. The typical approach is to "wait and see" and to respond only when forced to by competitive pressures to avoid losing key customers and/or maintain profitability.

Curtis (1983) introduced eleven basic strategy options. Several of these strategies are not appropriate

for small businesses but there are many others that are (Curtis, 1983). In addition, he identified five levels of strategy found in a major corporation. The market and product strategies cannot exist independently of a business-unit strategy except for a single-product business unit serving one market (Curtis, 1983). The business-unit, division, and corporate strategies can stand alone although most companies seek to integrate all the lower-level strategies into the higher levels. Curtis (1983) also developed a relationship between basic strategies suitable for small business and the lower levels of corporate strategy.

Lasserre and Putti (1986) defined strategic planning as the process by which strategy is formulated and distinguished two types of strategic planning: an informal one based on intuition, inspiration, innovative behavior embodied in the minds of business leaders; and a more formal one based upon analytical reasoning, decision-making techniques and orderly communications.

On the other hand, according to Khandekar and Young (1985), strategic planning involves the posing of alternatives followed by selection of one or a combination of these for implementation based on 2 steps: 1) involves divergent thinking, i.e., starting from a given point and visualizing many different paths or alternatives; and 2) involves convergent thinking, i.e., starting with a number

of alternatives and reducing that set, preferably to a single alternative.

Shaw et al. (1986) developed four different planning methodologies as follows:

1. Crisis Management The CEO has a vision of what he wants the organization to accomplish (stand for) eventually. The CEO lacks a definite plan for accomplishing this goal. He deals with the firm's problems on a day-to-day, minute by minute basis. The CEO makes all but the most perfunctory decisions.

2. Planning Through the Budget The central administrative staff develops guidelines and other pertinent data which are, in turn, distributed to the divisional managers. The division then develops long-range plans, usually of five to ten years duration. These plans are submitted to the central administration, adjustments negotiated, and plans finalized. In many cases, only the current year of the plan is utilized, the remainder being filed away until the next planning period.

3. Long Range Planning Responsibility for planning is centered at the functional managerial level of each division (many firms center it in the marketing department). Each department manager is responsible for developing a sales forecast and utilizing it as the basis for making his plans and budget requests. These long-range plans are then aggregated and form the division's plan which is submitted to the central administration, adjustments negotiated, and implemented. The combination of all the divisional plans becomes the firm's plan.

4. Strategic Planning The firm's top managers define the organization's business and develop the strategies and tactics to achieve these goals. The Strategic Business Units (SBU's) are perceived to be individual divisions with unique roles to be played in achieving the organization's goals. The administration realizes that all SBU's need not contribute equally or in the same manner to the success of the organization. The central management looks upon the divisions as an investment portfolio designed to assume different roles in the overall success of the business. The SBU's utilize the same planning techniques in developing their strategies after negotiating their roles with the central management. Strategic plans are usually for one year, occasionally up to three years.

According to Robinson et al. (1986), conceptually there are two broad types of planning:

1. Strategic Planning It is concerned with determination of the firm's mission, its principal strategies, and the key goals these elements are intended to accomplish.
2. Operational Planning It refers to the process of engaging in detailed planning activities that lead to the development of short range goals, action plans and procedures to guide the handling of day to day operations. It focuses on tactical initiatives, issues and problems in the functional areas of the business. It is more specific, less comprehensive, done at a lower level, involving the relative allocation of small amounts of resources, often repetitive in nature. It serves a major role in the implementation of business strategies by translating strategic plans into functional action.

Recent reviews of small firm planning research suggest that previous studies have neglected operational planning, focusing exclusively on strategic planning (Robinson, Logan & Salem, 1986).

Schendel and Hofer (1979) defined strategic management as a process that deals with the entrepreneurial work of the organization, with organizational renewal and growth, and more particularly, with developing and utilizing the strategy which is to guide the organization's operations.

According to Thompson and Strickland (1987), the strategic management function has five interrelated components:

1. Developing a concept of the business and forming a vision of where the organization needs to be headed - in effect, infusing the organization with a sense of purpose, providing long-term direction, and establishing a mission.

2. Translating the mission into specific long-range and short-range performance objectives.
3. Crafting a strategy to achieve the targeted performance.
4. Implementing and executing the chosen strategy efficiently and effectively.
5. Evaluating performance, reviewing the situation, and initiating corrective adjustments in mission, objectives, strategy, or implementation in light of actual experience, changing conditions, new ideas, and new opportunities.

Bracker and Pearson (1986) revealed eight distinct components that constitute a planning process: objective setting; environmental analysis; strengths, weaknesses, opportunities and threats analysis; strategy formulation; financial projections; functional budgets; operating performance measures; control and corrective procedures. They identified four distinct levels of sophistication in the strategic planning process as follows:

1. Structured Strategic Plans (SSP) Formalized, written, long-range plans covering the process of determining major outside interests focused on the organization; expectations of dominant inside interests; information about past, current, and future performance; environmental analysis; and determination of strengths and weaknesses of the firm and feedback. Typically 3-15 years in nature.
2. Structured Operational Plans (SOP) Written short-range operation budgets and plans of action for current fiscal period. The typical plan of action would include basic output controls such as production quotas, cost constraints, and personnel requirements.
3. Intuitive Plans (IP) Informal plans are developed and implemented based on the intuition and experience of the owner of the firm. They are not written and are stored in the memory of the firm's owner. No longer than 1 year in nature. They depend on objectives of the owner and the firm's present environment.
4. Unstructured Plans (UP) No measurable structured planning in the firm.

With regard to small business, Fry and Stoner (1985) classified business plans as follows:

- 1) Strategic plans - outlining the actions necessary to achieve long-range goals.
- 2) Tactical, operating plans - focusing on the short-run, usually one year.
- 3) Functional plans - specifying short to medium range actions, and having to do with specific aspects of the business, such as marketing, finance, manufacturing, or personnel. (These tend to differ somewhat from the general "policies" which guide day-to-day action.)
- 4) Investment, or financial plan - used by small business owners to gain access to financing from banks, the SBA, or venture capitalists.

Fry and Stoner (1985) referred to the first three types of plans collectively as working plans. So, according to them, there are two major business plans: working and investment. The investment plan is designed for the sole purpose of obtaining financing, whereas working plans are designed to guide and control actual business operations (Fry & Stoner, 1985).

In addition, possible uncertainties should figure into the plan, along with activities undertaken in dealing with those uncertainties (Hearn, 1984). Unfortunately, research in the area of strategic planning in small business seldom reflects the differences among different types of plans and planning. Moreover, in developing a business plan, the small business owner must consider the life stage or business cycle. For example, seeking appropriate lending sources in the plan depends on company life-stage (Hearn, 1984).

On the other hand, the editors of Small Business Report (Anonymous, 1983a; the editors of Small Business Report, 1986) divided corporate planning into three basic types as follows:

1. Functional, Operational, or Short-Term Planning - providing the necessary direction for a company's day-to-day operations, and being implemented by the line management.
2. Long-Range Planning - the blue print of the company's future, showing where the company expects to be after a given period of time.
3. Strategic Planning - the "action plan", flexible, dynamic, and continually changing to maximize results, i.e., how the company intends to get there.

There is much confusion about the types of planning and the purposes they serve. However, the need for multifaceted planning is very clear: to provide direction for day-to-day operations; to produce a blueprint of the company's future; to enable decision-makers to anticipate and respond to change; and to build an action plan for getting the company from where it is today to where it wants to be in the future. Although there are differences in defining strategic planning among different authors regardless of the size of the organizations, Birley and Norburn (1985) claimed that most would agree that five elements are encapsulated:

1. A definition of mission and objectives
2. A corporate audit as to competitive advantage
3. A review of potential noncontrollable external threats and opportunities
4. A consideration of strategic options, and degrees of freedom
5. A choice of strategy, and monitoring of its implementation

However, according to Birley and Norburn (1985), the following contrasts the major points of difference between large and small companies:

1) Mission and Objectives

When formulating corporate goals, the fundamental reason for differences in strategy between large and small companies lies in the relationship between ownership and control. While the manager in a large firm has to consider the needs of his stakeholders, the interest of the small businessman stretches beyond the commercial to the personal needs of himself and his family.

2) Assessing Resources and Strengths

In the large organization, management already exists as a function; skills are many and varied and human resources may need only to be harnessed, not created. By contrast, without owner's knowledge, and credibility, the small firm would have little chance of getting off the ground.

3) Environmental Scanning

In the large organization, the role of monitoring the environment is taken by the separate specialist departments using established databases or by extensive use of computers. The small firm has neither the time nor the skills to collect and sift the data, nor the financial "slack" to afford the software

4) Strategic Choices

For larger companies, strategic choices are made from a range of product/market options, each of which has its own risk/return profile, in order to develop a balanced product and business portfolio, and finally financial, production, R&D, and personnel strategies. The models and motives used in structuring the strategic decision process start with an assumption of a product/market portfolio in place. Ideas must fit the boxes for the strategy to be coherent. For the small firm, fitting the one or two products into a two-by-two matrix seems at best unhelpful and frequently ridiculous.

5) Monitoring and Control

Because of his personal involvement in decision making, the entrepreneur has little need for detailed reporting systems. Conversely, the very complexity of multidivisional structures toward conformity.

There is still an incongruity in the concepts of

these terms among different authors in the field. Therefore, they deserve further research. This is neither the time nor the place to go into a detailed analysis about this development. Only the concepts relevant to small business will be presented here.

Given the inherent differences between small and large businesses as described earlier, one cannot bluntly apply planning models and theories written for large firms to small firms. Small firms are not just compact versions of large firms; they are quite different in purpose, characteristics, effectiveness, analysis of, and interaction with, their environments. The distinctive characteristics of small business were described earlier. Many published works on planning in small business point out that while sophisticated and elaborate planning concepts may be of great benefit to giant corporations, their costs may far outweigh their benefits to smaller firms (Jones, 1985). Only financially well-endowed firms can justify the planning cost implicit in most of the strategic planning literature (Moyer, 1982). As a result, small business managers have learned that there is no "ideal" strategic planning process, and that the scope of strategic planning in small business cannot parallel that of big business (Jones, 1985).

#### FACTORS INFLUENCING STRATEGIC DECISION

There are many factors which can either inhibit or

promote the change and development process of small business planning. Major factors from different writings were integrated and dichotomized, according to Gibb and Scott (1985), into the following two groups:

Key Internal (Organizational) Factors

1. Personal and leadership characteristics of the owner manager: age, occupational background, personal objectives, family influence on these personal objectives and also on the distribution of assets and positions in the company, concentration or dispersion of ownership, management style and decision making which may be highly influenced by the owner manager in the small business, the level of the owner's education and training, personal values and attitudes, and cultural factors (Barnard, 1986; Cooper, 1981; Gibb & Scott, 1985).

2. The limited specialization and absence of highly qualified specialist personnel may in particular have influence on the capability for planning (Gibb & Scott, 1985).

3. The control system such as the degree of formalization and the extent to which planning ahead is built into it in terms of forecasts and budgets (Gibb & Scott, 1985).

4. The human potential of the organization in terms of skills, particularly managerial capability, and flexibility of the workforce (Barnard, 1986; Gibb & Scott,

1985).

5. The financial situation of the company particularly in terms of access to adequate financial resources both internally and externally (Barnard, 1986; Gibb & Scott, 1985; Sexton & Dahle, 1976).

6. The physical asset base of the company in terms of age, quality of equipment and up-to-dateness of technology (Gibb & Scott, 1985).

7. Managerial time, i.e., availability of time for strategic activities of setting the goals and direction of the firm and implementing the tactical activities necessary to achieve the company's purposes (Barnard, 1986; Gibb & Scott, 1985; Sexton & Dahle, 1976).

8. Managerial motivation and commitment in relation to the planning process and particular developments in the company embracing, in particular, concern for certain tasks as opposed to others (Barnard, 1986; Gibb & Scott, 1985).

9. The availability of sufficient information about the external environment, the market served, the competitors as well as some information about possible developments in the future (Sexton & Dahle, 1976).

10. Structural barriers include problems with authority/responsibility patterns occurring during periods of dynamic growth when employees who participate in planning are asked to set goals and objectives for

activities based upon formal titles and positions and have little or no control over these activities in reality (Kelley & Young, 1983). Likewise, a lack of clarity concerning the desired goals of the new planning system may be a barrier to implementation (Kelley & Young, 1983).

11. When managers engage in internal politics, the effects on the development and implementation of the strategic business plan can be disastrous (Jones, 1985).

#### Key External Factors

1. The existing product and market situation and the pressures for change from this (Gibb & Scott, 1985).

2. The strength of competitive pressures and strategies (Barnard, 1986; Gibb & Scott, 1985).

3. The broadness or otherwise of the firm's market operations as revealed by the number of different activities the firm is engaged in and the products produced may limit the number of strategic alternatives open to the firm (Gibb & Scott, 1985).

4. The age and development profile of the firm's major products: this will influence the need for and speed with which new products need to be developed (Gibb & Scott, 1985).

5. Degree of complexity and uncertainty in the market served (Gibb & Scott, 1985).

6. The influence of the wider environment (excluding the immediate task environment with which the firm

interfaces): economic, social, legal, and political conditions (Cooper, 1981; Gibb & Scott, 1985).

7. The presence of experienced entrepreneurs also influences future entrepreneurship and their companies can offer consulting opportunities for fledgling founders (Cooper, 1981).

#### NORMATIVE PLANNING STRUCTURE AND FRAMEWORK

Normative models and guidelines for small business planning are presented chronologically as follows:

##### 1. Wheelwright's General Approach for Selecting and Implementing a Strategic Planning Procedure

Based on a research program on strategy at the Stanford Business School, particularly a comparison between synoptic and incremental plannings in small firms, Wheelwright (1971) suggested a general approach for selecting and implementing a strategic planning procedure. Procedures that are synoptic in nature emphasize setting corporate objectives, generating a range of alternative strategies, and then using the stated objectives to evaluate these alternatives and select the best one (Wheelwright, 1971). Incremental procedures, on the other hand, generally consist of identifying the firm's existing strategy, examining the strengths and weaknesses of the firm, and the threats and opportunities of the environment (particularly competition), and then improving the existing strategy (Wheelwright, 1971). The

incremental planning, without an outside consultant, was found to be most appropriate and effective in two of three companies in the study (Wheelwright, 1971). Gibb and Scott (1985) argued that the distinction between these two approaches is not always clear. Basing his research findings on only three companies does not seem valid. Since the conclusion is contradictory between two papers, it is important to conduct further research with more representative samples.

## 2. Strategic Planning in Small Business Utilized by Georgia Small Business Development Centers (SBDC)

Small Business Development Center (SBDC), University of Georgia, Athens, Georgia, one of eight original pilot programs in the United States, has been providing comprehensive consulting services since April, 1977. When decision-making in the small business environment is considered, it is likely to be characterized by intuitive, "seat-of-the pants" speculation based on the owner's experience and dealing with present operational issues (Robinson, 1979). The owner/operator has minimal time, resources, and skills to engage in sophisticated forecasting since the owner has molded his decision making activity through repeated crisis management, focusing on day-to-day decisions with relatively short time spans (Robinson, 1979). The owner needs to be moved to a rational, systematic decision-making process that involves

a general analysis (forecast) of the situation, development of alternatives, choice and implementation (Robinson, 1979). In this way, the owner is basically refining a cognitive process that is currently in use and understood (Robinson, 1979). A process that the small business person can intuitively relate to simply gets him to look ahead systematically (Robinson, 1979). The process can be implemented without over-burdening present time constraints, yet within present skill levels, and hopefully will increase the firm's chance of survival (Robinson, 1979).

### 3. Schollhammer and Kuriloff's Systematic Planning Approach

Schollhammer and Kuriloff (1979)'s systematic planning approach focuses on discovering opportunities that would enhance the firm's success and identifying threats that could cause its failure. Their planning process including analytical steps which they claimed essential in small as well as large organizations does include personal values of top managers as an element leading to determination of appropriate strategies and tactics to achieve desired objectives economically. However, they failed to recognize the importance of the personal values of top managers in their systematic planning approach.

#### 4. Redinbaugh and Neu's Strategic Business Planning Process and Strategic Business Plan

Redinbaugh and Neu (1980) viewed strategic planning as a continuous process, whether one begins a new venture or plans for the growth and survival of an existing business. They also suggested a logical, sequential approach to preparing the strategic business plan. Although they claimed that this exemplifies a systems approach to management by dealing with diverse parts in a business system, they failed to acknowledge the importance of personal characteristics of the owner in selecting strategies and tactics.

#### 5. The Input-Output Small Business Planning Model

Van Auken and Ireland (1980) presented the input-output small business planning model, portraying ten basic phases, or steps, of planning in terms of the activities and information preceding each step (the planning inputs) and the corollary outcomes and benefits (the planning outputs). To further aid the small business manager in staying away from the bureaucratic pitfalls of planning, they identified factors to be avoided. They claimed that this model promotes a forward-looking proactive style of management as opposed to a backward-looking reactive style. However, the flow of this input-output model is not well defined. Specifically, the output of competitive strategy, which is

competitive edge according to the model, does not flow to any plan. The flow from planning organization to forecasting is not plausible. Generally, forecasting should precede planning organization. Moreover, when can goal formulation start? According to the flow, it is not really clear when goal formulation which was assigned as the sixth step can start.

#### 6. Moyer's Planning Process

Moyer (1982) presented a basic outline of the planning process. There are many flaws in this planning process. First of all, it overlooks personal characteristics and objectives which are considered to be important issues that distinguish small firm planning from large firm planning. Since a small business owner plays a vital role in his business, his characteristics and objectives must be imbedded in the planning process. In addition, this planning process ends only at the customer analysis phase. Following this phase should be devising alternative courses of action, formulating strategies, operationalizing plans, implementation, control, and review.

#### 7. Van Kirk and Noonan's Eight-Step Process to Strategic Planning

Van Kirk and Noonan (1982) presented an eight-step strategic planning process as a guide to strategic planning. They ignored the important role of personal

characteristics and objectives of small business owner which can result in a positive or negative implication in planning.

#### 8. The Strategic-Planning Process for Smaller Businesses

Curtis (1983) described an approach to strategic planning for smaller businesses that is based on extensive experience with strategic planning for large companies, modified by equally extensive experience in consulting for smaller companies in the United States, Japan, and western Europe. In fact, his approach is an extension of his general paradigm for resolving complex problems consisting of three phases:

1. The judgment phase, an attempt to develop a better definition of the problem.
2. The research phase, to collect necessary data and establish formal analytical techniques that apply to the situation.
3. The decision phase, involving the development of decision criteria and their application to the results of the research phase.

He claimed that the best small business strategy should meet the personal requirements of the people who commit all their time and efforts to a business and none of the large business strategies took into account the personal characteristics of the important people in the business. His definition of small business is qualitative: dominance of the owner/CEO in the affairs of the business, the special relationship between the

owner/CEO and the business, and the existence of some degree of resource poverty. This definition reflects an importance of personal objectives which Curtis indeed included as an element in the strategic planning process. However, his approach fails to address the issue of feedback and control. Monitoring the performance is important and should be included in the strategic planning process.

#### 9. DeNoble and Moliver's Strategic Planning Model

DeNoble and Moliver (1983) proposed a strategic planning model to aid willing firms in organizing and planning future cooperative efforts. The only problem with this model is to find other firms with compatible goals and objectives. In addition, trust plays a major role in the success of this cooperation.

#### 10. Model for Entrepreneurial Self-Management

Manz and Snyder (1983) proposed a model for entrepreneurial self-management, which includes several techniques that successful entrepreneurs rely on for effective self-management on a day-to-day basis and also have substantial implications for strategic decision making. The major drawback of the concept of self-management is self-punishment because it is difficult to systematically and consistently use this tool.

#### 11. The Strategy Defensibility Model

Hughes (1984) proposed the Strategy Defensibility

Model to provide information that can be of considerable value in the overall evaluation and strategy development process by forcing management to focus attention on the potential threats or weaknesses represented by the interaction of the firm's process technology with the characteristics of its competitive environment. The model identifies four situations that can result from interaction of the flexibility of the firm's process technology and the potential market impact of a new or improved process technology that has been adopted by a competitor. His model is only a specific technique used to aid strategic choice at the business level, similar to SWOT analysis. However, there are other influential factors disregarded in this model namely role of past strategy, degree of the firm's external dependence, attitudes toward risk, internal political considerations and the CEO, timing, and competitive reaction.

#### 12. Kilzer and Glausser's Business Plan

Kilzer and Glausser (1984) defined business planning to include: the consideration of the strategic and tactical plans of the businesses; the preparation of operating plans or budgets, taking the form of financial statement forecasts; and the development of a financing plan. They tersely combined these components of a business plan into a formal document. They failed to identify a detailed process of developing strategic and

tactical plans. Moreover, they ignored the importance of control and revision of the plan.

### 13. Strategic Planning from a "Systems" Perspective

Wood (1984) pointed out how strategic planning from a "systems" perspective is applicable to small to medium sized firms. In essence, a "systems" perspective states that smaller firms by joining together can utilize the strategic planning process and market opportunity analysis to expand into new markets (Wood, 1984). In fact, this approach is similar to the cooperative efforts used to influence external environment collectively by a group of small firms, and this concept was explained in the last section with some examples in France and Canada. Although he did not go into detail how to develop a strategic planning from a "systems" perspective, he addressed the following questions which might be a part of his planning:

- What business to be in?
- Which markets to enter?
- What combination of product attributes to offer?
- What services to provide?
- What long term and short term plans to formulate?
- How will such plans be translated and coordinated into daily operations?

He gave an example of strategic planning from a "systems" perspective for the water-well industry by focusing mainly on using a systems approach to help export the product. He also suggested that other possibilities such as the forest and cotton harvesting and processing industries where U.S. know-how could be exported by using

a systems approach. However, the strategic planning in the context of a "systems" perspective deserves further research.

#### 14. Khandekar and Young's Mapping Function

Khandekar and Young (1985) alleged that as selection of a legal structure affects patterns of resource development and environmental interaction, and may thereby determine how and to what degree objectives are achieved, it is one of the first strategic decisions to be made by an entrepreneur. Furthermore, they purported that most textbooks discuss the selection of appropriate legal structures based on the advantages and disadvantages of selecting a specific legal structure. According to them, this common approach has three major drawbacks:

1. It assumes that entrepreneurs or potential investors can simultaneously consider all the advantages and disadvantages of the available legal options, each of which is to be appropriately weighed in the analysis.
2. It assumes that entrepreneurs can readily identify the subset of personal goals relevant to the decision at hand.
3. It assumes that entrepreneurs are capable of both divergent and convergent thinking.

As a result, they developed a mapping function (MF) for choosing a legal form for a new venture as a decision framework which takes into account the major relevant goals of entrepreneurs, considered sequentially (divergent) with the ultimate aim being to converge on a (set of) feasible choice(s). This mapping function is

relevant only to the strategic decisions to found a firm or to assess the appropriateness of the present structure.

15. The Quantitative Strategic Planning Matrix

David (1985) claimed that businesses that fail to utilize computer assisted strategic planning in the decades ahead are expected to become less and less competitive in all industries. Faced with the seriousness of cyberphobia (a fear of working with computers, a fear of failing to use computers properly, a fear of not understanding computers, and a fear of being replaced by computers), entrepreneurs should build support among employees and managers before, during, and after the introduction of computer systems (David, 1985). Strategic Decision Support System (SDSS) for large organizations include FACETS, DESIGN MANAGER, DATA REQUIREMENTS MODEL, CUFFS, EMPIRE, EXPRESS, FCS, IFPS, REVEAL, SICIS, SIMPLAN, XSIM, CAUSE, GADS, COSMOS, and STRATPAC (David, 1985). Two factors making decision support systems more accessible to small firms, however, are declining costs of technology and the advent of user-friendly, fourth-generation languages, which eases end-user computing (Cooley, Walz & Walz, 1987). Since the potential risk in computer security has increased proportionately, attention should be paid to controls and control systems on a continuing basis (Dascher & Harmon, 1984). David (1985) presented the QSPM (Quantitative

Strategic Planning Matrix) technique and program, especially tailored for small businesses. In essence, it is similar to IBM's LIGHTYEAR program which also utilizes rating factors in arriving at quantitative decisions. He claimed that the QSPM can benefit small businesses for a number of reasons:

1. easily understandable
2. tailored for the unique needs of any small business
3. run on almost any type of PC
4. can be altered by an entrepreneur as needed since it contains approximately 350 lines and is written in the BASIC computer language

Although this technique has been successfully class tested in business policy classes at Mississippi State University and East Carolina University (David, 1985), there is no report of using it in small business. Therefore, further research on usages of computer assisted strategic planning in small business including a survey of available programs and cost effectiveness is recommended.

#### 16. Gibb and Scott's Model of the Development

##### Process

Gibb and Scott (1985)'s model presents a composite of all the major factors identified as being relevant to the development and growth potential of small business but established in such a form that they can be used for purposes of obtaining a comprehensive profile of the business. The model was constructed from an observation of their empirical study carried out over a period of two

years of sixteen small companies based in the northern region of the United Kingdom seeking to develop new products and/or markets. Gibb and Scott (1985) criticized that certain writings on the subject of strategic planning seem to imply that strategic planning is about growth. By arguing that the capability of the company to manage change will determine its survival and/or growth, they made the distinction between change and growth in considering the influence of strategic planning on the development process. The overall model focuses on the process of change, specifically factors influencing the development process; however, it fails to include personal and corporate goals, formulation of strategies, implementation, control, and review of plans.

#### 17. The Opportunity Management Process (OMP)

Olson and Carey (1985) devised a sequence of steps, the Opportunity Management Process or OMP, to help a business owner assess his business strengths and weaknesses, review the external environment for opportunities and threats, develop action programs to deal with threats and/or seize opportunity, and monitor/control action programs. They claimed that this sequence of planning steps has been extensively tested by managers and owners of smaller business firms. However, this tool does not take into account personal characteristics of the business owner.

### 18. Normative Planning Model

Shuman and Seeger (1986) proposed the normative planning model based on the conceptual scheme proposed by Andrews (1980) and issues and concerns expressed by Curtis (1983), Moyer (1982), Thurston (1983), and Van Kirk and Noonan (1982). They contrasted this normative planning model with actual practice in smaller rapid growth companies of which the survey responses were obtained from Shuman et al. (1985). The normative planning model survives this comparison with actual practice (Shuman & Seeger, 1986). No indication was found that any aspect of importance to strategic planning in smaller companies had been systematically overlooked (Shuman & Seeger, 1986). However, one of the major shortcomings of the model is that it specifies activities that should take place, without clearly relating the extent and nature of those activities to the people, time, and dollar resource limitations that constrain the CEO (Shuman & Seeger, 1986). Consequently, the CEO is unlikely to make the commitment of an unknown level of resources to a process that cannot be guaranteed to produce what he identifies as improved performance (Shuman & Seeger, 1986).

### 19. Step-by-Step Approach to Strategic Planning

The editors of Small Business Report (Anonymous, 1983b; Anonymous, 1983c; The editors of Small Business Report, 1986) devised a flexible, continuous step-by-step

approach to strategic planning which can be broken down into twelve basic steps. The first step: Develop An Effective Planning Organization should include the role of personal characteristics of the business owner. They emphasized the flexibility of the strategic plan since planning deals with the unknown. It must be tailored to fit the CEO's plans and managerial style, and it must also be a participative effort.

#### 20. Strategic Process Model

Fairfield-Sonn (1987) presented a strategic process model which can aid managers in deciding whether or not training and development activities are likely to lead to competitive advantage in their organizations. His model is organized around three segmented stages. The model is only a general guide in approaching training and development strategy. The first stage of the model: Organizational Assessment should not only focus on the organization's primary goals and internal tensions or deficiencies, but it should also consider the owner's characteristics and goals. And the effective use of the model is illustrated by only one service organization. However, further empirical research is needed to test the model and to assess its strengths and weaknesses vis-a-vis industry type, firm size, and different growth stages.

The models and guidelines presented earlier range from specific techniques including a computer package to

comprehensive plans. However, a lot of these models and guidelines failed to recognize the importance of personal characteristics and objectives of the CEO's/owners of small business. This point really distinguishes a planning approach in small business from large business. In small business, the owner's personal objectives generally interrelate with company objectives. Furthermore, the complexity of owner's personal characteristics such as attitude toward risk, needs, motivation, family influences can have a tremendous effect on strategic decisions. There is a lot of extensive research on the characteristics of the small business owners to support this argument. In fact, Cooper (1981) gave some examples of these research findings. Another important point is that the planning process and the plan itself should be kept simple as possible. Otherwise, they can stymie the effectiveness of the plan. Since small business owners have a limited level of sophisticated skills and scarce availability of time, they can be dissuaded to plan effectively at the start-up stage by the complexity of the planning process and the plan itself. No matter how simple the planning process and the plan are, they must be systematic, organized, flexible, and based upon sound, factual information. As the firm gains more experience and the management's planning skills improve, the level of sophistication in planning should

increase.

Nevertheless, we should be lucid about the concept of planning, specifically the planning process and the plans. As mentioned earlier, there are many different definitions for strategic planning. So, whose definition is more appropriate? This study does not focus on choosing the most appropriate definition. However, it is important to define clearly each type of plan before launching to formulate a plan. Based on the models and guidelines presented in this section, the following guideline for a planning process is proposed:

1. Define strategic planning and identify its major purpose within the firm. It is important to be clear as to what strategic planning is and what role it plays in the firm.

2. Identify important variables in strategic planning.

- a) Company's mission
  - measurable objectives
- b) Personal characteristics of the owner
  - age
  - education
  - occupational background and training
  - personal objectives
  - family influences
  - concentration or dispersion of

ownership

- management style and decision making
- personal values and attitudes: needs, motivation, and risk
- cultural factors

c) Environment

- degree of complexity and uncertainty in the market served
- influence of economic, social, legal, and political conditions

3. Analyze situation.

- SWOT analysis
- Company's current competitive position

4. Devise alternative courses of action.

- Scenarios

5. Evaluate and select the best alternative.

- Feasibility

6. Implement the strategic plan.

- Written plan
- Participants
- Timetable
- Contingency plans

7. Control and feedback

- Review system

#### EMPIRICAL LITERATURE

This section explores small business planning

practices, particularly to confirm the absence or presence of small business planning practices. Appendix 9 summarizes planning practices in small business. The summary is an updated version of Robinson and Pearce's summary (Robinson & Pearce, 1984). Some differences between the original studies and the summary were detected after having scrutinized their summary. Specifically, Sexton and Dahle (1976) and Shuman (1975)'s original studies are completely different from their summary done by Robinson and Pearce (1984). Unfortunately, an access to some of the original studies was not possible. Hence, the author had to acquiesce in the summary effected by Robinson and Pearce (1984).

Assuming that Robinson and Pearce (1984)'s summary of the original studies which could not be secured is accurate, the author found that most firms did not engage in formal planning. Planning was informal, non-quantitative, unstructured, irregular, and uncomprehensive. Notwithstanding, we have to painstakingly interpret the research findings. There are some apparent differences among the research findings due to different sets of experiments. For instance, some authors on the one hand found all their firms studied did not have any formal planning, and on the other hand some authors found some percentage of their firms studied did formal planning. Moreover, each research finding only

represents particular types of small business, particular geography, and small sample size. The major drawback of most of these studies is that they fail to recognize the stages of development of the firm. Shuman et al. (1985)'s research findings indicate that planning processes have become more formal, structured, and participatory to assure continued organizational effectiveness as the companies have grown. Therefore, any research on formal planning practices in small business must incorporate the stages of development of the firm or at least specify at what stage of development the firms studied are.

Therefore, to assert that most firms did not engage in formal planning would be invalid because most research summarized here did not identify the stages of development of the firms studied. The reasons that the small business owners did practically no formal planning can be summarized as follows:

1. Time - Swamped by day-to-day operations, the small business owners cannot allocate their "valuable" time to planning.

2. Education - The small business owners lack some sophisticated skills required in planning. They see a need for planning but do not know how to go about using it.

3. Training - The small business owners lack some specialized expertise which is required in a planning

process.

4. Getting started - Unfamiliar with the planning process, the small business owners are hesitant to start planning.

5. Rigidities - The rigidities of the detailed plans largely offset the advantages of a small firm's flexibility and maneuverability.

6. Purpose - The small business owners do not see any purpose whatsoever for this management tool.

#### THE IMPACT OF PLANNING ON SMALL BUSINESS

Most writings in the area of strategic planning are prescriptive. They suggest many models and guidelines pertinent to planning of small firms. However, what research in this area lacks is the empirical base, in particular, the confirmation of the absence or presence of planning and the effects of planning on small business. The former was discussed in the previous section. The latter is the subject of this section. The main purpose is to assess the significance of the effects of planning on small business. In other words, is it worth an effort to undertake planning in small business?

Measurement of organizational effectiveness in small firms is required to assess an impact of planning on small business. Organizational effectiveness, in large measure, is determined by the ability of the firm to exploit its environment in the acquisition of scarce and valued

resources to sustain its functioning (Dollinger & Kolchin, 1986). The assessment of organizational effectiveness in small firms needs clarification. One major debate is between the use of organizational goals versus a systems approach for an accurate assessment of effectiveness (Robinson, 1982). Another debate centers around the use of "hard" measures (such as profit, sales, market share) versus "soft" measures (such as job satisfaction or social responsibility) in assessing effectiveness (Robinson, 1982). Most of the empirical studies that have examined the STRATEGIC PLANNING -> ORGANIZATIONAL EFFECTIVENESS relationship in small firms equate "effectiveness" with "success" (Robinson, 1983). Although "success" or "failure" (going out of business) may be conclusive measures of effectiveness, studies using such nonspecific criteria offer little help to the small firm manager who needs specific information (Robinson, 1983). Furthermore, they are of little use to the researcher interested in studying either existing small and growing firms or in examining multiple dimensions of organizational effectiveness in these firms (Robinson, 1983). Based on a "systems" approach, Friedlander and Pickle (1968) identified components of effectiveness as follows:

Societal components  
 community  
 government  
 customers  
 suppliers  
 creditors

Owner components  
 financial profit

Employees components  
 satisfaction with working conditions  
 satisfaction with financial reward  
 confidence in management  
 opinion about immediate supervisor  
 satisfaction with self-development

Based on the system of small firm effectiveness shown in Figure 2, Robinson (1983) claimed that only profitability and growth are required as surrogate measures of a small firm's effectiveness when the broader system or constituency approaches are adopted. Return on sales is chosen over return on investment which is a traditional measure of organizational efficiency because investment is not consistently and meticulously monitored and it has proven difficult to measure accurately in many small firms (Robinson, 1983). For small firm research, return on sales and sales growth offer readily available, reasonably accurate effectiveness measures that also appear to be operationally consistent with different frameworks for conceptualizing organizational effectiveness and compatible with the idea that organizational effectiveness should be assessed based on either implicit or implied goals of the firm (Robinson, 1983). Also agreed with these performance measures, Davig

(1986) argued that other profit measures, such as total income are of questionable validity because many owner-managed businesses understate taxable income. However, when Robinson (1983) who argued for only two performance measures: return on sales and sales growth later studied the relationship between stage of development and small firm planning and performance (Robinson et al., 1984), he used four performance measures: sales growth, return on sales, productivity (absolute increase in sales/employees) and percentage increase in the number of full-time equivalent employees as operationalized dimensions of organizational effectiveness. While comparing the company's current performance and operating characteristics with comparable figures for the same firm in previous years may track improvement or decline in performance over time, it offers no basis for evaluating the quality of its performance with regard to specific variables (Howell, Frazier & Stephenson, 1982). External benchmarks such as aggregate industry norms can be used; however, it is important to define the industry in terms of markets and competitive structure before gathering and then disseminating industry data, and to present enough information for adequate evaluation of the degree to which the data presented are representative of firms in the industry (Howell, Frazier & Stephenson, 1982).

Appendix 10 provides a summary of empirical studies, dealing with the impact of planning on small business. This summary is based on Robinson and Pearce (1984)'s summary of research examining the value of strategic planning in small firms. Since their summary of research was done in 1984, this summary is in fact an updated version of theirs. Unfortunately, it was not possible to have access to some of the original studies in Robinson and Pearce (1984)'s summary. For those studies which were inaccessible, the author merely had to accept their summary of research as it is and without any verification. On the other hand, for those studies which were accessible, the author did verify the summary by comparing the summary with the original studies. In this regard, the author discovered that a study originally conducted by Robinson (1979) was completely different from its summary of results appeared in Robinson and Pearce (1984)'s paper. Robinson (1979)'s study is not involved with the impact of the adoption of strategic planning and the resultant strategy on firm performance as summarized in Robinson and Pearce (1984)'s paper. Instead, it is about forecasting and small business, relating to the strategic planning process. As a result, this study was not included in Appendix 10. However, a summary of other studies which were done after 1984 was included.

From Appendix 10 of a summary of empirical studies,

dealing with the impact of planning on small business, we can infer the value of planning in small business as follows:

Most firms that used formal planning, i.e., structured strategic planning, outsider-based strategic planning, and advanced planning outperformed other firms. Evidence showed an improvement of firm performance in the following areas: 1) employment, 2) sales, 3) assets, 4) growth, and 5) profitability. However, there are a few contradictory results: Najjar (Robinson & Pearce, 1984)'s study reported that no significant correlations were found between "planning behaviors" and "perceived impact of sales/profits" or "satisfaction with sales/profits."; Orpen (1985)'s study found that the extent of long-range planning was unrelated to company performance, whether assessed by sales growth or ROAs; and Robinson and Pearce (1983)'s study indicated that formal planners did not outperform non-formal planners over a three-year time period. Other important findings are that firms with a long planning history outperformed firms with a short planning history and the improvement in effectiveness obtained by small firms that engage in strategic planning is not contingent on the stage of development. Also, two studies found that lack of planning was one of the major reasons for business failure.

In any case, we must be cautious in making

generalizations based on the research findings. The main reason is that each research is different from each other, especially research methodology and characteristics of the data. Moreover, in some cases, the definition of strategic planning is not clear as opposed to other types of planning. The author proposes to replicate the previous research which had high validity and reliability of methodology with different groups of data. Then, a more valid conclusion can be drawn with regard to the value of planning in general. Otherwise, a separate conclusion should be drawn for each type of small business: industry type, stages of development, and geographic type. It also goes without saying that this issue is applied to the research on the presence or absence of planning also.

CHAPTER 3  
RESEARCH HYPOTHESES

A hypothesis testing will be developed to determine whether or not the sample data support the hypotheses about the population listed below. In particular, the null hypothesis specifying that no relationship exists will be tested against each of the following hypotheses. A two-tail test will be used because the null hypothesis will be rejected if the test statistic lies in either of the two tails of the sampling distribution. The p-value which is the smallest value of alpha or Type I error (rejecting the null hypothesis when it is true) that would lead to rejection of the null hypothesis will be calculated.

Planning Practices in the United States and France

H1: The intensity of the planning practices sophistication for the United States and France are not equal.

Planning Practices and Organizational Effectiveness

H2: There is a significant relationship between the level of planning practices sophistication and organizational effectiveness.

Sales Growth in the United States and France

H3: The sales growth rates, on the average, for the United States and France are not equal.

Return on Sales in the United States and France

H4: The returns on sales, on the average, for the United States and France are not equal.

Planning Practices and Path to Ownership

H5: There is a significant relationship between the path to ownership and the level of planning practices sophistication.

Planning Practices and Sales Volume

H6: There is a significant relationship between the sales volume and the level of planning practices sophistication.

Planning Practices and Number of Years in Business

H7: There is a significant relationship between the number of years in business and the level of planning practices sophistication.

Planning Practices and Number of Employees

H8: There is a significant relationship between the number of employees and the level of planning practices sophistication.

## CHAPTER 4

### RESEARCH METHODOLOGY

The purpose of this chapter is to describe the research plan.

#### SUBJECTS

The subjects for this study were drawn from a population of small business owners and managers operating in paper and allied products industry in France and the United States. The industry represents the SIC Major Group 26 consisting of pulp mills; paper mills (except building paper mills); paperboard mills; paper coating and glazing; envelopes; bags (except textile bags); die-cut paper; paperboard; cardboard; pressed and molded pulp goods; sanitary paper products; stationery, tablets, and related products; converted paper; paperboard products; folding paperboard boxes; set-up paperboard boxes; corrugated and solid fiber boxes; sanitary food containers; fiber cans, tubes, drums, and similar products; and building paper and building board mills (Small Business Size Regulations, 1992). According to Barreyre (1984) and Fell (1981), to be considered a small business in France the number of employees must be under 500. Similarly, in the United States, Small Business Size Regulations (1987) rule that the number of employees must not exceed 500 to be categorized as small business in the

paper and allied products industry. Hence, small business in this study is defined as a company with the number of employees less than or equal to 500.

Sources of the target population of this study are as follows:

1. The United States 652 companies were retrieved from Standard & Poor's Corporation Database on CD-ROM, using SIC 26 for paper and allied products.

2. France 192 companies were compiled from different sources as follows:

- a) Kompass Annuaire Industriel, France, Entreprises. (1987) vol. 3-4, 53rd ed. Paris: S.N.E.I.
- b) France 30000. (1989) vol. 1-3, 10th ed. Paris: Dun & Bradstreet International France.
- c) L'Entreprise, L'Atlas 10000 Entreprises (1989, December).
- d) Classement des 6345 Premieres Societes Francaises, Europeennes et Mondiales. (1989, November).
- e) La Vie Economique du Sud-Ouest. (1988, July).
- f) Les 1000, les Palmares des Milles Premieres Entreprises Francaises. (1989, December-1990, January).
- g) Rapport d'Activite de l'Industrie Francaise des Papiers, Cartons et Celluloses. (1988).

h) Rapport d'Activite de l'Industrie Francaise  
des Papiers, Cartons et Celluloses. (1989).

#### RESEARCH DESIGN

The mailed questionnaire was selected as a method of scientific inquiry. The main reasons to use the mailed questionnaire in this study include the time and financial resources available for research, the large number of the target population, the wide geographical dispersion of the target population, and the nature of the research. Still (1974) argued for the use of the mailed questionnaire as follows:

The self-administered instrument, when considered against time and financial resources available for this research, promised the largest possible sample of a more broadly based population. It was the only practical way to achieve general evaluation of propositions.

However, Kerlinger (1986) stated that there are two drawbacks associated with the mailed questionnaire: possible lack of response and the inability to check the responses given. The degree of non-response can be attributable to the ability, literacy, knowledge, and willingness on the part of the individual to respond (Bracker, 1982). According to McDonagh and Rosenblum (1965), the mailed questionnaire may reveal representative responses in spite of the partial return from the ample of the universe selected because no significant differences were found by comparing results of mailed questionnaires

and subsequent structured interviews in a special study. To help overcome the possibility of a low response, the design and implementation of the mailed questionnaires in this study were carefully executed. In particular, the length of the mailed questionnaire was considered. Academic terms were avoided and a lengthy explanation and/or examples were given to clarify each concept if necessary. In addition, an appeal cover letter and a business reply mail envelope were sent with each questionnaire. Finally, a personalized follow-up letter and my business card consisting of both home addresses in the United States and Thailand were sent to each of the non respondents. Regarding the inability to check the responses given, Kerlinger (1986) referred to checking the validity and reliability of survey data. The topic of validity and reliability will be discussed later in this chapter.

#### QUESTIONNAIRE CONSTRUCTION

The English version questionnaire is shown in Appendix 11. The French version questionnaire as shown in Appendix 12, is a result of the following translation process:

1. The English version questionnaire was first translated into French by Mr. Philippe Chambadal, a French national, who is a graduate from Ecole des Hautes Etudes Commerciales, in Jouy-en-Josas, France (a prestigious

French business school which is considered "Harvard Business School" of France) and a manager at Reuter.

2. The French version questionnaire was then translated into English by Mr. Marc Matoussowsky, a French national, who is also a graduate from Ecole des Hautes Etudes Commerciales and Export Area Manager of Yves Saint Laurent.

3. The translated English version questionnaire was finally translated into French by Ms. Emmanuelle Poisson, a French national, who is a European Sales Consultant of Parfums et Cosmetiques International which produces Boucheron perfumes.

The main parts of the questionnaire were constructed from the following concepts:

#### Planning Practices Sophistication

Small business planning practices are viewed as a continuum of increasing sophistication. This concept has been operationalized by several planning scholars. Rhyne (1985) empirically investigated the relationship between corporate-level planning and information systems based on a continuum of planning system sophistication. Keats and Montanari (1987)'s model of stage of strategic sophistication shows the path to strategic complexity as ordered by a series of developmental stages. Lorange and Vancil (1976) described a developmental approach for a strategic planning system. Bracker (1982), Bracker and

Pearson (1986), and Bracker et al. (1987) studied planning process sophistication. Finally, Watts (1987) investigated small bank planning practices, ownership characteristics and performance by measuring planning practices sophistication. This study is based on Watts (1987)' view of small business planning practices sophistication as a combination of its level of focus and comprehensiveness of action.

Thompson and Strickland (1987) defined strategic management as the process whereby managers establish an organization's long-term direction, set specific performance objectives, develop strategies to achieve these objectives in the light of all the relevant internal and external circumstances, and undertake to execute the chosen action plans. To determine a firm's level of planning focus, five phases of tasks embedded in the strategic management process stipulated by Thompson and Strickland (1987) were gathered. These phases (Question # 1) include:

1) Defining the business and establishing a strategic mission (Parts a, b):

Part a defines a business in terms of 3 dimensions: 1) customer groups, or who is being satisfied; 2) customer needs, or what is being satisfied; and 3) the technologies used and functions performed, or how customer needs are satisfied.

Part b forces managers to think ahead and redirect the firm in response to the impact of future change. This action requires a good entrepreneurship.

2) Setting strategic objectives and performance targets (Part d):

Part d directs managers to convert the mission and directional course into specific objectives and performance targets. Both long-range and short-range objectives are necessary. The performance objectives must be measurable and contain a deadline for achievement.

3) Formulating a strategy to achieve the target objectives and performance (Parts f, g, h, i, j, k, l, m, n, o, p, q, r, s)

Part f guides managers to consider how to capture the opportunity, what kind of competitive strategy to use, and how to position the enterprise in light of industry conditions, competition, the strategies of rivals, and the enterprise's own situation by identifying market opportunities and industry attractiveness.

Parts g, h, i, j, k represent Michael E. Porter's Five Forces Model of Competition:

1) competitive forces arising from the availability of good substitutes which are competitively priced (Part g),

2) competitive forces and constraining pressures arising from the threat of entry (Part h),

3) competitive forces arising from suppliers' exercise of bargaining power and economic leverage (Part i),

4) competitive forces arising from customers' exercise of bargaining power and economic leverage (Part j),

5) each firm employs its own style of competitive strategy in an effort to jockey for position and gain a competitive edge (Part k).

Part l deals with the competitor analysis because a good strategy cannot be formulated in a competitive vacuum and rivals' strategies are highly interdependent.

Parts m, n, o, p represent SWOT analysis:

- 1) potential internal strengths (Part m);
- 2) potential internal weaknesses (Part n);
- 3) potential external opportunities (Part o);
- 4) potential external threats (Part p).

Parts q, r reflect ambitions, values, distinctive culture, attitudes toward risk, and personal vision of managers which usually have important influences on strategy.

Part s requires that managers develop strategic plans.

4) Implementing and executing the strategic plan  
(Parts u, v)

Part u is concerned with building a capable

organization because successful strategy execution depends greatly on good internal organization and competent personnel.

Part v forces managers to consider what budgets and programs are needed by each unit to carry out its plan and how to focus the energies of people on achieving organizationwide objectives as opposed to just carrying out their assigned duties.

5) Evaluating performance and reformulating the strategic plan and/or its implementation (Parts c, e, t, w, x)

Evaluating the strategic performance and making corrective adjustments in strategy and/or how it is being implemented in light of actual experience, changing conditions, and new ideas and opportunities are essential to the achievement of the performance objectives.

To assess the level of involvement with the activities, Watts (1987)' concept of comprehensiveness based on the works of Fredrickson (1984) and Fredrickson and Mitchell (1984) was adopted. Each planning task has an associated measure of comprehensiveness. A firm that is very comprehensive in dealing with the tasks might:

- 1) form a group of special members,
- 2) conduct extensive analysis,
- 3) allow unlimited expenses,
- 4) involve people with diverse backgrounds, and
- 5) consider all possible implications and options.

A firm that is not very

comprehensive in dealing with the tasks might rely on the ideas and experiences of one individual.

To establish the level of planning practices sophistication, the comprehensiveness scores for the planning tasks are summed. With twenty-four planning tasks each having five associated measures of comprehensiveness (scored from 0 to 5), the resulting index ranges from 0 to 120. A score of 0 would indicate no involvement in planning tasks, while a score of 120 would indicate a very comprehensive involvement in all planning tasks.

#### Organizational Effectiveness

As discussed in the impact of planning on small business in Chapter 2, the return on sales and the sales growth are the most appropriate surrogate measures of the organizational effectiveness for small business. Question # 14 asks the respondents to give the average return on sales within the past three years. Question # 15 asks the respondents whether the firm's annual sales have been growing, static, or declining within the past three years. In addition, Question # 16 asks the respondents whose firms have non static annual sales to give the average annual rate of sales growth or decline within the past three years.

#### Environmental Stability

The environment may be one of the factors which

mitigate the relationship between formal planning and organizational effectiveness (Frederickson, 1984; Frederickson & Mitchell, 1984). Duncan (1972) studied twenty-two decision groups in three manufacturing and three research and development organizations to identify the characteristics of the environment that contribute to decision unit members experiencing uncertainty in decision making. He identified two dimensions of the environment as follows:

1) The simple-complex dimension is defined as the number of factors taken into consideration in decision making.

2) The static-dynamic dimension is viewed as the degree to which these factors in the decision unit's environment remain basically the same over time or are in a continual process of change.

The results of his study indicate that individuals in decision units experiencing dynamic-complex environments experience the greatest amount of uncertainty in decision making and the static-dynamic dimension of the environment is a more important contributor to uncertainty than the simple-complex dimension. Decision units with dynamic environments always experience significantly more uncertainty in decision making regardless of whether their environment is simple or complex. The difference in perceived uncertainty between decision units with simple

and complex environments is not significant unless the decision unit's environment is also dynamic. The static-dynamic dimension is composed of two subdimensions as follows: 1) The degree to which the factors identified by decision unit members in the unit's internal and/or external environment are stable, that is, remain the same over time, or are in a process of change; and 2) The frequency with which decision unit members take into consideration new and different internal and/or external factors in the decision-making process (Duncan, 1972).

With a permission from Watts (1987), his questions to assess the bank's environmental stability based on Duncan (1972)'s concept as described above were used in this study. The numerical equivalents in questions # 3 and 4 are as follows:

Never-----1

Almost Never-----2

Sometimes-----3

Frequently-----4

Very Often-----5

The sum of the numerical equivalents for the two questions reflects a static-dynamic index. The continuum of the index ranges from 2 indicating a static environment to 10 representing a dynamic environment.

#### Paths to Ownership

As discussed in the definitions of small business in

Chapter 2, there is no uniform definition for the abstract, complex concept of entrepreneurship. Various definitions of entrepreneurship have been employed by a number of academicians. Question # 9 serves to assess not the entrepreneurship capability but paths to ownership of the small business owners. The question is based on Watts (1987)' degree of entrepreneurship continuum, with his permission, which is a modified version of the Cooper and Dunkelberg (1986)'s degree of entrepreneurship continuum as discussed in Chapter 2. Although Watts (1987) used this question to measure the degree of entrepreneurship, this author disagrees with him. The degree of entrepreneurship cannot be facilely assessed by this simple question. However, this question is useful to the search of paths to ownership.

#### Survey Implementation

To secure the necessary response to the questionnaire, each survey questionnaire was mailed with a personalized cover letter (Appendix 13) addressing directly to the small business's owner or manager and a business reply mail envelope. Two months later, a follow-up cover letter (Appendix 14), a survey questionnaire, the author's business card with both addresses in the United States and Thailand, and a business reply mail envelope were sent to all non-respondents. In addition, a personalized letter was

sent to each respondent who had given an incomplete response and urge him to complete the omitted ones.

## DATA ANALYSIS

### Data Scales

The type of data being measured as well as the purpose of the statistical inference dictate which statistical technique should be used. Data scales can be classified into four categories as follows:

1. Nominal Scale Numbers are assigned to merely name or label differences in kind and, thus, can serve the purpose of classifying observations about qualitative variable into mutually exclusive groups (Kohler, 1988). For example, 1 represents male and 0 represents female.

2. Ordinal Scale Numbers by their size order or rank observations on the basis of importance, while intervals between the numbers, or ratios of such numbers, are meaningless (Kohler, 1988). For example, the ranking of professor, associate professor, and assistant professor can be represented by 2, 1, and 0.

3. Interval Scale Numbers by their size rank observations in order of importance and between which intervals or distances are comparable, while their ratios are meaningless (Kohler, 1988). For example, the Fahrenheit scale is used to measure the temperature.

4. Ratio Scale Numbers by their size rank observations in order of importance and between which

intervals as well as ratios are meaningful (Kohler, 1988). For example, it is meaningful to rank sales data on the basis of sales figures.

### Hypothesis Testing

A hypothesis testing was used to determine whether or not the sample data support the hypotheses about the population in the study. In particular, the null hypothesis specifying that no relationship exists was tested against each alternative or research hypothesis. A two-tail test was used because the null hypothesis would be rejected if the test statistic lay in either of the two tails of the sampling distribution. The p-value which is the smallest value of alpha or Type I error (rejecting the null hypothesis when it is true) that would lead to rejection of the null hypothesis was calculated and compared with the predetermined alpha or the significance level of the test.

### Significance Level of the Test (Alpha)

A researcher must fix at some desired level the probability of making a Type I error or the significance level before the decision rule for the hypothesis testing is determined (Newbold, 1988). We would like the significance level to be as small as possible, but unfortunately there is an inverse relationship between the significance level and the probability of concluding that the null hypothesis is true when in fact it is false

(Keller, Warrack, & Bartel, 1990). Whoever undertakes to test a hypothesis must make a subjective decision here; he or she must decide which value of the test statistic is unlikely enough when the null hypothesis is true that it can be viewed as sufficient evidence to reject the null hypothesis and embrace the alternative one (Kohler, 1988). Howell (1982) stated:

Such cut-and-dried rules are inappropriate and more attention should be paid to the probability value itself. In other words, the classical approach (using a 0.05 rejection level) would declare  $p = 0.051$  and  $p = 0.150$  to be (equally) "nonsignificant" and  $p = 0.048$  and  $p = 0.00003$  to be (equally) "significant." The alternative view  $p = 0.051$  as "nearly significant" or "marginally significant" ("marginal significance" often refers to  $0.10 \geq p \geq 0.05$ ) and to think of  $p = 0.0003$  as "very significant."

According to Cryer and Miller (1991), the prevailing practice is to choose significance levels more or less by convention, the most common choices being 0.10, 0.05, and 0.01. However, not only Skipper, Guenther, and Nass (1967) considered 0.05 as the most sacred significance level in social science, but Lewis and Lewis (1980) and Rosenthal (1979) also claimed that from a practical perspective, the 0.05 significance level could differentiate reliable from unreliable results and publishable from unpublishable research. Sauley and Bedeian (1989), who argued that the frequent use of the 0.05 level as the maximum acceptable probability for determining statistical significance is too often a matter of custom rather than independent

thought, contended that the selection of a significance level should be treated as one more research parameter. In particular, the selection depends on sample size, effect size, measurement error, null hypothesis/practical consequences of rejecting, coherence of underlying theory, degree of experimental control, and robustness (Sauley & Bedeian, 1989). However, from a practical perspective, a researcher cannot arrive at a single value for the significance level which could satisfy the above criteria. Based on the arguments for the 0.05 significance level stated earlier, the author decided to use 0.05 for the significance level in this study. Moreover, Kerlinger (1986) stated that the 0.05 level which is approximately 2 standard deviations from the mean is considered significant.

#### Pearson Product Moment Coefficient of Correlation (r)

The coefficient of correlation measures the strength of the relation between two variables, ranging from -1.0 to +1.0. When the value equals +1.0, all data points fall exactly on an upward-sloping straight line. When the value equals -1.0, all data points fall exactly on a downward-sloping straight line. When the value equals 0, a scattering of points shows no linear relationship between the two variables. The square of the coefficient of correlation is equivalent to the coefficient of determinations ( $r^2$ ).  $r^2$  measures the proportion of

the variability of  $y$  that is explained by the variability of  $x$  (Keller, Warrack, & Bartel, 1990). When two variables are highly correlated ( $|r|$  is close to +1.0), it does not necessarily mean that one causes the other (Schlotzhauer & Littell, 1987). Moreover, the coefficient of correlation does not tell the form of the relation between the two variables.

### Regression Analysis

It has several general objectives: to determine whether relationships exist between variables, to describe the relationships if they exist, to assess the accuracy in the descriptions of the relationships, and to assess the importance of each of the predictors in a relationship (Cryer & Miller, 1991). The simple regression model is expressed as follows:

$$Y_i = B_0 + B_1X_i + e_i$$

where:

$Y_i$  is the dependent, explained, consequences, response, or predicted variable or the regressand

$B_0, B_1$  are unknown regression parameters

$X_i$  is the independent, explanatory, conditions, or predictor variable or the regressor

$e_i$  is the error term resulting from the differences between the observed values of the  $Y_i$ 's and those expected from the model

In order to infer accurately the true population parameters,  $B_0$  and  $B_1$ , from the sample parameters, the following assumptions are made (Lewis-Beck, 1980):

1. No specification error.
  - a. The relationship between  $X_i$  and  $Y_i$  is linear.
  - b. No relevant independent variables have been excluded.
  - c. No irrelevant independent variables have been included.
2. No measurement error.

The variables  $X_i$  and  $Y_i$  are accurately measured.

3. The assumptions concern the error term,  $e_i$ :
  - a. Zero mean:  $E(e_i) = 0$ .

For each observation, the expected value of the error term is zero.
  - b. Homoscedasticity:  $E(e_i^2) = \sigma^2$ .

The variance of the error term is constant for all values of  $X_i$ .
  - c. No autocorrelation:  $E(e_i e_j) = 0$  ( $i \neq j$ ).

The error terms are uncorrelated.
  - d. The independent variable is uncorrelated with the error term:  $E(e_i X_i) = 0$ .
  - e. Normality.

The error term,  $e_i$ , is normally distributed.

Most methods for detecting violations of assumptions are based on the analysis of the estimated errors which are the residuals (residual = observed - predicted) (Freund & Littell, 1991; Schlotzhauer & Littell, 1987). Observations that do not appear to fit the model, often called outliers, can be quite troublesome since they can bias parameter estimates and make the resulting analysis less useful (Freund & Littell, 1991). The traditional tool for detecting outliers as well as specification errors consists of examining the residuals (Freund & Littell, 1991). In particular, a scatterplot of the residuals or standardized (studentized) residuals (obtained by dividing residuals by their standard errors, which follow Student's t distribution) versus the predicted values, or the independent variables can be used to disclose outliers. If the data are well represented by the regression model, the scatterplot should appear random. On the other hand, if only a small percent of residuals have a large value (either positive or negative) compared to the rest, these large residuals might represent outliers. Standardized residuals close to zero represent a well-fitted model without any outliers. According to Schlotzhauer and Littell (1987), values which are less than or equal to 2.0 in absolute value can easily occur by chance, between 2.0 and 3.0 in absolute value occur infrequently, and larger than 3.0 in absolute value

occur very rarely by chance alone. Different statisticians use different cutoff values to decide on an outlier. Chatterjee and Price (1977) claimed that when the model is correct, the standardized residuals tend to fall between 2 and -2 and are randomly distributed about zero. Freund and Littell (1991) used 2.5 in absolute value as a cutoff point for error degrees of freedom exceeding ten. Cryer and Miller (1991) asserted that a standardized residual larger than 3 in magnitude certainly is unusual and the corresponding case should be investigated for a special cause for this value. However, outliers are sometimes not readily detected by an examination of residuals because the least-squares estimation procedure tends to pull the estimated regression response towards observations that have extreme values in either x or y dimensions (Freund & Littell, 1991). Influence statistics can be used to resolve this difficulty. The basis is analyzing various estimates and statistics while omitting the observation in question in the estimation of the regression equation. One of the most popular statistics is called Cook's Distance which measures the difference between predicted value for the  $i$ th observation obtained by the equation estimated by all observations and the equation estimated from all observations except the  $i$ th, scaled and squared to make extreme values stand out more clearly (Cryer & Miller,

1991; Freund & Littell, 1991). Some authors suggested that cases with Cook's Distance larger than the median of an F distribution with  $k+1$  and  $n-k-1$  degrees of freedom should be investigated further with regard to their true influence on the regression analysis (Cryer & Miller, 1991).

The most commonly violated assumptions are those concerning the linearity of the model and the constancy of the error variance (homoscedasticity) (Chatterjee & Price, 1977). Plotting the raw data can be used to assess the linearity of the relationship. In addition, residual plots can detect nonlinearity of the model as well as heteroscedastic error variance (non constancy of error variance). Heteroscedastic error variance is evidenced by a diverging band as one moves along the abscissa, assuming that the residuals or standardized residuals are plotted on the ordinate. Transformations of the original data (i.e., logarithms, square roots, trigonometry, and reciprocals) may be necessary for several reasons: to linearize nonlinear theoretical relationship or nonlinear relationship as shown on residual plots and to ensure the normality and constancy of error variance (Chatterjee & Price, 1977).

#### Spearman Rank Correlation ( $r_s$ )

In such cases where one or both variables may be ordinal-scaled or an assumption of normality is violated,

we cannot employ the regression technique to analyze the relationship between the two variables (Keller, Warrack, & Bartel, 1990). The Spearman rank correlation ( $r_s$ ) can be used to rank sets of measurement data when we have serious reservations about the nature of the underlying scale of measurement (Howell, 1987). The hypothesis test involves testing the null hypothesis of no association between a pair of random variables (Newbold, 1988).

#### T-Test

The t-test can be used to test the means for two independent groups as follows: the means for two independent groups are equal (null hypothesis) versus the means are not equal (alternative hypothesis). There are three assumptions for this test: (1) observations are independent, (2) observations for each group are a sample from a population with a normal distribution (only interval or ratio variables are used), (3) variances for the two independent groups are equal (Schlotzhauer & Littell, 1987).

#### Wilcoxon's Rank-Sum Test

This test often is thought of as the distribution-free analogue of the t test for two independent samples although it tests a slightly different, and broader, null hypothesis that the two samples were drawn at random from identical population (not just populations with the same mean) (Howell, 1987).

Thus, rejection of the null hypothesis is generally interpreted to mean that the two distributions had different central tendencies, but it is possible that rejection actually resulted from some other differences between the populations (Howell, 1987). Since the only assumption usually required for this test is that of independent observations, this test can be used with ordinal, interval, and ratio variables (Schlotzhauer & Littell, 1987).

#### Analysis of Variance (ANOVA)

ANOVA is a statistical technique specially designed to test whether the means of more than two quantitative populations are equal (Kohler, 1988). From the independent simple random sample data, two independent estimates of what is assumed to be the common variance,  $\sigma^2$ , of the population are developed: the first estimate is based on the variation among the sample means and it is an unbiased estimate of  $\sigma^2$  only if the population means are in fact equal; the second estimate is based on the variation of individual sample observations within each sample and is a weighted average of the individual sample variances which always provide an unbiased estimate of  $\sigma^2$  (Kohler, 1988). The ratio of the two estimates will be close to 1 if, and only if, the population means are equal to each other (Kohler, 1988). The F-statistic which is the ratio of the two

estimates can be used to test the null hypothesis of equal population means. However, the following assumptions for ANOVA are required (Schlotzhauer & Littell, 1987):

1. Observations are independent. The measurement for one item cannot affect the measurement for another item.

2. Observations are sampled from a normal distribution. If there are differences between groups, there may be a different normal distribution for each group. Since the data need to be observations from a normal distribution, the measurement variable needs to be interval or ratio.

3. Groups have equal variances.

#### RELIABILITY AND VALIDITY ASSESSMENT OF THE QUESTIONNAIRE

##### Reliability

Reliability is the degree of repeatability and consistency of empirical measurements (Zeller & Carmines, 1980). Four basic methods for estimating the reliability of empirical measurements are as follows:

1. Test-retest reliability The same test is given to the same people after a period of time, and a test-retest reliability coefficient is produced by correlating the pairs of scores (Carmines & Zeller, 1979; Youngman, 1979). A limitation is that experience in the first testing usually will influence responses in the second testing (Carmines & Zeller, 1979).

2. The alternative-form method An alternative form of the same test is given to the same people after a period of time, usually two weeks to provide time for variations in ability and attitude to occur (Carmines & Zeller, 1979; Nunnally, 1967). The practical limitation is that it can be quite difficult to construct alternative forms of a test that are parallel (Carmines & Zeller, 1979).

3. The split-half methods The test is splitted into two comparable halves and the scores on both halves are correlated (Youngman, 1979). The correlation between the halves in the split-half methods will differ somewhat depending on how the total number of items is divided into halves (Carmines & Zeller, 1979).

4. Measures of internal consistency (equivalence) These procedures were developed to make use of all the variance and covariance information of the items and thus provide a unique estimate of reliability (Zeller & Carmines, 1980). By far the most popular of these reliability estimates is given by Cronbach's alpha which is essentially a measure of the degree of consistency within a test (Armor, 1974; Carmines & Zeller, 1979; Youngman, 1979; Zeller & Carmines, 1980). However, alpha equals reliability only if the items are strictly parallel or, at least, essentially tau-equivalent (Parallel items have identical true scores, whereas tau-equivalent items

have true scores that differ pairwise by no more than an additive constant.); otherwise, the value of alpha merely sets a lower bound on the reliability (Zeller & Carmines, 1980). Armor (1974) suggested that there are two conditions under which alpha may not provide a good estimate of reliability: the items may measure a single property but do so unequally or if the items measure two or more independent properties either equally or unequally. According to Zeller and Carmines (1980), the very conditions that limit the usefulness of alpha as a reliability estimate suggest that reliability estimation based on factor analysis would be relevant and appropriate. Reliability coefficients based on factor analysis include theta which is based on the principal component analysis and omega which is based on the common factor analysis. Greene and Carmines (1979) claimed that omega will in general give a closer estimate of reliability than will alpha and will never give a worse estimate. Only omega will be discussed subsequently because the common factor analysis will be used in this study. Reasons for choosing the common factor analysis will be explained later.

In general, omega is defined as followed (Heise & Bohrnstedt, 1970; Zeller & Carmines, 1980):

$$\Omega = 1 - \frac{\sum \sigma_i^2 - \sum \sigma_i^2 h_i^2}{\sum \sum \sigma_{x_i x_j}}$$

where  $\sigma_i^2$  = variance of the *i*th item

$h_i^2$  = communality of the *i*th item

$\sum \sum \sigma_{x_i x_j}$  = sum of the covariances among  
the items

If one is working with correlations, the formula reduces to (Zeller & Carmines, 1980)

$$\Omega = 1 - \frac{a - \sum h_i^2}{a + 2b}$$

where  $a$  = number of indicants

$b$  = sum of the correlations among  
the indicants

Several methods for estimating factor loadings exist, and since these methods do not all yield exactly the same factor structure, the estimate of omega will

differ from one method to another (Heise & Bohrnstedt, 1970). Since there is no one best factoring method, it cannot be argued on a mathematical basis that any one of the omega estimates is better than the other (Heise & Bohrnstedt, 1970). In general, the greater the number of factors extracted, the greater the omega coefficient (Armor, 1974). Since experienced social scientists have acquired a high tolerance for ambiguity, the variant properties of omega may not be viewed as serious ones (Armor, 1974).

For the United States data, the reliability of the questionnaire is equal to 0.96 where  $a = 24$ ,  $\sum h_i^2 = 14.146358$ , and  $b = 112.41262$ . The calculations were based on the results from the factor analysis performed by the SAS program as shown in Appendix 15.

For the French data, the reliability of the questionnaire is equal to 0.95 where  $a = 24$ ,  $\sum h_i^2 = 15.489085$ , and  $b = 76.26234$ . The calculations were based on the results from the factor analysis performed by the SAS program as shown in Appendix 16.

The reliability estimates of both the United States and French data are above 0.9, reflecting the high interitem correlations among the items. As a result, this questionnaire has a high degree of reliability.

### Validity

Validity is the extent to which any measuring

instrument measures what it is intended to measure (Carmines & Zeller, 1979). Many different types of validity will be discussed as follows:

1. Criterion-Related Validity Criterion-related validity concerns the correlation between a measure and some criterion variable on interest (Zeller & Carmines, 1980). There are two types of criterion-related validity: 1) Concurrent Validity - it is assessed by correlating a measure and the criterion at the same point in time if the criterion exists in the present; 2) Predictive Validity - it concerns a future criterion which is correlated with the relevant measure (Carmines & Zeller, 1979). In many situations, there are no criteria against which the measure can be reasonably evaluated, and the more abstract the concept, the less likely one is to discover an appropriate criterion for assessing a measure of it (Carmines & Zeller, 1979; Nunnally, 1967; Zeller & Carmines, 1980).

2. Content Validity Content validity depends on the extent to which an empirical measurement reflects a specific domain of content (Carmines & Zeller, 1979). Since the acceptance of the universe of content as defining the variable to be measured is essential in content validity (Carmines & Zeller, 1979), it is important to construct items in the questionnaire that reflect the full domain of content that is relevant to the

study of planning. However, it is exceedingly difficult to achieve this goal. Moreover, there are no agreed-upon criteria for establishing whether, in fact, a measure has attained content validity (Zeller & Carmines, 1980).

3. Face Validity It is concerned with whether or not the content of a test looks appropriate or good to those people taking or using the test (Tyler & Walsh, 1979). Since it simply pertains to the appropriateness, the relevance, and the attractiveness of the items of the test, it tells us nothing about what a test in fact measures (Tyler & Walsh, 1979). Too often researchers use the terms face validity or content validity to give unjustified credibility to a procedure involving little more than glancing over a test and deciding that 'Everything looks OK to me' (Youngman 1979).

4. Internal Consistency Validity It determines if the items of a test discriminate in the same direction as the total score of the test by comparing the performance of the highest scorers on the entire test and the lowest scorers across each of the test item and eliminating the items which are not passed by a reasonable percentage of the high scorers (Tyler & Walsh, 1979). However, it does nothing to improve a test's objective validity (Tyler & Walsh, 1979).

5. Interpretive Validity It is concerned with the accuracy with which a test is interpreted; however, little

work has been done with the notion of interpretive validity (Tyler & Walsh, 1979).

6. Construct Validity Construct validity is concerned with the extent to which a particular measure relates to other measures consistent with theoretically derived hypotheses concerning the concepts (or constructs) that are being measured and it involves the following steps: 1) the theoretical relationship between the concepts themselves must be specified.; 2) the empirical relationship between the measures of the concepts must be examined.; 3) the empirical evidence must be interpreted in terms of how it clarifies the construct validity of the particular measure (Carmines & Zeller, 1979). According to Campbell and Fiske (1959), construct validity is also viewed as a combination of convergent and discriminant validity. In other words, in demonstrating construct validity we must show that the questionnaire meets theoretical expectations and is associated with variables with which it should be reasonably correlated (convergent validity) while at the same time it is not related to other variables with which it should not be reasonably correlated (discriminant validity) (Tyler & Walsh, 1979). Construct validity is the most appropriate and generally applicable type of validity used to assess measures in the social sciences (Zeller & Carmines, 1980).

Unfortunately, the concept of planning

sophistication lacks theoretically derived hypotheses which can be used to evaluate the construct validity of the measure of planning sophistication. According to Zeller and Carmines (1980), construct validation ideally requires a pattern of consistent findings involving different researchers across a significant portion of time and with regard to a variety of diverse but theoretically relevant variables, and only if and when these conditions are met can one speak with confidence about the construct validity of a particular measure. Therefore, it is impossible to validate a measure of planning sophistication in this sense. Instead, both content validity and face validity were applied in measuring the concept of planning sophistication. Constructing the items of planning sophistication based on Thompson and Strickland (1987)'s strategic management model, which is fundamentally similar to other academicians' models as discussed in the normative planning structure and framework of Chapter 2, led to the content validity of the measure of planning sophistication because the items reflect the full domain of content of the concept. In addition, the questionnaire was reviewed by several academicians in the area of strategic management. A list of the academicians are shown in Appendix 17. The results of the reviews not only supported the content validity but also assured the face validity of the measure.

## FACTOR ANALYSIS

Factor analysis, introduced in the early 1900s by Charles Spearman and Karl Pearson, is a variety of related techniques designed to make observed data more readily interpretable by analyzing interrelationships among variables in such a way that the variables can be described adequately and conveniently by a group of basic categories, called factors, smaller in number than the original variables (Zeller & Carmines, 1980). There are many different factor analysis models, depending on initial factoring such as principal component analysis, maximum likelihood method, least squares method, image analysis, and Alpha factoring. The most basic distinction is as follows:

### 1. Common factor analysis

It is based on the principle that there are two basic components of the variance of a variable: common variance (that proportion of the total variance that an item shares with the other variables in the analysis) and unique variance (both of variance that is specific to a particular variable and random error variable) (Zeller & Carmines, 1980). The objective of common factor analysis is to define the factors that arise only from the common variance components of the variables (Zeller & Carmines, 1980).

## 2. Principal components analysis

Since it is concerned with the total variance of a variable, it does not differentiate between common and unique variance, and it treats all variance as common variance (Zeller & Carmines, 1980).

According to Jolliffe (1986), it does not really make sense to ask whether principal components analysis is 'better than' factor analysis or vice versa, because they are not direct competitors. While principal components analysis concentrates on explaining the diagonal elements of the covariance matrix, factor analysis focuses on the off-diagonal elements of the covariance matrix (Jolliffe, 1986). However, if we are interested mainly in accurate description of the domain covered by the variables, we use common factor analysis (Cureton & D'Agostino, 1983). According to Cattell (1978), principal components analysis has properties useful to some mathematical procedures, but typically the components have no relation at all to defensible concepts of scientific entities. This criticism agrees with Jackson (1983)'s comment: the method is a purely mathematical one; it does not involve an underlying model of the world. Thus, common factor analysis was used to analyze interrelationships among variables of the measures of planning sophistication in this study.

### The specification of the number of factors

The final factor pattern depends on the reduced number of factors. The general principle is to be sure to include as many factors as are likely to contribute significantly to the communality (Jackson, 1983). A more precise guideline for an interpretable factor-loading matrix proposed by Crawford (1975) is as follows:

a) It should have a small number of factors because, other things being equal, the factor matrix with the fewest factors is the most parsimonious.

b) The factors should account for a large amount of the observed variance because the more variance that is accounted for, the more complete is the description of the original variables.

c) Each column should have a large number of near-zero loadings because the more near-zero loadings, the more parsimonious is the description of the factor.

d) Each factor should have several high loadings in order to make it interpretable.

There are many theoretical and analytical criteria to determine the number of factors:

1. Significance Tests These tests include Bartlett test (Bartlett, 1950, 1951) which is based on chi-square approximation and Bargman test which is a modification of Bartlett test (Cureton & D'Agostino, 1983). While Cattell (1958) and Linn (1968) stated that Bartlett test is

applicable to principal components solutions, Mulaik (1972) asserted that the test requires some rather stringent assumptions which are more compatible with a common factor analysis model than with the principal components model. Assuming that the variables have a multivariate normal distribution, Bargman test applies strictly only to factoring by the maximum-likelihood method (Bargman & Brown, 1961; Cureton & D'Agostino, 1983). Monte Carlo experiments usually show that the maximum likelihood criterion is most appropriate when applied to known population models without substantively insignificant minor factors (other influences outside the area of interest) (Kim & Mueller, 1978a). Moreover, application of the method has shown that for a large sample with many variables, the number of factors retained tends to be much larger than the number of factors the researcher is willing to accept (Kim & Mueller, 1978a).

2. Scree Test The test is based on Cattell (1966)'s scree graph which is a plot of the size of latent roots (sometimes called eigenvalues or characteristic roots or proper values (Cureton & D'Agostino, 1983)) versus the number of factors. A plot falls first in a steep curve but then straightens out in a line which runs with only trivial and irregular deviations from straightness to the  $n$ th factor, and this straight end portion, called the scree - from the straight line of rubble and boulders

which forms at the pitch of sliding stability at the foot of a mountain, represents a "rubbish" of small error factors (Cattell, 1966). The rule is to look for the point beyond which the scree graph defines a more-or-less straight line, not necessarily horizontal and take the first point on the straight line to be the last factor to be retained (if there are two or more straight lines formed by the lower eigenvalues, then cut-off is taken at the upper end of the left-most straight line) (Jolliffe, 1986). An alternative to the scree graph, which is popular in meteorology, is to plot logs of eigenvalue, rather than eigenvalues, against the number of factor; this is known as the log-eigenvalue (or LEV) diagram - see Craddock & Flood (1969) (Jolliffe, 1986). Some Monte Carlo studies indicate that the scree test is often superior to others where there are minor factors (other influences outside the area of interest) and the interests is in locating only major common factors (the area of phenomena of interest to the experimenter) (Kim & Mueller, 1978a; Tucker, Koopman, & Linn, 1969). In addition, Cureton & D'Agostino (1983) asserted that when the scree test is clear, it is probably the best single test for the number of salient factors. However, some, like Kaiser (1970), argued that this "root-staring" criterion is often very subjective because it is not uncommon to find more than one major break in the root-graph and there is no

unambiguous rule to use (Kim & Mueller, 1978a).

3. Eigenvalue Specification Some factor analysts, most notably Kaiser (1970), recommended retaining as salient all factors corresponding to eigenvalues greater than unity, and discarding all those with lower eigenvalues (Bennett & Bowers, 1977; Cureton & D'Agostino, 1983; Mulaik, 1972). Kaiser (1970)'s concept is based on Guttman's weakest lower bound on the number of factors (Rummel, 1970). According to Kim and Mueller (1978a), this simple criterion seems to work well, in the sense that it generally gives results consistent with researchers' expectations, and it works well when applied to samples from artificially created population models. In a population correlation matrix, such a criterion will always establish a lower-bound for the number of common factors (Kim & Mueller, 1978a). According to Cattell (1978), the Kaiser-Guttman test of stopping at a root of 1.0 has been shown in extensive empirical trials on plasmodes (i.e., cases where the number of factors is first known by a physical example or by writing out a factor matrix with large and trivial factors and working backward from it to the correlation matrix) to underestimate when there are few variables and more seriously to overestimate with many. He also claimed that the scree test, by a ratio of 3 hits to 1, is more dependable than the Kaiser-Guttman test. Criticizing that

the critical eigenvalue varies considerably with the number of variables  $n$ , Cureton and D'Agostino (1983) proposed instead the rule: the last salient factor is the last one whose eigenvalue exceeds  $(n \cdot 6)/15$ . However, they pointed out that even with this modification the rule is less dependable than most of the others. Another related eigenvalue criterion is that of retaining vectors with eigenvalues greater than zero when the reduced correlation matrix (with squared multiple  $R$ s in the main diagonal) is decomposed (Kim & Mueller, 1978a). On the other hand, Harman (1976) suggested that the factorization process should be stopped when the sum of the eigenvalues is equal to the sum of the estimated communalities.

4. Criterion of Substantive Importance (Kim & Mueller, 1978a) This criterion focuses directly on what should be considered a minimum contribution by a factor to be evaluated as substantively significant (Kim & Mueller, 1978a). Bennett and Bowers (1977) considered only those factors which account for more than 10 percent of the total variance by calculating the proportion of variance attributed to the factor as follows:

$\% \text{ variance extracted} = (\text{latent root}/\# \text{ of variables}) \times 100$

They claimed that when the number of variables is less than 10, Kaiser's criterion of retaining those factors with eigenvalue larger than one is more likely to reject a factor as non-significant than their criterion. While

there is no difference between the two criteria when the number of variables is about 10, Kaiser's criterion becomes less stringent when the number of variables grows larger. Crawford (1975) recommended that a factor matrix should have few factors, account for a large proportion of the overall variance, and have at least three high loadings per factor in conjunction with a large number of near zero loadings. Mulaik (1972)'s rule of thumb is to retain only enough principal components to account for, say, 95 percent of the total variance by cumulatively summing the descending series of eigenvalues until the sum divided by the number of variables equals .95 or greater. While the major disadvantage of the criterion of substantive importance is that it uses a subjective criterion, the obvious advantage is that the researcher who is not familiar with the properties of eigenvalue decomposition of a matrix may rely on a measure of relative magnitude which appears easier to interpret (Kim & Mueller, 1978a).

5. Examination of the Residual Correlations The matrix is factored until the residual correlations are due to random error or until the residuals become nonsignificant. Cattell (1952) reviewed and evaluated 11 criteria. Harman (1976)'s simple statistical test is that if the standard deviation of the series of residuals is less than  $1/(N^{0.5})$  (a sample of  $N$  observations), it may

be inferred that there are no further significant linkages between variables. Tucker's Phi is developed to test whether or not there is a significant decrease in the size of the residual values from one matrix to the next (Fruchter, 1954).

6. An Index of Interpretability Crawford (1975) developed an objective, noninferential index for determining the number of interpretable factors; however, further research should extend the usefulness of this approach.

7. Examination of Factor Matrix Cureton and D'agostino (1983) examined the over-factored factor matrix, with  $n/2$  or  $(n-1)/2$  factors (where  $n$  is the number of variables), or all factors corresponding to positive eigenvalues if this number is less. In general, the common-factor loadings are a little higher for highly reliable variables than for very unreliable variables. Based on this fact, Cureton and D'Agostino (1983) stated the following rules:

a. We can usually require that enough factors of  $F$  be retained to include the highest loading in every row, if this loading is above .20.

b. If the first  $m$  columns of  $F$  include both the highest and second highest loadings in every row,  $m$  factors are likely to be enough or more than enough.

c. If a given column contains even one loading as

high as  $\pm .40$ , or as many as 3% of its loadings as high as  $\pm .30$ , this column and all previous columns of F should usually be retained. This rule is weakened if, in every row containing such a loading, the highest and second highest loadings are in previous columns.

d. If as many as 10% to 20% of the loadings in a column are as high as  $\pm .20$ , with at least one or two as high as  $\pm .25$ , this column and all previous columns should usually be retained.

e. Enough columns should be retained to include in almost every row a sum of absolute values of loadings at least twice the sum in the columns not retained, provided the total number of columns is  $n/2$  or  $(n-1)/2$  or all columns corresponding to positive eigenvalues.

Most writers on factor analysis agreed that there is no simple answer to the problem of how many factors to extract (Youngman, 1979). As a way to protect oneself from accepting results which are dubious, a general rule-of-thumb is to try to combine various rules, accept only those conclusions that are supported by the ultimate convergence of many diverse empirical findings, and consider others as tentative hypotheses (Harris, 1967; Kim & Mueller, 1978a; Rummel, 1970).

Since the SAS program used to perform common factor analysis provides a readily available information on the scree test and eigenvalues, the specification of the

number of factors to be retained in this study was based on both methods which converged.

Originally, there are twenty-four factors constituting the strategic planning as shown in the question # 1, parts a-x (see Appendix 11). Performing a factor analysis on the United States data reduced the twenty-four factors to four factors as follows (see Appendix 15 where P1-P24 represent Parts a-x in the SAS program):

Factor 1 consists of the following parts (listed in the decreasing order of the loadings):

P21 or Part u represents the implementation of the chosen strategy.

P4 or Part d represents the establishment of the objectives.

P22 or Part v represents the allocation of resources in the implementation phase.

P24 or Part x represents the evaluation and feedback control of the implemented strategy.

P20 or Part t represents the review and reformulation of the current strategy if necessary.

P23 or Part w represents the review and modification of the implementation of the chosen strategy if necessary.

P5 or Part e represents the revision of the objectives if necessary.

The aggregation of the seven parts above reflects a combination of three phases in Thompson and Strickland (1987)'s strategic management function: Phase 2 - Translating the mission into specific long-range and short-range performance objectives, Phase 4 - Implementing and executing the chosen strategy efficiently and effectively, and Phase 5 - Evaluating performance, reviewing the situation, and initiating corrective adjustments.

Factor 2 consists of the following parts (listed in the decreasing order of the loadings):

P11 or Part k represents the identification of the competitive forces created by the strategic moves and countermoves of rival firms.

P8 or Part h represents the identification of the potential entry of new competitors.

P7 or Part g represents the identification of the competitive intrusions and threats from the substitute products.

P12 or Part l represents the analysis of major competitors.

P10 or Part j represents the identification of the economic power and bargaining leverage of customers.

P9 or Part i represents the identification of the economic power and bargaining leverage of

suppliers.

P16 or Part p represents the identification of the company's potential external threats.

P19 or Part s represents the formulation of strategies and selection of the most suitable one.

The aggregation of the eight parts above describes Michael E. Porter's five forces model of competition, the identification of external threats which includes the analysis of major competitors, and Thompson and Strickland (1987)'s Phase 3 of the strategic management function: Crafting a strategy to achieve the targeted performance.

Factor 3 consists of the following parts (listed in the decreasing order of the loadings):

P3 or Part c represents the redefining of the mission if necessary.

P2 or Part b represents the defining of contingency missions in light of unpredictable future.

P1 or Part a represents the defining of the mission.

P6 or Part f represents the identification of market opportunities and industry attractiveness.

P18 or Part r represents the identification of the corporate culture.

P17 or Part q represents the identification of the ambitions, values, attitude toward risk,

business philosophies, and personal vision of the owner(s).

The aggregation of the six parts above illustrates Thompson and Strickland (1987)'s Phase 1 of the strategic management function: Developing a concept of the business and forming a vision of where the organization needs to be headed, followed by the identification of market opportunities, industry attractiveness, the corporate culture, and the characteristics of the owner(s).

Factor 4 consists of the following parts (listed in the decreasing order of the loadings):

P13 or Part m represents the identification of the company's potential internal strengths.

P14 or Part n represents the identification of the company's potential internal weaknesses.

P15 or Part o represents the identification of the company's potential external opportunities.

The aggregation of the three parts above portrays 3 parts of the SWOT analysis: Strengths of the company, Weaknesses of the company, and Opportunities for the company.

Performing a factor analysis on the French data reduced the twenty-four factors to six factors as follows (see Appendix 16 where P1-P24 represent Parts a-x in the SAS program):

Factor 1 consists of the following parts (listed in

the decreasing order of the loadings):

P4 or Part d represents the establishment of the objectives.

P20 or Part t represents the review and reformulation of the current strategy if necessary.

P5 or Part e represents the revision of the objectives if necessary.

P23 or Part w represents the review and modification of the implementation of the chosen strategy if necessary.

P3 or Part c represents the redefining of the mission if necessary

P21 or Part u represents the implementation of the chosen strategy.

The aggregation of the six parts above reflects Thompson and Strickland (1987)'s strategic management functions: Phase 2 - Translating the mission into specific long-range and short-range performance objectives, Phase 4 - Implementing and executing the chosen strategy efficiently and effectively, and Phase 5 - Evaluating performance, reviewing the situation, and initiating corrective adjustments.

Factor 2 consists of the following parts (listed in the decreasing order of the loadings):

P16 or Part p represents the identification of the company's potential external threats.

P18 or Part r represents the identification of the corporate culture.

P22 or Part v represents the allocation of resources in the implementation phase.

P19 or Part s represents the formulation of strategies and selection of the most suitable one.

P24 or Part x represents the evaluation and feedback control of the implemented strategy.

The aggregation of the five parts above illustrates elements from different phases of Thompson and Strickland (1987)'s strategic management function. In fact, Part p, Part r, and Part s belong to Phase 3 - Crafting a strategy to achieve the targeted performance. Part v belongs to Phase 4 - Implementing and executing the chosen strategy efficiently and effectively. Finally, Part x belongs to Phase 5 - Evaluating performance, reviewing the situation, and initiating corrective adjustments.

Factor 3 consists of the following parts (listed in the decreasing order of the loadings):

P7 or Part g represents the identification of the competitive intrusions and threats from the substitute products.

P6 or Part f represents the identification of market opportunities and industry attractiveness.

P15 or Part o represents the identification of the company's potential external opportunities.

P17 or Part g represents the identification of the ambitions, values, attitude toward risk, business philosophies, and personal vision of the owner(s).

The aggregation of the four parts above describes some elements of Thompson and Strickland (1987)'s Phase 3 of the strategic management function: Crafting a strategy to achieve the targeted performance. In particular, the threats from the substitute products, the market opportunities, the industry attractiveness, the potential external opportunities, and the characteristics of the owner(s) must be considered aggregately before formulating viable strategies.

Factor 4 consists of the following parts (listed in the decreasing order of the loadings):

P9 or Part i represents the identification of the economic power and bargaining leverage of suppliers.

P8 or Part h represents the identification of the potential entry of new competitors.

P12 or Part l represents the analysis of major competitors.

P11 or Part k represents the identification of the competitive forces created by the strategic moves and countermoves of rival firms.

P10 or Part j represents the identification of

the economic power and bargaining leverage of customers.

The aggregation of the five parts above represents four elements of Michael E. Porter's five forces model of competition. In addition, it contains the analysis of major competitors. Therefore, all these factors were grouped as external forces which could affect the formulation of viable strategies.

Factor 5 consists of the following parts (listed in the decreasing order of the loadings):

P2 or Part b represents the defining of contingency missions in light of unpredictable future.

P1 or Part a represents the defining of the mission.

The aggregation of the two parts above constitutes Thompson and Strickland (1987)'s Phase 1 of the strategic management function: Developing a concept of the business and forming a vision of where the organization needs to be headed.

Factor 6 consists of the following parts (listed in the decreasing order of the loadings):

P14 or Part n represents the identification of the company's potential internal weaknesses.

P13 or Part m represents the identification of the company's potential internal strengths.

The aggregation of the two parts above makes up the internal environmental scanning, namely the company's potential internal strengths and weaknesses.

The results from the factor analysis indicate that the majority of the reduced factors for both the United States and France corresponds to Thompson and Strickland (1987)'s strategic management function. According to Zeller and Carmines (1980), results from a factor analysis are useful in determining whether indicants supposedly measuring the same concept define the same factor; conversely, it shows whether indicants measuring different concepts define different factors. In this study, the results from the factor analysis show that indicants supposedly measuring the same concept do, in fact, define the same factor.

CHAPTER 5  
RESEARCH RESULTS

The response rates are shown in Table 1 as follows:

TABLE 1: RESPONSE RATES

U.S.A.

Target population	652	
Usable responses	105	16.10%
Planning	103	15.80%
Sales growth	95	14.57%
Return on sales	85	13.04%
Unusable responses	6	0.92%

FRANCE

Target population	192	
Usable responses	52	27.08%
Planning	52	27.08%
Sales growth	44	22.92%
Return on sales	43	22.40%
Unusable responses	3	1.56%

Within the usable responses, some of the questions were not answered. Therefore, there are discrepancies among the numbers of responses for planning, sales growth, and return on sales. The unusable responses represent those with the following responses: confidentiality and time consuming.

The SAS program was used to statistically analyze the research data.

Planning Practices in the United States and France

H1: The intensity of the planning practices sophistication for the United States and France are not equal.

The means of the level of planning practices sophistication for the United States and France were compared. The two-sample t-test was used to test the null hypothesis that the means for the two groups are equal against the alternative hypothesis that they are not equal. The results of the two-sample t-test are summarized in Table 2.

TABLE 2: T-test Procedure - Planning Practices for the U.S.A. and France

VARIABLE: PLAN

<u>NATION</u>	<u>N</u>	<u>MEAN</u>	<u>STD DEV</u>	<u>STD ERROR</u>	<u>MIN</u>	<u>MAX</u>
U.S.A.	103	3.1160	0.7384	0.0728	0.7500	4.7917
FRANCE	52	3.2460	0.5954	0.0826	1.9545	4.3750
<u>VARIANCES</u>	<u>T</u>	<u>DF</u>	<u>PROB &gt;  T </u>			
UNEQUAL	-1.1807	123.7	0.2400			
EQUAL	-1.1005	153.0	0.2728			

For  $H_0$ : Variances are equal,  $F' = 1.54$  DF = (102,51)

Prob >  $F' = 0.0900$

The p-value for Prob > F' is 0.0900, indicating that the variances between the level of planning practices sophistication in the United States and France are not significantly different at the 5% significance level. In addition, the p-value for the t-test is 0.2728, which is larger than 0.05. This indicates that the average levels of planning practices sophistication for the United States and France are not significantly different at the 5% significance level.

This result contradicts the alternative hypothesis (H1) that the means of the level of planning practices sophistication for the United States and France are not equal. In general, one would expect that the means for both countries are different because of the separate environments. Patriots in each country would formulate a different hypothesis. In particular, patriots in the United States would formulate the following alternative hypothesis: The mean of the level of planning practices sophistication for the United States is higher than the one for France, and vice versa for patriots in France. Consequently, this result contradicts the general belief. This may emanate from the fact that both the United States and France are industrialized nations with educated population. Small business owners in both countries have sufficient knowledge to plan, and, on the average, they have equal knowledge. From the United States

perspective, one may argue that the average level of planning practices sophistication should be higher than in France because the United States is the leader in business education. However, based on the author's experience as a former exchange student at Ecole des Hautes Etudes Commerciales, in Jouy-en-Josas, France and with French environments, the author asserts that most French graduates from business schools are more eager to start their own companies than the American counterparts. In other words, many French small business owners are equipped with business knowledge. It is true that the United States possesses a better asset in term of business education. Students with better business education in the United States are lured by high salaries from large companies. The rest works in small and medium size companies. Therefore, those who work in small business in both countries should have, on the average, the same level of business education which could be applied to the level of planning practices sophistication.

#### Planning Practices and Organizational Effectiveness

H2: There is a significant relationship between the level of planning practices sophistication and organizational effectiveness.

First, the Pearson product moment correlation coefficient between the average level of planning practices sophistication and each surrogate measure of the

organizational effectiveness was calculated to assess the strength of the relation between the two variables. Then, the hypothesis was tested by using a regression analysis. The average level of planning practices sophistication was the independent variable while each surrogate measure of organizational effectiveness represented the dependent variable. To detect outliers and specification errors, the scatterplots of the residuals were examined. In addition, influence statistics were used to disclose outliers which could not readily be detected by an examination of residuals. Several transformations of the original data were performed to linearize nonlinear relationships evidenced by the residual plots. A natural logarithm transformation of the dependent variable resulted in the best linear relationship. Since some data values on growth are negative, representing a decline in sales growth, all the data values on growth were transformed by adding to each data value a value of eleven which could offset all the negative data values. Four models were developed representing planning practices versus growth and planning practices versus return on sales for both the United States and France.

#### U.S.A.

##### a) Planning Practices versus Growth

The Pearson correlation coefficient between the average level of planning practices sophistication and

growth is 0.83. The p-value of 0.0001 gives very strong evidence that the true population correlation is not zero. A linear relationship exists between the average level of planning practices sophistication and growth.

A regression analysis was performed by using the natural logarithm of growth,  $\ln(\text{GROWTH})$ , as dependent variable and the average level of planning practices sophistication, PLAN, as independent variable. The results of the statistical procedures are presented in Table 3.

TABLE 3: Regression of Growth on Planning Practices

U.S.A.

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	$R^2$	$F^*$	Pr > F
REGRESSION	12.3855	1	12.3855	0.8232	423.5870	0.0001
ERROR	2.6608	91	0.0292			
TOTAL	15.0463	92				

VARIABLE	PARAMETER ESTIMATE	STANDARD ERROR	T FOR $H_0$ : PARAMETER = 0	Pr >  T
INTERCEP	1.3447	0.0904	14.875	0.0001
PLAN	0.5736	0.0279	20.581	0.0001

The model was developed as follows:

$$\ln(\text{GROWTH} + 11) = 1.34 + 0.57(\text{PLAN})$$

or

$$\text{GROWTH} = 3.82e^{0.57(\text{PLAN})} - 11$$

We reject the null hypothesis that there is no linear relationship between  $\ln(\text{GROWTH})$  and PLAN because for the PLAN parameter, the p-value for the t-value is 0.0001, which gives overwhelming evidence that the slope is not zero. In other words, increasing PLAN does produce a measurable increase in  $\ln(\text{GROWTH})$ . In addition, the p-value for the F-value is 0.0001, which indicates that the model explains a significant portion of the variation in the data. In other words, the model is significant at the 5% significance level.

b) Planning Practices versus Return on Sales

The Pearson correlation coefficient between the average level of planning practices sophistication and return on sales is 0.83. The p-value of 0.0001 gives very strong evidence that the true population correlation is not zero. As a result, a linear relationship exists between the average level of planning practices sophistication and return on sales.

A regression analysis was performed by using the natural logarithm of return on sales,  $\ln(\text{ROS})$ , as dependent variable and the average level of planning practices sophistication, PLAN, as independent variable. The results of the statistical procedures are presented in Table 4.

TABLE 4: Regression of Return on sales on Planning Practices

U.S.A.

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	R <sup>2</sup>	F*	Pr > F
REGRESSION	49.7328	1	49.7328	0.7732	272.6630	0.0001
ERROR	14.5917	80	0.1823			
TOTAL	64.3245	81				

VARIABLE	PARAMETER ESTIMATE	STANDARD ERROR	T FOR H <sub>0</sub> : PARAMETER = 0	Pr >  T
INTERCEP	-2.7874	0.3314	-8.412	0.0001
PLAN	1.6912	0.1024	16.513	0.0001

The model was developed as follows:

$$\text{LN}(\text{ROS}) = -2.79 + 1.69(\text{PLAN})$$

or

$$\text{ROS} = 0.61e^{1.69(\text{PLAN})}$$

We reject the null hypothesis that there is no linear relationship between  $\ln(\text{ROS})$  and  $\text{PLAN}$  because for the  $\text{PLAN}$  parameter, the p-value for the t-value is 0.0001, which gives overwhelming evidence that the slope is not zero. In other words, increasing  $\text{PLAN}$  does produce a measurable increase in  $\ln(\text{ROS})$ . In addition, the p-value for the F-value is 0.0001, which indicates that the model explains a significant portion of the variation in the data. In other words, the model is significant at the 5%

significance level.

France

a) Planning Practices versus Growth

The Pearson correlation coefficient between the average level of planning practices sophistication and growth is 0.86. The p-value of 0.0001 gives very strong evidence that the true population correlation is not zero. As a result, a linear relationship exists between the average level of planning practices sophistication and growth.

A regression analysis was performed by using the natural logarithm of growth,  $\ln(\text{GROWTH})$ , as dependent variable and the average level of planning practices sophistication, PLAN, as independent variable. The results of the statistical procedures are presented in Table 5.

TABLE 5: Regression of Growth on Planning Practices

France

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	$R^2$	$F^*$	Pr > F
REGRESSION	13.4101	1	13.4101	0.8693	259.3530	0.0001
ERROR	2.0165	39	0.0517			
TOTAL	15.4266	40				

(Table 5 continued)

VARIABLE	PARAMETER	STANDARD	T FOR $H_0$ :	
	ESTIMATE	ERROR	PARAMETER = 0	Pr >  T
INTERCEP	-1.3691	0.2847	-4.809	0.0001
PLAN	1.3300	0.0826	16.104	0.0001

The model was developed as follows:

$$\ln(\text{GROWTH} + 11) = -1.37 + 1.33(\text{PLAN})$$

or

$$\text{GROWTH} = 0.25e^{1.33(\text{PLAN})} - 11$$

We reject the null hypothesis that there is no linear relationship between  $\ln(\text{GROWTH})$  and  $\text{PLAN}$  because for the  $\text{PLAN}$  parameter, the p-value for the t-value is 0.0001, which gives overwhelming evidence that the slope is not zero. In other words, increasing  $\text{PLAN}$  does produce a measurable increase in  $\ln(\text{GROWTH})$ . In addition, the p-value for the F-value is 0.0001, which indicates that the model explains a significant portion of the variation in the data. In other words, the model is significant at the 5% significance level.

#### b) Planning Practices versus Return on Sales

The Pearson correlation coefficient between the average level of planning practices sophistication and return on sales is 0.87. The p-value of 0.0001 gives very strong evidence that the true population correlation is not zero. As a result, a linear relationship exists

between the average level of planning practices sophistication and return on sales.

A regression analysis was performed by using the natural logarithm of return on sales,  $\ln(\text{ROS})$ , as dependent variable and the average level of planning practices sophistication, PLAN, as independent variable. The results of the statistical procedures are presented in Table 6.

TABLE 6: Regression of Return on Sales on Planning Practices

France

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	$R^2$	$F^*$	Pr > F
REGRESSION	43.8819	1	43.8819	0.9572	872.8080	0.0001
ERROR	1.9608	39	0.0503			
TOTAL	45.8427	40				

VARIABLE	PARAMETER ESTIMATE	STANDARD ERROR	T FOR $H_0$ : PARAMETER = 0	Pr >  T
INTERCEP	-4.1037	0.2260	-18.156	0.0001
PLAN	1.9630	0.0664	29.543	0.0001

The model was developed as follows:

$$\text{LN}(\text{ROS}) = -4.10 + 1.96(\text{PLAN})$$

or

$$\text{ROS} = 0.02e^{1.96(\text{PLAN})}$$

We reject the null hypothesis that there is no linear relationship between  $\ln(\text{ROS})$  and  $\text{PLAN}$  because for the  $\text{PLAN}$  parameter, the p-value for the t-value is 0.0001, which gives overwhelming evidence that the slope is not zero. In other words, increasing  $\text{PLAN}$  does produce a measurable increase in  $\ln(\text{ROS})$ . In addition, the p-value for the F-value is 0.0001, which indicates that the model explains a significant portion of the variation in the data. In other words, the model is significant at the 5% significance level.

The coefficients of  $\text{PLAN}$  in the  $\text{PLAN}$  versus  $\text{GROWTH}$  models for both countries were compared. In particular, the coefficient of 0.57 in the United States model:  $\ln(\text{GROWTH} + 11) = 1.34 + 0.57(\text{PLAN})$  was compared to the coefficient of 1.33 in the French model:  $\ln(\text{GROWTH} + 11) = -1.37 + 1.33(\text{PLAN})$ . The null hypothesis states that the coefficients of  $\text{PLAN}$  for both countries are equal, and the alternative hypothesis states that they are not equal. Since the sample sizes from both countries are large enough, the test statistic is standard normally distributed. The test statistic was calculated as -56.55 which is smaller than the value for  $Z_{0.025}$  of -1.96. Hence, there is sufficient evidence to allow us to conclude that the coefficients of  $\text{PLAN}$  in the models for both countries differ at the 5% significance level. In fact,  $\text{PLAN}$  in the French model has more effect on

$\ln(\text{GROWTH} + 1)$  than the one in the United States model.

The coefficients of PLAN in the ROS versus PLAN models for both countries were compared. In particular, the coefficient of 1.69 in the United States model:  $\ln(\text{ROS}) = -2.79 + 1.69(\text{PLAN})$  was compared to the coefficient of 1.96 in the French model:  $\ln(\text{ROS}) = -4.10 + 1.96(\text{PLAN})$ . The null hypothesis states that the coefficients of PLAN for both countries are equal, and the alternative hypothesis states that they are not equal. Since the sample sizes from both countries are large enough, the test statistic is standard normally distributed. The test statistic was calculated as -17.42 which is smaller than the value for  $Z_{0.025}$  of -1.96. Hence, there is sufficient evidence to allow us to conclude that the coefficients of PLAN in the models for both countries differ at the 5% significance level. In fact, PLAN in the French model has more effect on  $\ln(\text{ROS})$  than the one in the United States model.

As a result, we reject the null hypothesis that there is no significant relationship between the level of planning practices sophistication and organizational effectiveness for both the United States and France. This result seems to support the premise that the better a company plans, the better the company performs which was confirmed by a majority of the studies dealing with the impact of planning in small business. However, we have to

interpret this result with caution because a researcher can never prove knowledge of causes from research. According to Nagel (1961), the law is said to be a causal one apparently because the relation it formulates between the events supposedly satisfies four conditions: (1) the relation is an invariable or uniform one, in the sense that whenever the alleged cause occurs so does the alleged effect with the common tacit assumption that the cause constitutes both a necessary and a sufficient condition for the occurrence of the effect; (2) the relation holds between events that are spatially contiguous or termini in a cause-and-effect chain of events, where the linking events are spatially contiguous; (3) the relation has a temporal character, in the sense that the event said to be the cause precedes the effect and is also "continuous" with the latter; and (4) the relation is asymmetrical. In addition, it is impossible to rule out all other possible and plausible causes for the changes in behavior that may have been observed. The relationship may be that organizational effectiveness leads to planning practices sophistication. The nature of cross-sectional data resulted in insufficiency to establish temporal antecedents. Despite the aforementioned arguments, the author assumes that there is a causal relationship between the level of planning practices sophistication and organizational effectiveness confirmed by a majority of

findings from the studies of an impact of planning on performance as discussed in Chapter 2.

Sales Growth in the United States and France

H3: The sales growth rates, on the average, for the United States and France are not equal.

The means of the sales growths for the United States and France were compared. The two-sample t-test was used to test the null hypothesis that the means for the two groups are equal against the alternative hypothesis that they are not equal. The results of the two-sample t-test are summarized in Table 7.

TABLE 7: T-test Procedure - Sales Growth for the U.S.A. and France

VARIABLE: GROWTH

<u>NATION</u>	<u>N</u>	<u>MEAN</u>	<u>STD DEV</u>	<u>STD ERROR</u>	<u>MIN</u>	<u>MAX</u>
U.S.A.	104	24.7298	10.1183	0.9922	8.3000	43.5000
FRANCE	52	25.4423	16.6785	2.3129	1.0000	61.0000
<u>VARIANCES</u>	<u>T</u>	<u>DF</u>	<u>PROB &gt;  T </u>			
UNEQUAL	-0.2831	70.3	0.7779			
EQUAL	-0.3310	154.0	0.7411			

For  $H_0$ : Variances are equal,  $F' = 2.72$   $DF = (103, 51)$

Prob >  $F' = 0.0001$

The p-value for Prob >  $F'$  is 0.0001, indicating that the variances between the sales growth in the United

States and France are significantly different at 5% significance level. Since we cannot assume equal variances for the two groups, an approximate t-test is applicable (Satterthwaite, 1946). The p-value for the approximate t-test is 0.7779, which is larger than 0.05. This indicates that the averages of the sales growth for the United States and France are not significantly different at the 5% significance level.

This result contradicts the alternative hypothesis (H3) that the sales growth rates, on the average, for the United States and France are not equal. In general, one would expect that the means for both countries are different because of the separate environments. However, since both countries are industrialized nations, the averages of sales growth rates of the companies in the same industry can be very similar.

#### Return on Sales in the United States and France

H4: The returns on sales, on the average, for the United States and France are not equal.

The means of the returns on sales for the United States and France were compared. The two-sample t-test was used to test the null hypothesis that the means for the two groups are equal against the alternative hypothesis that they are not equal. The results of the two-sample t-test are summarized in Table 8.

TABLE 8: T-test Procedure - Return on Sales for  
the U.S.A. and France

VARIABLE: ROS

<u>NATION</u>	<u>N</u>	<u>MEAN</u>	<u>STD DEV</u>	<u>STD ERROR</u>	<u>MIN</u>	<u>MAX</u>
U.S.A.	104	17.8990	13.5052	1.3243	0.1000	42.0000
FRANCE	52	16.8596	15.4450	2.1418	0.8000	50.0000
<u>VARIANCES</u>		<u>T</u>	<u>DF</u>	<u>PROB &gt;  T </u>		
UNEQUAL		0.4128	90.9	0.6307		
EQUAL		0.4317	154.0	0.6666		

For  $H_0$ : Variances are equal,  $F' = 1.31$   $DF = (103, 51)$

Prob >  $F' = 0.2511$

The p-value for Prob >  $F'$  is 0.2511, indicating that the variances between the returns on sales in the United States and France are not significantly different at the 5% significance level. In addition, the p-value for the t-test is 0.6666, which is larger than 0.05. This indicates that the averages of the returns on sales for the United States and France are not significantly different at the 5% significance level.

This result contradicts the alternative hypothesis ( $H_4$ ) that returns on sales, on the average, for the United States and France are not equal. In general, one would expect that the means for both countries are different because of the separate environments. However, since both countries are industrialized nations, the averages of the

returns on sales of the companies in the same industry can be very similar.

#### Planning Practices and Path to Ownership

H5: There is a significant relationship between the path to ownership and the level of planning practices sophistication

Since the data on the path to ownership are ordinal-scaled, we tested the population Spearman rank correlation coefficient. The null hypothesis states that the population Spearman rank correlation coefficient is zero, indicating that there is no relationship between the two variables.

#### U.S.A.

Since the p-value which is the significance probability for testing the null hypothesis that the true correlation in the population is zero is 0.9359, there is not enough evidence to allow us to conclude that there is a relationship between the level of planning practices sophistication and the path to ownership. In particular, the Spearman rank correlation coefficient between the two variables is 0.01192.

#### France

Since the p-value which is the significance probability for testing the null hypothesis that the true correlation in the population is zero is 0.8919, there is not enough evidence to allow us to conclude that there is

a relationship between the level of planning practices sophistication and the path to ownership. In particular, the Spearman rank correlation coefficient between the two variables is 0.01931.

The results for both countries contradict the alternative hypothesis (H5) that there is a significant relationship between the path to ownership and the level of planning practices sophistication at the 5% significance level. Watts (1987)' results found otherwise. In general, one should not expect that there is a relationship between the two variables. A premise is that the level of business education which may have an effect on the level of planning practices sophistication is not necessarily a function of the path to ownership. In other words, for each path to ownership, many business owners have different levels of business education.

#### Planning Practices and Sales Volume

H6: There is a significant relationship between the sales volume and the level of planning practices sophistication.

Since the data on the sales volume are ordinal-scaled, we tested the population Spearman rank correlation coefficient. The null hypothesis states that the population Spearman rank correlation coefficient is zero, indicating that there is no relationship between the two variables.

U.S.A.

Since the p-value which is the significance probability for testing the null hypothesis that the true correlation in the population is zero is 0.3120, there is not enough evidence to allow us to conclude that there is a relationship between the level of planning practices sophistication and the sales volume. In particular, the Spearman rank correlation coefficient between the two variables is 0.10009.

France

Since the p-value which is the significance probability for testing the null hypothesis that the true correlation in the population is zero is 0.6156, there is not enough evidence to allow us to conclude that there is a relationship between the level of planning practices sophistication and the sales volume. In particular, the Spearman rank correlation coefficient between the two variables is 0.07126.

The data on the sales volume were regrouped and ANOVA was used to compare the means for planning among the groups.

U.S.A.

The regrouping of the data is shown in Table 9.

TABLE 9: Regrouping of Annual SalesORIGINAL DATA

<u>Annual Sales</u>	<u>Frequency</u>
1. under \$1 million	2
2. \$1 million - \$2 million	9
3. above \$2 million - \$5 million	24
4. above \$5 million - \$10 million	18
5. above \$10 million - \$20 million	9
6. above \$20 million - \$50 million	17
7. above \$50 million	4

REGROUPED DATA

<u>Annual Sales</u>	<u>Frequency</u>
1. under \$1 million - \$2 million	11
2. above \$2 million - \$5 million	24
3. above \$5 million - \$20 million	27
4. above \$20 million	21

Since the p-value which is the significance probability for testing the null hypothesis that there are no differences among the population means for the levels of planning practices sophistication is 0.9215 (the F-statistic is 0.16 with a degree of freedom of 3), there is not enough evidence to allow us to conclude that the average levels of planning practices sophistication among the groups differ at the 5% significance level.

France

The regrouping of the data is shown in Table 10.

TABLE 10: Regrouping of Annual Sales

ORIGINAL DATA

	<u>Annual Sales</u>	<u>Frequency</u>
1.	under 50,000,000 FF	0
2.	50,000,000 FF - 100,000,000 FF	12
3.	100,000,000 FF - 150,000,000 FF	8
4.	150,000,000 FF - 200,000,000 FF	7
5.	200,000,000 FF - 250,000,000 FF	1
6.	250,000,000 FF - 300,000,000 FF	4
7.	300,000,000 FF - 350,000,000 FF	3
8.	350,000,000 FF - 400,000,000 FF	1
9.	400,000,000 FF - 450,000,000 FF	0
10.	450,000,000 FF - 500,000,000 FF	1
11.	more than 500,000,000 FF	4

REGROUPED DATA

	<u>Annual Sales</u>	<u>Frequency</u>
1.	under and up to 100,000,000 FF	12
2.	100,000,000 FF - 150,000,000 FF	8
3.	150,000,000 FF - 250,000,000 FF	8
4.	250,000,000 FF - 350,000,000 FF	7
5.	more than 350,000,000 FF	6

Since the p-value which is the significance

probability for testing the null hypothesis that there are no differences among the population means for the levels of planning practices sophistication is 0.8997 (the F-statistic is 0.26 with a degree of freedom of 4), there is not enough evidence to allow us to conclude that the average levels of planning practices sophistication among the groups differ at the 5% significance level.

The results for both countries contradict the alternative hypothesis (H6) that there is a significant relationship between the sales volume and the level of planning practices sophistication. In general, one may expect that the larger the sales volume becomes, the more complex organization a company becomes. Therefore, the company needs a higher level of planning practices sophistication. This premise might seem plausible if the study included larger firms also. This study was limited to small business where the differences in the sales volume may not be sufficiently large enough to warrant the effect.

#### Planning Practices and Number of Years in Business

H7: There is a significant relationship between the number of years in business and the level of planning practices sophistication.

Since the data on the number of years in business are ordinal-scaled, we tested the population Spearman rank correlation coefficient. The null hypothesis states that

the population Spearman rank correlation coefficient is zero, indicating that there is no relationship between the two variables.

U.S.A.

Since the p-value which is the significance probability for testing the null hypothesis that the true correlation in the population is zero is 0.6004, there is not enough evidence to allow us to conclude that there is a relationship between the level of planning practices sophistication and the number of years in business. In particular, the Spearman rank correlation coefficient between the two variables is -0.0522.

France

Since the p-value which is the significance probability for testing the null hypothesis that the true correlation in the population is zero is 0.3096, there is not enough evidence to allow us to conclude that there is a relationship between the level of planning practices sophistication and the number of years in business. In particular, the Spearman rank correlation coefficient between the two variables is 0.14365.

The data on the number of years were regrouped and ANOVA was used to compare the means for planning among the groups.

U.S.A.

The regrouping of the data is shown in Table 11.

TABLE 11: Regrouping of Number of YearsORIGINAL DATA

<u>Number of Years</u>	<u>Frequency</u>
1. less than 3 years	1
2. 3-5 years	3
3. 6-10 years	3
4. 11-20 years	18
5. over 20 years	68

REGROUPED DATA

<u>Number of Years</u>	<u>Frequency</u>
1. less than 11 years	7
2. 11-20 years	18
3. over 20 years	68

Since the p-value which is the significance probability for testing the null hypothesis that there are no differences among the population means for the levels of planning practices sophistication is 0.2679 (the F-statistic is 1.34 with a degree of freedom of 2), there is not enough evidence to allow us to conclude that the average levels of planning practices sophistication among the groups differ at the 5% significance level.

France

The regrouping of the data is shown in Table 12.

TABLE 12: Regrouping of Number of YearsORIGINAL DATA

	<u>Number of Years</u>	<u>Frequency</u>
1.	less than 3 years	0
2.	3-5 years	1
3.	6-10 years	3
4.	11-20 years	3
5.	over 20 years	34

REGROUPED DATA

	<u>Number of Years</u>	<u>Frequency</u>
1.	up to 20 years	7
2.	over 20 years	34

Since the data was regrouped into two categories, the t-test which is appropriate for comparing two independent groups was performed. The results of the two sample t-test are summarized in Table 13.

TABLE 13: T-test Procedure - Planning Practices for  
2 Groups of the Number of Years (France)

VARIABLE: PLAN

<u>NATION</u>	<u>N</u>	<u>MEAN</u>	<u>STD DEV</u>	<u>STD ERROR</u>	<u>MIN</u>	<u>MAX</u>
≤ 20 Yr.	7	3.2760	0.4556	0.1722	2.6818	4.0417
> 20 Yr.	33	3.4265	0.4166	0.0725	2.5833	4.2500
<u>VARIANCES</u>	<u>T</u>	<u>DF</u>	<u>PROB &gt;  T </u>			
UNEQUAL	-0.8054	8.3	0.4432			
EQUAL	-0.8549	38.0	0.3979			

For  $H_0$ : Variances are equal,  $F' = 1.20$   $DF = (6, 32)$

Prob >  $F' = 0.6673$

The p-value for Prob >  $F'$  is 0.6673, indicating that the variances between the level of planning practices sophistication for the two groups are not significantly different at the 5% significance level. In addition, the p-value for the t-test is 0.3979, which is larger than 0.05. This indicates that the averages levels of planning practices sophistication between the two groups are not significantly different at the 5% significance level.

The results for both countries contradict the alternative hypothesis ( $H_7$ ) that there is a significant relationship between the number of years in business and the level of planning practices sophistication. In general, one may expect that the longer a company is in the business, the more experience the owner has.

Therefore, with an increased experience, the owner may resort to use a higher level of planning practices sophistication. On the other hand, one may expect that the longer a company is in the business, the more outdated the technique for planning becomes. This premise implies that a younger company has a higher level of planning practices sophistication. However, the results of this study do not advocate the two premises.

In addition, we can test the following hypothesis:

The numbers of years in business, on the average, for the United States and France are not equal.

The means for the number of years in business in the U.S.A. and France were compared. Since the data are ordinal-scaled, the Wilcoxon Rank Sum test was used to test the null hypothesis that the means for the two groups are equal against the alternative hypothesis that they are not equal. The p-value for  $\text{Prob} > |Z|$  (a normal approximation) is 0.2406. Therefore, we conclude that the means for the number of years in business in the United States and France are not significantly different at the 5% significance level.

The result contradicts the alternative hypothesis that the numbers of years in business, on the average, for the United States and France are not equal. In general, one expects that the means for both countries should be different because of the separate environments. The equal

means resulted from the study are merely coincidental.

#### Planning Practices and Number of Employees

H8: There is a significant relationship between the number of employees and the level of planning practices sophistication.

Since the data on the number of employees are ordinal-scaled, we tested the population Spearman rank correlation coefficient. The null hypothesis states that the population Spearman rank correlation coefficient is zero, indicating that there is no relationship between the two variables.

#### U.S.A.

Since the p-value which is the significance probability for testing the null hypothesis that the true correlation in the population is zero is 0.8705, there is not enough evidence to allow us to conclude that there is a relationship between the level of planning practices sophistication and the number of employees. In particular, the Spearman rank correlation coefficient between the two variables is -0.01642.

#### France

Since the p-value which is the significance probability for testing the null hypothesis that the true correlation in the population is zero is 0.1660, there is not enough evidence to allow us to conclude that there is a relationship between the level of planning practices

sophistication and the number of employees. In particular, the Spearman rank correlation coefficient between the two variables is 0.19695.

The data on the number of employees were regrouped and ANOVA was used to compare the means for planning among the groups.

U.S.A.

The regrouping of the data is shown in Table 14.

TABLE 14: Regrouping of Number of Employees

ORIGINAL DATA

	<u>Number of Employees</u>	<u>Frequency</u>
1.	1 - 10	2
2.	11 - 25	15
3.	26 - 50	19
4.	51 - 100	23
5.	101 - 250	20
6.	251 - 500	12
7.	over 500	0

REGROUPED DATA (Table 14 continued)

	<u>Number of Employees</u>	<u>Frequency</u>
1.	1 - 25	17
2.	26 - 50	19
3.	51 - 100	23
4.	101 - 250	20
5.	251 - 500	12

Since the p-value which is the significance probability for testing the null hypothesis that there are no differences among the population means of the levels of planning practices sophistication is 0.5222 (the F-statistic is 0.81 with a degree of freedom of 4), there is not enough evidence to allow us to conclude that the average levels of planning practices sophistication among the groups differ at the 5% significance level.

France

The regrouping of the data is shown in Table 15.

TABLE 15: Regrouping of Number of EmployeesORIGINAL DATA

	<u>Number of Employees</u>	<u>Frequency</u>
1.	1 - 10	0
2.	11 - 25	0
3.	26 - 50	1
4.	51 - 100	9
5.	101 - 250	19
6.	251 - 500	11
7.	over 500	0

REGROUPED DATA

	<u>Number of Employees</u>	<u>Frequency</u>
1.	1 - 100	10
2.	101 - 250	19
3.	251 - 500	11

Since the p-value which is the significance probability for testing the null hypothesis that there are no differences among the population means of the levels of planning practices sophistication is 0.1475 (the F-statistic is 2.02 with a degree of freedom of 2), there is not enough evidence to allow us to conclude that the average levels of planning practices sophistication among the groups differ at the 5% significance level.

The results for both countries contradict the alternative hypothesis (H8) that there is a significant

relationship between the number of employees and the level of planning practices sophistication. In general, one may expect that the larger a company is in term of employees, the more complex organization the company becomes. Therefore, the company needs a higher level of planning practices sophistication. This premise might seem plausible if the study included larger firms also. This study was limited to small business where the differeces in the number of employees may not be sufficiently large enough to warrant the effect.

CHAPTER 6  
CONCLUSIONS AND FUTURE RESEARCH

The results of this study can be summarized as follows:

1. The intensity of the planning practices sophistication for the United States and France are equal.
2. There is a significant relationship between the level of planning practices sophistication and the sales growth rate.
3. There is a significant relationship between the level of planning practices sophistication and the return on sales.
4. The sales growth rates, on the average, for the United States and France are equal.
5. The returns on sales, on the average, for the United States and France are equal.
6. There is no relationship between the path to ownership and the level of planning practices sophistication.
7. There is no relationship between the sales volume and the level of planning practices sophistication.
8. There is no relationship between the number of years in business and the level of planning practices sophistication.
9. The numbers of years in business, on the average,

for the United States and France are equal.

10. There is no relationship between the number of employees and the level of planning practices sophistication.

According to the results of this study, we can infer that there is no difference in practice between the average level of planning practices sophistication in the United States and in France. Therefore, this finding offers a useful information to small business owners in each country who consider the following strategies: mergers, acquisitions, and joint ventures. In addition, the results help small business owners in both countries learn that there is a significant relationship between the level of planning practices sophistication and sales growth as well as return on sales. The higher the level of planning practices sophistication, the better a company performs. This finding was confirmed by a majority of the studies dealing with the impact of planning on small business. Therefore, small business owners should not overlook the importance of planning.

Inconsistencies in defining small business exist not only among different countries but also within the same countries, even in the same organizations. The author advocates an agreed international definition of small business or at least an agreed national definition so that a common data base on small business can be legitimately

used to draw empirically based comparisons among samples from different sources. Although there is an indicative difference between the terms "small business owner" and "entrepreneur", researchers in the area of small business have used the two terms interchangeably. Thus, the author is calling for a semantic attention when using the two terms.

Similarly, there are confounding elements in defining strategic planning. Sometimes, the meaning of strategic planning given by one author overlaps the meaning of other kinds of planning given by another author. Since defining strategic planning is inevitably subjective, how do we know whose definition is more appropriate? As long as there is no unanimity in the definition of strategic planning, it will be difficult to validly draw empirically based comparisons among different research in the area of strategic planning. Specifically, the term strategic planning used by a researcher does not necessarily signify the same term used by other researchers. As evidenced in this study, it will be invalid to draw a conclusion on the presence or absence of strategic planning in small business, given that the definitions of strategic planning used by different researchers are not the same. This is why the generic term "planning" was used in this study rather than the specific term "strategic planning."

Myriad normative planning models were presented; however, can they be operationalized in the real small business environment? A rigorous empirical base is required then. Although most firms were found not to engage in formal planning, the author cannot assert that small businesses do not engage in formal planning. Contradictory findings among empirical literature are apparent due to the following causes: small sample size, narrow industry coverage, specific geographic regions, short operating time-frames of small businesses which can lead to inadequately developed strategic planning systems, non-availability of key data, non-homogeneity of data, inconsistencies of definitions, cross-sectional samples, different stages of small firm development, different environments, the validity and reliability of research methodology. As for the impact of planning on small business, most firms that used formal planning outperformed other firms. However, in assessing organizational effectiveness, what measures should be sufficiently included as a multivariate operationalization?

Numerous possible extensions of this research are as follows:

1. A comprehensive international survey of small business definitions.
2. Research on an agreed national and/or

international definitions of small business.

3. Relationships between the classifications of small business and the application of planning.

4. Test each of the prescriptive models summarized in Chapter 2.

5. Research on small business strategic planning in the context of a "systems" perspective as an extension of Wood (1984)'s development.

6. Research on usages of computer assisted strategic planning in small business including a survey of available programs and cost effectiveness.

7. Role of small business owner vis-a-vis planning.

8. Replication of this study with different countries and/or different industries.

9. The assessment of the level of importance of each surrogate measure of organizational effectiveness using the Analytic Hierarchy Process. See Harker and Vargas (1987) and Saaty (1990).

10. Survey of the definitions of strategic planning and find the common elements.

11. The impact of strategic planning on organizational effectiveness using "soft" measures.

12. Replication of the empirical research done in Chapter 2 with different sets of samples.

13. Research on how, why, and when planning leads to organizational effectiveness.

The findings of this study contribute both practical and theoretical values. From a practical aspect, the relationship found between planning and organizational effectiveness would suggest that organizational effectiveness can be improved by high level of planning practices sophistication. In addition, the findings give an insight into actual planning of small paper and allied products industry in France and the United States. Planning plays a remarkable role in the success and survival of small businesses. From a theoretical aspect, the results of this study do provide an incremental contribution to contingency theory, small firm research, and comparative management.

## APPENDIX 1

### AN INTERNATIONAL SURVEY OF DEFINITIONS OF SMALL BUSINESS

<u>COUNTRIES</u>	<u>NUMBER OF WORKERS</u>	<u>FIXED ASSETS (FA), CAPITAL (C), TURNOVER (T)</u>
<b>AUSTRALIA<sup>1</sup></b>		
Mining	< 20	
Agriculture		< A\$0.2M (annual value of operations)
Manufacturing	< 100	
Retailing	< 20	
Wholesaling	< 20	
Construction <sup>a</sup>	< 20	
Selected service industry <sup>b</sup>	< 20	
<b>BANGLADESH<sup>2</sup></b>		
Plant and machinery (for small credits)		≤ 2.5M taka(C)
<b>CAMEROON<sup>3</sup></b>		
Woodworking	≤ 10	

<u>COUNTRIES</u>	<u>NUMBER OF WORKERS</u>	<u>FIXED ASSETS (FA)</u> <u>CAPITAL (C), TURNOVER (T)</u>
<b>FRANCE<sup>4</sup></b>		
For administrative and statistical purposes <sup>a</sup>	< 500	
Manufacturing <sup>b</sup>	< 50	
Value added tax (exempt)		< F0.5M
<b>Germany<sup>5</sup></b>		
a	< 50	
Manufacturing <sup>b</sup>	< 200	
c	< 500	
d	< 1000	
<b>HUNGARY<sup>6</sup></b>		
State enterprise:		
Small independent enterprise <sup>a</sup>		
Subsidiary enterprise <sup>b</sup>		
Independent operation of part of existing enterprise <sup>c</sup>	≤ 15	
Cooperative:		
Small non-agricultural cooperatives <sup>d</sup>	15-100	
Industrial & service cooperative team <sup>e</sup>	min 5	
Agricultural teams <sup>f</sup>		
Self accounting lump-sum sections <sup>g</sup>	≤ 15	

<u>COUNTRIES</u>	<u>NUMBER OF WORKERS</u>	<u>FIXED ASSETS (KA) CAPITAL (C) . TURNOVER (T)</u>
Single proprietor:		
Licensed artisans <sup>h</sup>	max 3 employees and max 6 family members	
Partnerships:		
Business-work partnership (BWP) <sup>i</sup>	2-30	
Enterprise-business-work partnership (EBWP) <sup>j</sup>	2-30	
INDONESIA <sup>7</sup>		
In general <sup>a</sup>	5-19	
Textile <sup>b</sup>	≤ 100 powerlooms	
IRELAND <sup>8</sup>	< 100	
ISRAEL <sup>9</sup>	≤ 50	
JAPAN <sup>10</sup>		
Small Business Corporation Law:		
Manufacturing	≤ 300	≤ Y50.0M(C)
Commerce, service	≤ 50	≤ Y10.0M(C)
Mining	≤ 1000	≤ Y50.0M(C)
Central Bank for Commercial and Industrial Association Law:		
Manufacturing	≤ 300	≤ Y50.0M(C)

<u>COUNTRIES</u>	<u>NUMBER OF WORKERS</u>	<u>FIXED ASSETS (FA) CAPITAL(C), TURNOVER(T)</u>
Commerce, service	≤ 50	≤ Y10.0M(C)
Small Business Credit Insurance Law:		
Manufacturing	≤ 300	≤ Y50.0M(C)
Commerce, service	≤ 50	≤ Y10.0M(C)
Mining	≤ 1000	≤ Y10.0M(C)
Medium and Small Enterprise and Other Cooperative Organizations Law:		
Manufacturing	≤ 300	≤ Y50.0M(C)
Commerce, service	≤ 50	≤ Y10.0M(C)
Small Business Modernization Promotion Law:		
Manufacturing	≤ 300	≤ Y50.0M(C)
Commerce, service	≤ 50	≤ Y10.0M(C)
(Enterprises eligible for extra depreciation)	≤ 300	≤ Y50.0M(C)
Small Business Structural Modernization Law:		
Manufacturing	≤ 300	≤ Y50.0M(C)
Commerce, service	≤ 50	≤ Y10.0M(C)
Mining	≤ 1000	≤ Y50.0M(C)
Smaller Business Guidance Law:		
Manufacturing	≤ 300	≤ Y50.0M(C)
Commerce, service	≤ 50	≤ Y10.0M(C)
Law Concerning the Organization of Medium and Small Enterprises:		
Manufacturing	≤ 300	≤ Y50.0M(C)

<u>COUNTRIES</u>	<u>NUMBER OF WORKERS</u>	<u>FIXED ASSETS (FA)</u> <u>CAPITAL(C), TURNOVER(T)</u>
Commerce, service	≤ 50	≤ Y10.0M(C)
Ceramics	≤ 900	≤ Y50.0M(C)
Rubber Products	≤ 900	≤ Y50.0M(C)
Textile equipment and mechanical dyeing	≤ 600	≤ Y50.0M(C)
Cotton and woolen yarn wholesaling	≤ 100	≤ Y10.0M(C)
Mining	≤ 1000	≤ Y50.0M(C)
Rolled copper products	≤ 500	≤ Y50.0M(C)
Small Business Investment Company Law		≤ Y50.0M(C)
		(provided that new shares in the value of up to Y100.0M should be under- written)
Special Taxation Measures Laws	≤ 1000	≤ Y100.0M
Law Concerning Small Business Mutual Aid for Retirement Allowances:		
Manufacturing, financing, insurance, real estate, trade	≤ 300	
Wholesale, retail service	≤ 50	
Law Concerning the prevention of Defaulted Payments for Subcontractors:		
Subcontractors		≤ Y50.0M
		(individual or corporate enterprise)
Small-Scale Enterprise Mutual Aid Law:		
Manufacturing	≤ 20	
Commerce, service	≤ 5	

<u>COUNTRIES</u>	<u>NUMBER OF WORKERS</u>	<u>FIXED ASSETS (FA) CAPITAL (C), TURNOVER (T)</u>
Small Business Promotion Corporation Law:		
Manufacturing, mining	≤ 300	≤ Y50.0M
Commerce, service	≤ 50	≤ Y30.0M
<b>MALAYSIA<sup>11</sup></b>		
a	< 50	< M\$0.5M(C)
Manufacturing or commercial <sup>b</sup>	< 50	
<b>NETHERLANDS<sup>12</sup></b>		
	< 100 <sup>a</sup>	
	50-75 <sup>b</sup>	
		Df3.0-10.0M(sales) <sup>b</sup>
		Df2.0-8.0M(assets) <sup>b</sup>
<b>NORWAY<sup>13</sup></b>		
Investment grant		≤ Kr1.2M (T)
Management grant		≤ Kr0.8M (T)
<b>PEOPLE'S REPUBLIC OF CHINA<sup>14</sup></b>		
Cooperative and self employed	≤ 100	
<b>PHILIPPINES<sup>15</sup></b>		
a		< P1.0M(FA)
b	5-99	P0.1-1.0M(FA)

<u>COUNTRIES</u>	<u>NUMBER OF WORKERS</u>	<u>FIXED ASSETS (FA)</u> <u>CAPITAL (C), TURNOVER (T)</u>
SIERRA LEONE <sup>16</sup>		
a	15-50	≤ Le0.1M(FA) and annual output ≤ Le0.2M
cottage industry <sup>b</sup>		
SINGAPORE <sup>17</sup>		
a	< 50	
b	< 100	
c		< S\$2.0M(FA)
SOUTH AFRICA <sup>18</sup>		
mining	< 100	< 1 M rand (T)
manufacturing	< 50	< 1 M rand (T)
construction	< 50	< 1 M rand (T)
private transport	< 20	< 1 M rand (T)
wholesaling	< 50	< 5 M rand (T)
retailing	< 509	< 1 M rand (T)
motor trade	< 50	< 1 M rand (T)
catering	< 20	< 0.5 M rand (T)
accommodation	< 20	< 0.5 M rand (T)
SOUTH KOREA <sup>19</sup>		
manufacturing <sup>a</sup>	≤ 20	
SRI LANKA <sup>20</sup>		
Land, premises, machinery & plant		< Rp2.0M(C)
Machinery & plant only		< Rp1.0M(C)

<u>COUNTRIES</u>	<u>NUMBER OF WORKERS</u>	<u>FIXED ASSETS (FA) CAPITAL (C), TURNOVER (T)</u>
SWEDEN <sup>21</sup>	≤ 50	
Taiwan <sup>22</sup>		
manufacturing, processing or handicraft		< NT\$40M (paid-in capital) and ≤ NT\$120M (total assets) <sup>a</sup>
	≤ 300	< NT\$40M (paid-in capital) <sup>b</sup>
commercial and service	< 50	< NT\$20M (total annual sales)
mining	≤ 500	< NT\$40M (paid-in capital)
THAILAND <sup>23</sup>		
a	< 50	
b	10-49	
c		< 2.0M baht (FA)

<u>COUNTRIES</u>	<u>NUMBER OF WORKERS</u>	<u>FIXED ASSETS (FA)</u> <u>CAPITAL (C), TURNOVER (T)</u>
U.K. <sup>24</sup>		
Statistical definitions of small business:		
Manufacturing	≤ 200	
Retailing		≤ L0.185M p.a. (T)
Wholesale trade		≤ L0.730M p.a. (T)
Construction	≤ 25	
Mining & quarrying	≤ 25	
Motor trade		≤ L0.365M p.a. (T)
Miscellaneous services		≤ L0.185M p.a. (T)
Road transport	≤ 5 vehicles	
Catering (except multiples & brewery managed public houses)		
Relating to government assistance:		
European Investment Bank Loans	≤ 500	
Proprietary Company (proposed)	≤ 50	
Employment Act Exemptions	≤ 20	
Council for Small Industries in Rural Areas aid	≤ 20 (skilled)	
Export award	≤ 200	
Export visits	≤ 200	
Employment subsidy	≤ 200	
Computer aided production management	≤ 500	
Industrial Liaison Service	≤ 500	
Consultancy Scheme	25-500	
Collaborative Arrangements (manufacturing)	≤ 200	
Manufacturing Advisory Service	100-1000	
Companies Act disclosure exemption		≤ L1.0M p.a. (T)
Proprietary Company (proposed)		≤ L1.3M p.a. (T)
Value Added Tax registration		≤ L0.015M p.a. (T)

COUNTRIESNUMBER OF WORKERSFIXED ASSETS (FA)  
CAPITAL (C), TURNOVER (T)

Price code exemptions (manufacturing)		≤ L1.0M p.a. (T)
(distribution, services)		≤ L0.250M p.a. (T)
(professions)		≤ L0.100M p.a. (T)
Competition Act exemptions		≤ L5.0M p.a. (T)
European Investment Bank Loans		≤ L20.0M (FA)
Industrial Development Certificates (exemption)	≤ 50,000 feet <sup>2</sup>	
Office Development Permits (exemption)	≤ 30,000 feet <sup>2</sup>	
Proprietary Company (proposed)		≤ L0.65M (bal. sht.)
Small Exporter Policy		≤ L0.1M (export val.)
Corporation Tax reduced rate		≤ L0.08M (profits)

U.S.A.<sup>25</sup>

**NOTE**

<sup>1</sup> a Including the building trades, but excluding general government construction.

b Comprising motion picture theaters, cafes and restaurants, hotels, etc., accommodation, licensed clubs, laundries and dry cleaners, men's hairdressers and women's hairdressing and beauty salons.

Source: B. Johns (1983)

<sup>2</sup> Source: R. Clapham (1985)

<sup>3</sup> For medium-sized undertakings (up to 120 workers)

Source: E. Demol & G. Nihan (1982)

<sup>4</sup> There is no single legal definition of a small business in France. Various legal texts refer to or apply to different sizes of small businesses. Almost all definitions turn around the number of employees rather than gross sales or some other measure. Nonetheless there is a consensus as to what businesses are considered small. In France the small business sector is referred to as "PME", an acronym which literally means "small and medium sized enterprises" or "Petites et Moyennes Entreprises." To be considered a small business in France, or a "PME", ownership of the firm must be private as opposed to publicly held corporation, the owner(s) should assume a direct financial, technical and managerial involvement in the firm and the number of employees must be under 500. This definition is the one used by the General Confederation of Small Business (CGPME, Confederation Generale des Petites et Moyennes Entreprises), the most important non-governmental organization in the small business sector. Another related term is "PMI" which stands for "Petites et Moyennes Industries," literally "small and medium sized industries." Both "PMI" and "artisans" (or craftsmen) are often meant to be included within the term PME, although in some cases they are specifically excluded. The term "artisan" in France refers to a specific kind of enterprise, one which is enrolled in the appropriate trade register under the management of a Chamber of Trades. Artisanal enterprises have less than 10 members and normally do not engage in retail sales of products unless they are involved in transforming them through their craft, although there are more exceptions to this as time passes. There are an

estimated 660,000 such artisanal enterprises in France. In some sectors such as retail trade and service businesses the French national statistical agency, l'Institut National de la Statistique et des Etudes Economiques (INSEE), makes the cutoff point between medium and big business at 200 employees. INSEE is roughly equivalent to the U.S. Bureau of the Census.

a This limit is lowered to 200 or even 100 in certain sectors, such as textiles or services. Sometimes a turnover figure is used, sometimes equity capital.

b 'Small' (as distinct from medium) firms in manufacturing are generally regarded as those employing less than 50 persons. This is also the level above which social legislation requires enterprises to have works' councils for employees. Particular legislative provisions apply to craft enterprises belonging to professional bodies.

c Exempt from the need to register for value added tax.

Sources: P. V. Barreyre (1984)

A. M. Fell (1981)

<sup>5</sup> Small firms are called mittelstandische Unternehmen.

Source: C. Hull (1983)

a According to Institut fur Mittelstandsforschung, Universitat Koln, a small firm is one with up to 49 employees and medium-sized firms may be taken as those with 50-500 employees, but this general definition is not satisfactory for all sectors.

Source: W. Sauer (1984)

b In Berliner Senator fur Wirtschaft Kleine und mittlere Unternehmen in Berlin, Senator fur Wirtschaft, Berlin, 1977.

Source: C. Hull (1983)

c In Hamburger Staatliche Pressestelle Hamburger Mittelstandsbericht 1981, Staatliche Pressestelle, Hamburg.

Source: C. Hull (1983)

d In IFO Promotion of Research in the EEC IFO-Digest, no. 2, 1980, pp. 41-7

Source: C. Hull (1983)

The West German Federal Government in its most recent report on the small firm sector (Mittelstandsbericht), preferred to baulk the issue of definition by remarking laconically in a footnote to the opening sentence: the Federal Government does not consider useful any general and schematic definition of small and medium-sized firms.

Source: C. Hull (1983)

- <sup>6</sup> a From which the founding authority (ministry, national authority, local council) cannot withdraw means, and against which no liquidation process can be initiated. This means that if it produces a loss and is unable to cope on its own, it is shut down by the founding organ. The enterprise operates in a simplified system of accounting and statistical reference. There is no central prescription as to when and for what purposes it may be founded.
- b Independent enterprise created by the founding enterprise; it operates at its own risk, but is backed by the parent enterprise as guarantor.

- c It can operate in all fields that are not a state monopoly or a communal service (e.g. electricity). The enterprise can hand over its relevant section to a person in its own employment or to not more than 5 outsiders forming a legal association for a period not exceeding 5 years against a fee established by contract. The entrepreneur or entrepreneurs manage and run the section in the name of the enterprise, but at their own responsibility and risk. A cash-book at the very least must be kept. Receipts of over 500 forints must be accompanied by an invoice. Employees of the section are in an employment relationship with the enterprise itself. Their wages must be fixed and may be revised yearly. The entrepreneur or entrepreneurs are free to dispose over the profit remaining after the liabilities of the section, and may share it with the employees. The entrepreneur is taxed on his income according to income taxation but also has to pay the 3 percent association tax. Contracts of this sort, similar to those governing commercial transactions, can be entered into concerning any of the departments of an industrial plant. The aim is to reduce total costs. The enterprise pays a lump sum to cover general costs. Extra costs are the entrepreneurs' liability, while savings are their income, taxed according to regulations.
- d If membership is under 30, no executive has to be chosen. In such cases all important questions are settled by all members; the president being in charge of operative management. Anyone can be a member of a small cooperative as a full-time or part-time occupation. The conditions are participation in the work and a contribution to the capital of the cooperative.
- e Such a team can be formed by not fewer than five persons if the cooperative agrees to the working of such a group. Its agreement is needed because the team is not a corporate person. The team has a panel leadership. The team operates independently within the framework of an agreement with the cooperative.

- f Such teams have been allowed to work within Agricultural Cooperatives and Consumer and Marketing Cooperatives since 1972. Now they will be able to exist within state farms, forests, and agricultural associations as well.
- g This was legally regulated in 1972, but subjected to severe restrictions. Now the possibilities are open for extensive use of this form. The lump-sum accounting section is a self-accounting section of the cooperative. The cooperative fixes, in agreement with an employee (or member) what particular activity the section is to pursue. The agreement specifies the expected incomes and costs, and fixes the amount of the lump sum to be paid to the cooperative. This includes a contribution to the expenses and profit of the cooperative. Anything above that is the profit of those contracting.
- h After January 1982 local councils may no longer refuse applications for a licence by persons over 18 who have the legally prescribed training and/or experience. The artisan may operate without any territorial limitation. From 1982 onwards there are no restrictions on artisans doing work for state institutions or enterprises.
- i An economic team is an association formed by private persons generally for professional services. An economic team can be formed for consumer and other small workshop production as well as for jobs complementing the activities of firms. Economic teams may not engage in trading.
- j It is also possible to create economic teams within enterprise. An enterprise may provide or lease equipment or premises to teams formed by employees (or pensioners).

Sources: J. Naor (January, 1985)

M. Tardos (Autumn, 1983)

<sup>7</sup> a Those employing fewer than 5 workers are classified as handicraft industries.

b If only handlooms are used, they are classified as handicraft industries.

Source: T. T. Soon (1983)

- <sup>8</sup> This is the definition given by the Confederation of Irish Industry (CII)  
Source: P. Meade (1978)
- <sup>9</sup> This is the official Israeli small business definition, as used by the Ministry of Commerce and Industry, and the Small Industry Advisory Center, for the purpose of statistical data. Israel, in common with most countries, does not have an official quantitative definition of small business; nor does it have a legal or juristic one. The Israeli Small Industry Advisory Center, which is the official organ dealing with the managerial and financial problems of small businesses and sponsoring research in related subject, has its own qualitative definition, based on the managerial function of the small business manager: "A small enterprise is one whose manager carries out most or all the managerial functions."  
Source: L. Hertz (1982)
- <sup>10</sup> The standard term used to describe small firms in Japan is chukosho kigyō, which in fact translates as small and medium-sized firms. If either the value of a firm's capital or the number of its employees is less than the prescribed maximum, it legally qualifies as a small or medium-sized enterprise.  
Sources: D. Anthony (1983)  
T. T. Soon (1984)
- <sup>11</sup><sub>a</sub> Source: R. Clapham (1985)  
<sub>b</sub> Source: T. T. Soon (1983)
- <sup>12</sup><sub>a</sub> Private small and medium-sized enterprises, excluding primary industries, health, veterinary services and social services.  
Source: W. Verhoeven (January-March, 1988)  
<sub>b</sub> Source: Th. P. Van Hoorn (April, 1979)
- <sup>13</sup> A criteria set up by the Ministry of Commerce to provide grants for small shopkeeper in 1975.  
Source: D. A. Kirby (1976)

<sup>14</sup>The upper limit of 100 workers is based on a translation of MaoTsetung's economic statements of overall economic structure in 1956. The People's Republic of China does not have an official qualitative definition of small business. However, a small business definition could be constructed on the basis of the prevailing attitudes of the People's Republic of China towards the three criteria of the USA definition: independent ownership, independent operation, and "non-dominance in its field of operation" as follows: A small enterprise is one which is owned individually or by a collective of working people, who participate in the democratic management of their own workplace. In the rural areas, its production has to give priority to the fulfilment of government quotas, and in the urban areas it has to adhere to government price controls and raw material allocations.

Source: L. Hertz (1982)

<sup>15</sup>a Defined by the Philippines Commission on Small and Medium Industries.

b Defined by the University of Philippines Institute of Small Scale Industries (UP-ISSI).

Source: T. T. Soon (1983)

<sup>16</sup>The definition of small scale industry is given in the Sierra Leone Small Scale Industries Act, 1981, Section 2:

a The limits are set for fixed assets, the annual output, and employment.

b A cottage industry is a well organized small scale production unit with limited capacity and output making use of manual mechanical or automated devices and producing items according to established production techniques.

Sources: E. Chuta & C. Liedholm (1982)

P. Neck (1983)

- 17<sup>a</sup> The political leaders and government ministers of Singapore refer in their speeches to small industries as those establishments employing fewer than 50 workers.
- b Most of the researchers prefer to define small industries as those establishments employing fewer than 100 workers.
- c In 1976, when the new Small Industrial Finance Scheme was set up to provide low-interest loans to small industries, the firms applying for the loan under the new scheme had to be in manufacturing and assembly operations or supporting services related to manufacturing, and the firm should not have more than S\$2M in fixed production assets.

Source: T. T. Soon (1983)

- 18<sup>b</sup> From National Manpower Commission, 1984.

Source: D. Kirby (1985/1986)

- 19<sup>a</sup> The Korean government generally defines a small firm as 20 or less employees and a medium firm as 21 to 300 employees.

Source: K. M. Weaver & J. Pak (July/September, 1990)

- 20<sup>b</sup> Source: R. Clapham (1985)

- 21<sup>b</sup> While Herzog defines small and medium-sized firms as firms with less than 200 employees, Lindmark differentiates between small and medium-sized firms by defining small firms as firms with 50 employees or less and medium-sized firms as 50 to 199 employees.

Sources: H. Herzog (1982)

L. Lindmark (1983)

- 22<sup>b</sup> The definition of small and medium businesses is given by the Medium and Small Business Administration (MSBA), Ministry of Economic Affairs. For manufacturing, processing or handicraft enterprises, either definition (a) or (b) can be applied. The MSBA also defines the following businesses as "small and medium business":

1. A business which has expanded as a result of the assistance provided and now exceeds the criteria set by the government, shall still be considered as a small and medium business within two years beginning from the date of its expansion.

2. A business which has been formed by merging two or more small and medium businesses as a result of the assistance provided and now exceeds the criteria set by the government, shall still be considered as a small and medium business within three years beginning from the date of merger.
3. Businesses which are larger than the criteria set by the government, but form part of a group of enterprises which are given assistance by the aiding agency, shall be considered as small and medium businesses during the period of assistance.

<sup>23</sup>a When the ILO expert made the first study on small industries in Thailand, it was recommended that a small industry be defined as an industrial establishment with 50 or fewer employees.

b For research and analytical purposes, a small industry is defined as an industrial enterprise employing between 10 to 49 workers.

c The Small Industry Finance Office (SIFO), for the purpose of providing loans, defines a small industry as any enterprise whose total fixed assets not including land do not exceed two million baht.

Source: T. T. Soon (1983)

<sup>24</sup>Source: M. Cross (1983)

<sup>25</sup>See Appendix 2

## APPENDIX 2

## DEFINITIONS OF SMALL BUSINESS IN THE UNITED STATES

<u>AUTHORS</u>	<u>DEFINITIONS</u>
Anderson (1970)*	≤ \$3M annual sales (service)
Banks et al. (1987)	< 200
Bracker (1982)	< \$3M annual sales (drycleaners)
Bracker & Pearson (1986)	≤ \$0.4M annual revenues (drycleaners)
Chambers & Golde (1963)*	SBA definition (manufacturing)
Chicha & Julien (1979)*	5-199 employees; < \$10M annual sales (manufacturing)
Cohn & Lindberg (1971) *	\$2-\$10M annual sales (varied)
Cooper (1981)	< 500
Curtis (1983)	adapted from one proposed by the British Institute of Management: small businesses are those that are managed as such. In fact, the small business could be independently owned and operated, a subsidiary of another company with reasonable autonomy, or an autonomous division of a larger company. The significance of the definition lies in its reference to characteristic style brought about by dominance of the owner/CEO in the affairs of the business, the special relationship between the owner/CEO and the business, and the existence of some degree of resource poverty.

AUTHORSDEFINITIONS

Davig (1986)	15-280 employees (maturing apparel, foundry, fabricated metal products)
Dollinger & Kolchin (1986)	< 100 full-time employees (food products, textile products, food retail, and apparel retail)
Hastings (1961)*	< 500 employees (manufacturing)
Hornaday & Wheatley (1986)	5-500 full-time employees and < \$3M annual sales (retail apparel, eating, and drinking place)
Kilzer & Glausser (1984)	Total revenues from \$1M to \$15M or more, depending on the nature of the business. Whatever the size, however, small businesses may be categorized as those businesses for which there are fewer members on the management team than functions to be performed.
Lyons (1986)	< \$5M assets (life insurance)
Mayer & Goldstein (1961)*	≤ 200 employees (retail and service)
Najjar (1966)*	100-500 employees (manufacturing)

AUTHORSDEFINITIONS

Napi &amp; Vora (1980)

1. Florida's Department of Commerce defines a small business as "any business which is owned and operated independently of any other business entity and which has not more than 25 employees or not more than \$500,000 in gross receipts a year."

2. The Minnesota Department of Economic Security defines a small business as "any enterprise employing 500 or fewer employees." In contrast, the State House of Representatives' Task Force on Small Business defines a small business as "an enterprise having 20 or less employees."

3. Georgia's Department of Industry and Trade defines a small business as "any enterprise with annual sales of under \$500,000." A different definition is found in the state's Small Business Assistance Act, which states that "a small business is one which is independently owned and operated and has either fewer than 100 employees or less than \$1,00,000 in gross receipts."

Potts (1977)\*

≤ 20 employees  
(manufacturing)

Rice (1983)

≤ 50 employees  
(manufacturing, service,  
retailing)

Rice &amp; Hamilton (1979)

< 200 employees (service,  
wholesale, retailing)

Robinson (1980,1982)  
Robinson et al. (1984)

Retail, service, and  
manufacturing < 50 employees  
and < \$3M annual sales  
independently owned and  
operated

<u>AUTHORS</u>	<u>DEFINITIONS</u>
Robinson & Littlejohn (1981)	< 50 employees and < \$3M annual sales (retail, service, and manufacturing)
Robinson, Logan, & Salem (1986); Robinson, Salem, Logan, & Pearce (1986)	SBA definitions (food retailers)
Robinson & Pearce (1983)	Banking industry standards (U.S. banks)
SBA (1987)	See footnotes at end of table
Shaw et al. (1986)	SBA definition and at least 10 employees (varied)
Shuman (1975)	\$0.5M to less than \$1.0M net worth (varied)
Shuman (1985)	\$0.1-\$25.0M sales in 1978 and INC. 500 (varied)
Still (1974)	< 2000 employees (manufacturing, construction)
Stoner (1983)	2-150 employees (manufacturing)
Trow (1961)*; Christensen (1953)*	≤ 1000 employees
University of Iowa (1963)*	SBA definition (manufacturing)
Unni (1984)	SBA definitions (manufacturing, retailing)
Watts (1987)	< \$150 million in assets and independently owned and operated
Woodruff & Alexander (1958)*	SBA definition (manufacturing)

Note: The asterisk indicates that the author did not have access to the original studies; however, the sources appeared in Robinson & Pearce (1984) are listed in Appendix 9 and Appendix 10. The SBA definitions are shown below:

**FINAL RULE SIZE STANDARDS**

DIVISION A—AGRICULTURE		
Major Group 01—Agricultural Production—Crops		
0111-0191		\$0.5
Major Group 02—Agricultural Production—Livestock and Animal Specialties		
0211	Beef Cattle Feedlots (Custom)...	\$1.0
0212-0291	Livestock and Animal Specialties, Except 0211 and 0252.	\$0.5
0252	Chicken Eggs	\$7.0
Major Group 07—Agricultural Services		
All SICs		\$3.5
Major Group 08—Forestry		
All SICs		\$3.5
Major Group 09—Fishing, Hunting, and Trapping		
All SICs		\$2.0
DIVISION B—MINING		
Major Group 10—Metal Mining		
1011	Iron Ores	500
1021	Copper Ores	500
1031	Lead and Zinc Ores	500
1041	Gold Ores	500
1044	Silver Ores	500
1061	Ferrous Alloy Ores, Except Vanadium.	500
1081	Metal Mining Services	\$3.5
1094	Uranium-Radium-Vanadium Ores.	500

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
1099	Miscellaneous Metal Ores, N.E.C.	500
Major Group 12—Coal Mining		
1221*	Bituminous Coal and Lignite Surface Mining.	500
1222*	Bituminous Coal Underground Mining.	500
1231*	Anthracite Mining	500
1241*	Coal Mining Services	\$3.5
Major Group 13—Oil and Gas Extraction		
1311	Crude Petroleum and Natural Gas.	500
1321	Natural Gas Liquids	500
1381	Drilling Oil and Gas Wells	500
1382	Oil and Gas Field Exploration Services.	\$3.5
1389	Oil and Gas Field Services, N.E.C.	\$3.5
Major Group 14—Mining and Quarrying of Nonmetallic Minerals, Except Fuels		
1411	Dimension Stone	500
1422	Crushed and Broken Limestone.	500
1423	Crushed and Broken Granite	500
1429	Crushed and Broken Stone, N.E.C.	500
1442	Construction Sand and Gravel	500
1446	Industrial Sand	500
1455	Kaolin and Ball Clay	500
1459	Clay, Ceramic, and Refractory Minerals, N.E.C.	500
1474	Potash, Soda, and Borate Minerals.	500
1475	Phosphate Rock	500
1479	Chemical and Fertilizer Mineral Mining, N.E.C.	500
1481	Nonmetallic Minerals Services, Except Fuels.	\$3.5
1499	Miscellaneous Nonmetallic Minerals, Except Fuels.	500
DIVISION C—CONSTRUCTION		
Major Group 15—Building Construction—General Contractors and Operative Builders		
1521	General Contractors—Single-Family Houses.	\$17.0
1522	General Contractors—Residential Buildings, Other Than Single-Family.	\$17.0
1531	Operative Builders	\$17.0
1541	General Contractors—Industrial Buildings and Warehouses.	\$17.0
1542	General Contractors—Nonresidential Buildings, Other Than Industrial Buildings and Warehouses.	\$17.0

SIZE STANDARDS BY SIC INDUSTRY—  
Continued

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C.=Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
<b>Major Group 16—Heavy Construction Other Than Building Construction—Contractors</b>		
1611.....	Highway and Street Construction, Except Elevated Highways.	\$17.0
1622.....	Bridge, Tunnel, and Elevated Highway Construction.	\$17.0
1623.....	Water, Sewer, Pipeline, and Communications and Power Line Construction.	\$17.0
1629.....	Heavy Construction, Except Dredging, N.E.C..	\$17.0
1629.....	Dredging and Surface Cleanup Activities.	\$13.5 *
<b>Major Group 17—Construction—Special Trade Contractors</b>		
1711.....	Plumbing, Heating, and Air-Conditioning.	\$7.0
1721.....	Painting and Paper Hanging.....	\$7.0
1731.....	Electrical Work.....	\$7.0
1741.....	Masonry, Stone Setting, and Other Stone Work.	\$7.0
1742.....	Plastering, Drywall, Acoustical and Insulation Work.	\$7.0
1743.....	Terrazzo, Tile, Marble, and Mosaic Work.	\$7.0
1751.....	Carpentry Work.....	\$7.0
1752.....	Floor Laying and Other Floor Work, N.E.C.	\$7.0
1761.....	Roofing, Siding, and Sheet Metal Work.	\$7.0
1771.....	Concrete Work.....	\$7.0
1781.....	Water Well Drilling.....	\$7.0
1791.....	Structural Steel Erection.....	\$7.0
1793.....	Glass and Glazing Work.....	\$7.0
1794.....	Excavation Work.....	\$7.0
1795.....	Wrecking and Demolition Work..	\$7.0
1796.....	Installation or Erection of Building Equipment, N.E.C.	\$7.0
1799.....	Special Trade Contractors, N.E.C.	\$7.0
.....	Base Housing Maintenance *o ..	\$7.0
<b>DIVISION D—MANUFACTURING *</b>		
<b>Major Group 20—Food and Kindred Products</b>		
2011.....	Meat Packing Plants.....	500
2013.....	Sausages and Other Prepared Meat Products.	500
2015*.....	Poultry Slaughtering and Processing.	500
2021.....	Creamery Butter.....	500
2022.....	Natural, Processed, and Imitation Cheese.	500
2023.....	Dry, Condensed, and Evaporated Dairy Products.	500
2024.....	Ice Cream and Frozen Desserts.	500
2026.....	Fluid Milk.....	500
2032.....	Canned Specialties.....	1,000

SIZE STANDARDS BY SIC INDUSTRY—  
Continued

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C.=Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
2033.....	Canned Fruits, Vegetables, Preserves, Jams, and Jellies *.	500
2034.....	Dried and Dehydrated Fruits, Vegetables, and Soup Mixes.	500
2035.....	Pickled Fruits and Vegetables, Vegetable Sauces and Seasonings, and Salad Dressings.	500
2037.....	Frozen Fruits, Fruit Juices, and Vegetables.	500
2038.....	Frozen Specialties, N.E.C.....	500
2041.....	Flour and Other Grain Mill Products.	500
2043.....	Cereal Breakfast Foods.....	1,000
2044.....	Rice Milling.....	500
2045.....	Prepared Flour Mixes and Doughs.	500
2046.....	Wet Corn Milling.....	750
2047.....	Dog and Cat Food.....	500
2048.....	Prepared Feeds and Feed Ingredients for Animals and Fowls, Except Dogs and Cats.	500
2051.....	Bread and Other Bakery Products, Except Cookies and Crackers.	500
2052.....	Cookies and Crackers.....	750
2053*.....	Frozen Bakery Products, Except Bread.	500
2061.....	Cane Sugar, Except Refining.....	500
2062.....	Cane Sugar Refining.....	750
2063.....	Beet Sugar.....	750
2064*.....	Candy and Other Confectionery Products.	500
2066.....	Chocolate and Cocoa Products.	500
2067.....	Chewing Gum.....	500
2068*.....	Salted and Roasted Nuts and Seeds.	500
2074.....	Cottonseed Oil Mills.....	500
2075.....	Soybean Oil Mills.....	500
2076.....	Vegetable Oil Mills, Except Corn, Cottonseed, and Soybean.	1,000
2077.....	Animals and Manne Fats and Oils.	500
2079.....	Shortening, Table Oils, Margarine, and Other Edible Fats and Oils, N.E.C..	750
2082.....	Malt Beverages.....	500
2083.....	Malt.....	500
2084.....	Wines, Brandy, and Brandy Spirits.	500
2085.....	Distilled and Blended Liquors....	750
2086.....	Bottled and Canned Soft Drinks and Carbonated Waters.	500
2087.....	Flavoring Extracts and Flavoring Syrups, N.E.C.	500
2091.....	Canned and Cured Fish and Seafoods.	500
2092.....	Prepared Fresh or Frozen Fish and Seafoods.	500
2095.....	Roasted Coffee.....	500

SIZE STANDARDS BY SIC INDUSTRY—  
Continued

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
2096*	Potato Chips, Corn Chips, and Similar Snacks.	500
2097	Manufactured Ice.....	500
2098	Macaroni, Spaghetti, Vermicelli, and Noodles.	500
2099	Food Preparations, N.E.C. ....	500
Major Group 21—Tobacco Products		
2111	Cigarettes .....	1,000
2121	Cigars.....	500
2131	Chewing and Smoking Tobacco and Snuff.	500
2141	Tobacco Stemming and Redrying.	500
Major Group 22—Textile Mill Products		
2211	Broadwoven Fabric Mills, Cotton.	1,000
2221	Broadwoven Fabric Mills, Manmade Fiber and Silk.	500
2231	Broadwoven Fabric Mills, Wool (Including Dyeing and Finishing).	500
2241	Narrow Fabric and Other Smallwares Mills: Cotton, Wool, Silk and Manmade Fiber.	500
2251	Women's Full-Length and Knee-Length Hosiery, Except Socks.	500
2252	Hosiery, N.E.C. ....	500
2253	Knit Outerwear Mills.....	500
2254	Knit Underwear and Nightwear Mills.	500
2257	Weft Knit Fabric Mills.....	500
2258	Lace and Warp Knit Fabric Mills.	500
2259	Knitting Mills, N.E.C. ....	500
2261	Finishers of Broadwoven Fabrics of Cotton.	1,000
2262	Finishers of Broadwoven Fabrics of Manmade Fiber and Silk.	500
2269	Finishers of Textiles, N.E.C. ....	500
2273*	Carpets and Rugs.....	500
2281	Yarn Spinning Mills.....	500
2282	Yarn Texturizing, Throwing, Twisting, and Winding Mills.	500
2284	Thread Mills.....	500
2295	Coated Fabrics, Not Rubberized.	1,000
2296	Tire Cord and Fabrics.....	1,000
2297	Nonwoven Fabrics.....	500
2298	Cordage and Twine.....	500
2299	Textile Goods, N.E.C. ....	500
Major Group 23—Apparel and Other Finished Products Made From Fabrics and Similar Materials		
2311	Men's and Boys' Suits, Coats and Overcoats.	500
2321	Men's and Boys' Shirts, Except Work Shirts.	500

SIZE STANDARDS BY SIC INDUSTRY—  
Continued

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
2322	Men's and Boys' Underwear and Nightwear.	500
2323	Men's and Boys' Neckwear.....	500
2325*	Men's and Boys' Separate Trousers and Slacks.	500
2326*	Men's and Boys' Work Clothing.	500
2329	Men's and Boys' Clothing, N.E.C.	500
2331	Women's, Misses', and Juniors' Blouses and Shirts.	500
2335	Women's, Misses', and Juniors' Dresses.	500
2337	Women's, Misses', and Juniors' Suits, Skirts, and Coats.	500
2339	Women's, Misses', and Juniors' Outerwear, N.E.C.	500
2341	Women's, Misses', Children's, and Infants' Underwear and Nightwear.	500
2342	Brassieres, Girdles, and Allied Garments.	500
2353*	Hats, Caps, and Millinery .....	500
2361	Girls', Children's, and Infants' Dresses, Blouses, and Shirts.	500
2369	Girls', Children's, and Infants' Outerwear, N.E.C.	500
2371	Fur Goods.....	500
2381	Dress and Work Gloves, Except Knit and All-Leather.	500
2384	Robes and Dressing Gowns.....	500
2385	Waterproof Outerwear.....	500
2386	Leather and Sheep-Lined Clothing.	500
2387	Apparel Belts.....	500
2389	Apparel and Accessories, N.E.C.	500
2391	Curtains And Draperies.....	500
2392	Housefurnishings, Except Curtains and Draperies.	500
2393	Textile Bags.....	500
2394	Canvas and Related Products.....	500
2395	Pleating, Decorative and Novelty Stitching, and Tucking for the Trade.	500
2396	Automotive Trimmings, Apparel Findings, and Related Products.	500
2397	Schiffli Machine Embroideries.....	500
2399	Fabricated Textile Products, N.E.C.	500
Major Group 24—Lumber and Wood Products, Except Furniture		
2411	Logging.....	500
2421	Sawmills and Planing Mills, General.	500
2426	Hardwood Dimension and Flooring Mills.	500
2429	Special Product Sawmills, N.E.C.	500
2431	Millwork.....	500
2434	Wood Kitchen Cabinets.....	500

SIZE STANDARDS BY SIC INDUSTRY—  
Continued

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
2435.....	Hardwood Veneer and Plywood.	500
2436.....	Softwood Veneer and Plywood.	500
2439.....	Structural Wood Members, N.E.C.	500
2441.....	Nailed and Lock Corner Wood Boxes and Shook.	500
2448.....	Wood Pallets and Skids.....	500
2449.....	Wood Containers, N.E.C.....	500
2451.....	Mobile Homes.....	500
2452.....	Prefabricated Wood Buildings and Components.	500
2491.....	Wood Preserving.....	500
2493*.....	Reconstituted Wood Products.....	500
2499.....	Wood Products, N.E.C.....	500

Major Group 25—Furniture and Fixtures

2511.....	Wood Household Furniture, Except Upholstered.	500
2512.....	Wood Household Furniture, Upholstered.	500
2514.....	Metal Household Furniture.....	500
2515.....	Mattresses, Foundations, and Convertible Beds.	500
2517.....	Wood Television, Radio, Phonograph, and Sewing Machine Cabinets.	500
2519.....	Household Furniture, N.E.C.....	500
2521.....	Wood Office Furniture.....	500
2522.....	Office Furniture, Except Wood.....	500
2531.....	Public Building and Related Furniture.	500
2541.....	Wood Office and Store Fixtures, Partition, Shelving, and Lockers.	500
2542.....	Office and Store Fixtures, Partitions, Shelving, and Lockers, Except Wood.	500
2591.....	Drapery Hardware and Window Blinds and Shades.	500
2599.....	Furniture and Fixtures, N.E.C.....	500

Major Group 26—Paper and Allied Products

2611.....	Pulp Mills.....	750
2621.....	Paper Mills.....	750
2631.....	Paperboard Mills.....	750
2652.....	Setup Paperboard Boxes.....	500
2653.....	Corrugated and Solid Fiber Boxes.	500
2655.....	Fiber Cans, Tubes, Drums, and Similar Products.	500
2656*.....	Sanitary Food Containers, Except Folding.	750
2657*.....	Folding Paperboard Boxes, Including Sanitary.	750
2671*.....	Packaging Paper and Plastics Film, Coated and Laminated.	500
2672*.....	Coated and Laminated Paper, N.E.C.	500
2673*.....	Plastics, Foil, and Coated Paper Bags.	500
2674*.....	Uncoated Paper and Multiwall Bags.	500

SIZE STANDARDS BY SIC INDUSTRY—  
Continued

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
2675*.....	Die-Cut Paper and Paperboard and Cardboard.	500
2676*.....	Sanitary Paper Products.....	500
2677*.....	Envelopes.....	500
2678*.....	Stationery, Tablets, and Related Products.	500
2679*.....	Converted Paper and Paperboard Products, N.E.C.	500

Major Group 27—Printing, Publishing, and Allied Industries

2711.....	Newspapers: Publishing, or Publishing and Printing.	500
2721.....	Periodicals: Publishing, or Publishing and Printing.	500
2731.....	Books: Publishing, or Publishing and Printing.	500
2732.....	Book Printing.....	500
2741.....	Miscellaneous Publishing.....	500
2752.....	Commercial Printing, Lithographic.	500
2754.....	Commercial Printing, Gravure.....	500
2759*.....	Commercial Printing, N.E.C.....	500
2761.....	Manifold Business Forms.....	500
2771.....	Greeting Cards.....	500
2782.....	Blankbooks, Looseleaf Binders and Devices.	500
2789.....	Bookbinding and Related Work.	500
2791.....	Typesetting.....	500
2796*.....	Platemaking and Related Services.	500

Major Group 28—Chemicals and Allied Products

2812.....	Alkalies and Chlorine.....	1,000
2813.....	Industrial Gases.....	1,000
2816.....	Inorganic Pigments.....	1,000
2819.....	Industrial Inorganic Chemicals, N.E.C.	1,000
2821.....	Plastics Materials, Synthetic Resins, and Nonvulcanizable Elastomers.	750
2822.....	Synthetic Rubber (Vulcanizable Elastomers).	1,000
2823.....	Cellulosic Manmade Fibers.....	1,000
2824.....	Manmade Organic Fibers, Except Cellulosic.	1,000
2833.....	Medicinal Chemicals and Botanical Products.	750
2834.....	Pharmaceutical Preparations.....	750
2835*.....	In Vitro and In Vivo Diagnostic Substances.	500
2836*.....	Biological Products, Except Diagnostic Substances.	500
2841.....	Soap and Other Detergents, Except Specialty Cleaners.	750
2842.....	Specialty Cleaning, Polishing, and Sanitation Preparations.	500
2843.....	Surface Active Agents, Finishing Agents, Sulfonated Oils, and Assistants.	500
2844.....	Perfumes, Cosmetics, and Other Toilet Preparations.	500

SIZE STANDARDS BY SIC INDUSTRY—  
Continued

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
2851.....	Paints, Varnishes, Lacquers, Enamels, and Allied Products.	500
2861.....	Gum and Wood Chemicals.....	500
2865.....	Cyclic Organic Crudes and Intermediates, and Organic Dyes and Pigments.	750
2869.....	Industrial Organic Chemicals, N.E.C.	1,000
2873.....	Nitrogenous Fertilizers.....	1,000
2874.....	Phosphatic Fertilizers.....	500
2875.....	Fertilizers, Mixing Only.....	500
2879.....	Pesticides and Agricultural Chemicals, N.E.C.	500
2891.....	Adhesives and Sealants.....	500
2892.....	Explosives.....	750
2893.....	Printing Ink.....	500
2895.....	Carbon Black.....	500
2899.....	Chemicals and Chemical Preparations, N.E.C.	500
Major Group 29—Petroleum Refining and Related Industries		
2911.....	Petroleum Refining *	1,500
2951.....	Asphalt Paving Mixtures and Blocks.	500
2952.....	Asphalt Felts and Coatings.....	750
2992.....	Lubricating Oils and Greases.....	500
2999.....	Products of Petroleum and Coal, N.E.C.	500
Major Group 30—Rubber and Miscellaneous Plastics Products		
3011.....	Tires and Inner Tubes *	1,000
3021.....	Rubber and Plastics Footwear...	1,000
3052*	Rubber and Plastics Hose and Belting.	500
3053*	Gaskets, Packing, and Sealing Devices.	500
3061*	Molded, Extruded, and Lathe-Cut Mechanical Rubber Goods.	500
3069.....	Fabricated Rubber Products, N.E.C.	500
3081*	Unsupported Plastics Film and Sheet.	500
3082*	Unsupported Plastics Profile Shapes.	500
3083*	Laminated Plastics Plate, Sheet, and Profile Shapes.	500
3084*	Plastics Pipe.....	500
3085*	Plastics Bottles.....	500
3086*	Plastics Foam Products.....	500
3087*	Custom Compounding of Purchased Plastics Resins.	500
3088*	Plastics Plumbing Fixtures.....	500
3089*	Plastics Products, N.E.C.....	500
Major Group 31—Leather and Leather Products		
3111.....	Leather Tanning and Finishing...	500
3131.....	Boot and Shoe Cut Stock and Findings.	500
3142.....	House Slippers.....	500

SIZE STANDARDS BY SIC INDUSTRY—  
Continued

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
3143.....	Men's Footwear, Except Athletic.	500
3144.....	Women's Footwear, Except Athletic.	500
3149.....	Footwear, Except Rubber, N.E.C.	500
3151.....	Leather Gloves and Mittens.....	500
3161.....	Luggage.....	500
3171.....	Women's Handbags and Purses.	500
3172.....	Personal Leather Goods, Except Women's Handbags and Purses.	500
3199.....	Leather Goods, N.E.C.....	500
Major Group 32—Stone, Clay, Glass, and Concrete Products		
3211.....	Flat Glass.....	1,000
3221.....	Glass Containers.....	750
3229.....	Pressed and Blown Glass and Glassware, N.E.C.	750
3231.....	Glass Products, Made of Purchased Glass.	500
3241.....	Cement, Hydraulic.....	750
3251.....	Brick and Structural Clay Tile.....	500
3253.....	Ceramic Wall and Floor Tile.....	500
3255.....	Clay Refractories.....	500
3259.....	Structural Clay Products, N.E.C.	500
3261.....	Vitreous China Plumbing Fixtures and China and Earthenware Fittings and Bathroom Accessories.	750
3262.....	Vitreous China Table and Kitchen Articles.	500
3263.....	Fine Earthenware (Whiteware) Table and Kitchen Articles.	500
3264.....	Porcelain Electrical Supplies.....	500
3269.....	Pottery Products, N.E.C.....	500
3271.....	Concrete Block and Brick.....	500
3272.....	Concrete Products, Except Block and Brick.	500
3273.....	Ready Mixed Concrete.....	500
3274.....	Lime.....	500
3275.....	Gypsum Products.....	1,000
3281.....	Cut Stone and Stone Products..	500
3281.....	Abrasive Products.....	500
3292.....	Asbestos Products.....	750
3295.....	Minerals and Earths, Ground or Otherwise Treated.	500
3296.....	Mineral Wool.....	750
3297.....	Nonclay Refractories.....	750
3299.....	Nonmetallic Mineral Products, N.E.C.	500
Major Group 33—Primary Metal Industries		
3312.....	Steel Works, Blast Furnaces (Including Coke Ovens), and Rolling Mills.	1,000
3313.....	Electrometallurgical Products, Except Steel.	750
3315.....	Steel Wiredrawing and Steel Nails and Spikes.	1,000
3316.....	Cold-Rolled Steel Sheet, Strip, and Bars.	1,000

SIZE STANDARDS BY SIC INDUSTRY—  
Continued

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
3317.....	Steel Pipe and Tubes.....	1,000
3321.....	Gray and Ductile Iron Foundries.	500
3322.....	Malleable Iron Foundries.....	500
3324.....	Steel Investment Foundries.....	500
3325.....	Steel Foundries, N.E.C.....	500
3331.....	Primary Smelting and Refining of Copper.	1,000
3334.....	Primary Production of Aluminum.	1,000
3339.....	Primary Smelting and Refining of Nonferrous Metals, Except Copper and Aluminum.	750
3341.....	Secondary Smelting and Refining of Nonferrous Metals.	500
3351.....	Rolling, Drawing, and Extruding of Copper.	750
3353.....	Aluminum Sheet, Plate, and Foil.	750
3354.....	Aluminum Extruded Products.....	750
3355.....	Aluminum Rolling and Drawing, N.E.C.	750
3356.....	Rolling, Drawing, and Extruding of Nonferrous Metals, Except Copper and Aluminum.	750
3357.....	Drawing and Insulating of Nonferrous Wire.	1,000
3363*	Aluminum Die-Castings.....	500
3364*	Nonferrous Die-Castings, Except Aluminum.	500
3365*	Aluminum Foundries.....	500
3366*	Copper Foundries.....	500
3369.....	Nonferrous Foundries, Except Aluminum and Copper.	500
3398.....	Metal Heat Treating.....	750
3399.....	Primary Metal Products, N.E.C.....	750

Major Group 34—Fabricated Metal Products, Except Machinery and Transportation Equipment.

3411.....	Metal Cans.....	1,000
3412.....	Metal Shipping Barrels, Drums, Kegs, and Pails.	500
3421.....	Cutlery.....	500
3423.....	Hand and Edge Tools, Except Machine Tools and Hand-saws.	500
3425.....	Saw Blades and Handsaws.....	500
3429.....	Hardware, N.E.C.....	500
3431.....	Enameled Iron and Metal Sanitary Ware.	750
3432.....	Plumbing Fixture Fittings and Trim.	500
3433.....	Heating Equipment, Except Electric and Warm Air Furnaces.	500
3441.....	Fabricated Structural Metal.....	500
3442.....	Metal Doors, Sash, Frames, Molding, and Trim.	500
3443.....	Fabricated Plate Work (Boiler Shops).	500
3444.....	Sheet Metal Work.....	500

SIZE STANDARDS BY SIC INDUSTRY—  
Continued

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
3446.....	Architectural and Ornamental Metal Work.	500
3448.....	Prefabricated Metal Buildings and Components.	500
3449.....	Miscellaneous Structural Metal Work.	500
3451.....	Screw Machine Products.....	500
3452.....	Bolts, Nuts, Screws, Rivets, and Washers.	500
3462.....	Iron and Steel Forgings.....	500
3463.....	Nonferrous Forgings.....	500
3465.....	Automotive Stampings.....	500
3466.....	Crowns and Closures.....	500
3469.....	Metal Stampings, N.E.C.....	500
3471.....	Electroplating, Plating, Polishing, Anodizing, and Coloring.	500
3479.....	Coating, Engraving, and Allied Services, N.E.C.	500
3482.....	Small Arms Ammunition.....	1,000
3483.....	Ammunition, Except for Small Arms.	1,500
3484.....	Small Arms.....	1,000
3489.....	Ordnance and Accessories, N.E.C.	500
3491*	Industrial Valves.....	500
3492*	Fluid Power Valves and Hose Fittings.	500
3493.....	Steel Springs, Except Wire.....	500
3494.....	Valves and Pipe Fittings, N.E.C.	500
3495.....	Wire Springs.....	500
3496.....	Miscellaneous Fabricated Wire Products.	500
3497.....	Metal Foil and Leaf.....	500
3498.....	Fabricated Pipe and Pipe Fittings.	500
3499.....	Fabricated Metal Products, N.E.C.	500

Major Group 35—Industrial and Commercial Machinery and Computer Equipment

3511.....	Steam, Gas, and Hydraulic Turbines, and Turbine Generator Set Units.	1,000
3519.....	Internal Combustion Engines, N.E.C.	1,000
3523.....	Farm Machinery and Equipment.	500
3524.....	Lawn and Garden Tractors and Home Lawn and Garden Equipment.	500
3531.....	Construction Machinery and Equipment.	750
3532.....	Mining Machinery and Equipment, Except Oil and Gas Field Machinery and Equipment.	500
3533.....	Oil and Gas Field Machinery and Equipment.	500
3534.....	Elevators and Moving Stairways.	500
3535.....	Conveyors and Conveying Equipment.	500

SIZE STANDARDS BY SIC INDUSTRY—  
 Continued

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
3536	Overhead Traveling Cranes, Hoists, and Monorail Systems.	500
3537	Industrial Trucks, Tractors, Trailers, and Stackers.	750
3541	Machine Tools, Metal Cutting Types.	500
3542	Machine Tools, Metal Forming Types.	500
3543*	Industrial Patterns	500
3544	Special Dies and Tools, Die Sets, Jigs and Fixtures, and Industrial Molds.	500
3545	Cutting Tools, Machine Tool Accessories, and Machinists' Precision Measuring Devices.	500
3546	Power-Driven Handtools	500
3547	Rolling Mill Machinery and Equipment	500
3548*	Electric and Gas Welding and Soldering Equipment.	500
3549	Metalworking Machinery, N.E.C.	500
3552	Textile Machinery	500
3553	Woodworking Machinery	500
3554	Paper Industries Machinery	500
3555	Printing Trades Machinery and Equipment.	500
3556*	Food Products Machinery	500
3559	Special Industry Machinery, N.E.C.	500
3561	Pumps and Pumping Equipment	500
3562	Ball and Roller Bearings	750
3563	Air and Gas Compressors	500
3564	Industrial and Commercial Fans and Blowers and Air Purification Equipment.	500
3565*	Packaging Machinery	500
3566	Speed Changers, Industrial High-Speed Drives, and Gears.	500
3567	Industrial Process Furnaces and Ovens.	500
3568	Mechanical Power Transmission Equipment, N.E.C.	500
3569	General Industrial Machinery and Equipment, N.E.C.	500
3571*	Electronic Computers	1,000
3572*	Computer Storage Devices	1,000
3575*	Computer Terminals	1,000
3577*	Computer Peripheral Equipment, N.E.C.	1,000
3578*	Calculating and Accounting Machines, Except Electronic Computers.	1,000
3579	Office Machines, N.E.C.	500
3581	Automatic Vending Machines	500
3582	Commercial Laundry, Drycleaning, and Pressing Machines.	500
3585	Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment.	750
3586	Measuring and Dispensing Pumps.	500

 SIZE STANDARDS BY SIC INDUSTRY—  
 Continued

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
3589	Service Industry Machinery, N.E.C.	500
3592	Carburetors, Pistons, Piston Rings, and Valves.	500
3593*	Fluid Power Cylinders and Actuators.	500
3594*	Fluid Power Pumps and Motors.	500
3596*	Scales and Balances, Except Laboratory.	500
3599	Industrial and Commercial Machinery and Equipment, N.E.C.	500
Major Group 36—Electronic and Other Electrical Equipment and Components, Except Computer Equipment		
3612	Power, Distribution, and Specialty Transformers.	750
3613	Switchgear and Switchboard Apparatus.	750
3621	Motors and Generators	1,000
3624	Carbon and Graphite Products	750
3625*	Relays and Industrial Controls	750
3629	Electrical Industrial Apparatus, N.E.C.	500
3631	Household Cooking Equipment	750
3632	Household Refrigerators and Home and Farm Freezers.	1,000
3633	Household Laundry Equipment	1,000
3634	Electric Housewares and Fans	750
3635	Household Vacuum Cleaners	750
3639	Household Appliances, N.E.C.	500
3641	Electric Lamp Bulbs and Tubes.	1,000
3643	Current-Carrying Wiring Devices.	500
3644	Noncurrent-Carrying Wiring Devices.	500
3645	Residential Electric Lighting Fixtures.	500
3646	Commercial, Industrial, and Institutional Electric Lighting Fixtures.	500
3647	Vehicular Lighting Equipment	500
3648	Lighting Equipment, N.E.C.	500
3651	Household Audio and Video Equipment.	750
3652	Phonograph Records and Pre-recorded Audio Tapes and Disks.	750
3661	Telephone and Telegraph Apparatus.	1,000
3663*	Radio and Television Broadcasting and Communications Equipment.	750
3669*	Communications Equipment, N.E.C.	750
3671	Electron Tubes	750
3672*	Printed Circuit Boards	500
3674	Semiconductors and Related Devices.	500
3675	Electronic Capacitors	500
3676	Electronic Resistors	500

SIZE STANDARDS BY SIC INDUSTRY—  
Continued

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
3677.....	Electronic Coils, Transformers, and Other Inductors.	500
3678.....	Electronic Connectors.....	500
3679.....	Electronic Components, N.E.C.....	500
3691.....	Storage Batteries.....	500
3692.....	Primary Batteries, Dry and Wet.....	1,000
3694.....	Electrical Equipment for Internal Combustion Engines.	750
3695*.....	Magnetic and Optical Recording Media.	1,000
3699.....	Electrical Machinery, Equipment, and Supplies, N.E.C.	750
Major Group 37—Transportation Equipment		
3711.....	Motor Vehicles and Passenger Car Bodies.	1,000
3713.....	Truck and Bus Bodies.....	500
3714.....	Motor Vehicles Parts and Accessories.	500
3715.....	Truck Trailers.....	500
3716.....	Motor Homes.....	1,000
3721.....	Aircraft.....	1,500
3724.....	Aircraft Engines and Engine Parts.	1,000
3728.....	Aircraft Parts and Auxiliary Equipment, N.E.C. 11.	1,000
3731.....	Shipbuilding and Repair of Nuclear Propelled Ships.	1,000
	Shipbuilding of Nonnuclear Propelled Ships and Nonpropelled Ships.	1,000
	Ship Repair (Including Overhauls and Conversions) Performed on Nonnuclear Propelled and Nonpropelled Ships East of the 108 Meridian.	1,000
	Ship Repair (Including Overhauls and Conversions) Performed on Nonnuclear Propelled and Nonpropelled Ships West of the 108 Meridian.	1,000
3732.....	Boat Building and Repairing.....	500
3743.....	Railroad Equipment.....	1,000
3751.....	Motorcycles, Bicycles, and Parts.	500
3781.....	Guided Missiles and Space Vehicles.	1,000
3764.....	Guided Missiles and Space Vehicle Propulsion Units and Propulsion Unit Parts.	1,000
3769.....	Guided Missile and Space Vehicle Parts and Auxiliary Equipment, N.E.C.	1,000
3792.....	Travel Trailers and Campers.....	500
3795.....	Tanks and Tank Components.....	1,000
3799.....	Transportation Equipment, N.E.C.	500

SIZE STANDARDS BY SIC INDUSTRY—  
Continued

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
Major Group 38—Measuring, Analyzing, and Controlling Instruments; Photographic, Medical, and Optical Goods; Watches and Clocks		
3812*.....	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical Systems and Instruments.	750
3821*.....	Laboratory Apparatus and Furniture.	500
3822.....	Automatic Controls for Regulating Residential and Commercial Environments and Appliances.	500
3823.....	Industrial Instruments for Measurement, Display, and Control of Process Variables; and Related Products.	500
3824.....	Totalizing Fluid Meters and Counting Devices.	500
3825.....	Instruments for Measuring and Testing of Electricity and Electrical Signals.	500
3826*.....	Laboratory Analytical Instruments.	500
3827*.....	Optical Instruments and Lenses.	500
3829.....	Measuring and Controlling Devices, N.E.C.	500
3841.....	Surgical and Medical Instruments and Apparatus.	500
3842.....	Orthopedic, Prosthetic, and Surgical Appliances and Supplies.	500
3843.....	Dental Equipment and Supplies.	500
3844*.....	X-Ray Apparatus and Tubes and Related Irradiation Apparatus.	500
3845*.....	Electromedical and Electrotherapeutic Apparatus.	500
3851.....	Ophthalmic Goods.....	500
3861.....	Photographic Equipment and Supplies.	500
3873.....	Watches, Clocks, Clockwork Operated Devices, and Parts.	500
Major Group 39—Miscellaneous Manufacturing Industries		
3911.....	Jewelry, Precious Metal.....	500
3914.....	Silverware, Plated Ware, and Stainless Steel Ware.	500
3915.....	Jewelers' Findings and Materials, and Lapidary Work.	500
3931.....	Musical Instruments.....	500
3942.....	Dolls and Stuffed Toys.....	500
3944.....	Games, Toys, and Children's Vehicles, Except Dolls and Bicycles.	500
3949.....	Sporting and Athletic Goods, N.E.C.	500
3951.....	Pens, Mechanical Pencils, and Parts.	500
3952.....	Lead Pencils, Crayons, and Artists' Materials.	500

**SIZE STANDARDS BY SIC INDUSTRY—  
Continued**

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
3953.....	Marking Devices.....	500
3955.....	Carbon Paper and Inked Ribbons.	500
3961.....	Costume Jewelry and Costume Novelties, Except Precious Metal.	500
3965*.....	Fasteners, Buttons, Needles, and Pins.	500
3991.....	Brooms and Brushes.....	500
3993.....	Signs and Advertising Specialties.	500
3996.....	Linoleum, Asphalted-Felt-Base, and Other Hard Surface Floor Coverings, N.E.C.	750
3999.....	Manufacturing Industries, N.E.C.	500
<b>DIVISION E—TRANSPORTATION, COMMUNICATIONS, ELECTRIC, GAS, AND SANITARY SERVICES</b>		
<b>Major Group 40—Railroad Transportation</b>		
4011.....	Railroads, Line-Haul Operating...	1,500
4013.....	Railroad Switching and Terminal Establishments.	500
<b>Major Group 41—Local and Suburban Transit and Interurban Highway Passenger Transportation</b>		
4111.....	Local and Suburban Transit.....	\$3.5
4119.....	Local Passenger Transportation, N.E.C.	\$3.5
4121.....	Taxicabs.....	\$3.5
4131.....	Intercity and Rural Bus Transportation.	\$3.5
4141.....	Local Bus Charter Service.....	\$3.5
4142.....	Bus Charter Service, Except Local.	\$3.5
4151.....	School Buses.....	\$3.5
4173*.....	Terminal and Service Facilities for Motor Vehicle Passenger Transportation.	\$3.5
<b>Major Group 42—Motor Freight Transportation and Warehousing</b>		
4212.....	Local Trucking Without Storage.	\$12.5 <sup>7</sup>
4213.....	Trucking, Except Local.....	\$12.5
4214.....	Local Trucking With Storage.....	\$12.5
4215*.....	Courier Services, Except by Air..	\$12.5
4221.....	Farm Product Warehousing and Storage.	\$12.5
4222.....	Refrigerated Warehousing and Storage.	\$12.5
4225.....	General Warehousing and Storage.	\$12.5
4226.....	Special Warehousing and Storage, N.E.C.	\$12.5
4231.....	Terminal and Joint Terminal Maintenance Facilities for Motor Freight Transportation.	\$3.5

**SIZE STANDARDS BY SIC INDUSTRY—  
Continued**

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
<b>Major Group 44—Water Transportation<sup>a</sup></b>		
4412.....	Deep Sea Foreign Transportation of Freight.	500
4424*.....	Deep Sea Domestic Transportation of Freight.	500
4432*.....	Freight Transportation on the Great Lakes—St. Lawrence Seaway.	500
4449*.....	Water Transportation of Freight, N.E.C.	500
4481*.....	Deep Sea Transportation of Passengers, Except by Ferry.	500
4482*.....	Ferries.....	500
4489*.....	Water Transportation of Passengers, N.E.C.	500
4491*.....	Marine Cargo Handling.....	\$12.5
4492*.....	Towing and Tugboat Services.....	\$3.5
4493*.....	Marinas.....	\$3.5
4499*.....	Water Transportation Services, N.E.C.	\$3.5
<b>Major Group 45—Transportation by Air<sup>b</sup></b>		
4512.....	Air Transportation, Scheduled....	<sup>a</sup> 1,500
4513*.....	Air Courier Services.....	<sup>a</sup> 1,500
4522*.....	Air Transportation, Nonscheduled.	<sup>a</sup> 1,500
4581*.....	Airports, Flying Fields, and Airport Terminal Services.	\$3.5
<b>Major Group 46—Pipelines, Except Natural Gas</b>		
4612.....	Crude Petroleum Pipelines.....	1,500
4613.....	Refined Petroleum Pipelines.....	1,500
4619.....	Pipelines, N.E.C.....	\$17.0
<b>Major Group 47—Transportation Services</b>		
4724*.....	Travel Agencies.....	<sup>10</sup> \$0.5
4725*.....	Tour Operators.....	\$3.5
4729*.....	Arrangement of Passenger Transportation, N.E.C.	\$3.5
4731*.....	Arrangement of Transportation of Freight and Cargo.	\$12.5
4741*.....	Rental of Railroad Cars.....	\$3.5
4783.....	Packing and Crating.....	\$12.5
4785*.....	Fixed Facilities and Inspection and Weighing Services for Motor Vehicle Transportation.	\$3.5
4789.....	Transportation Services, N.E.C..	\$3.5
<b>Major Group 48—Communications</b>		
4812*.....	Radiotelephone Communications.	1,500
4813*.....	Telephone Communications, Except Radiotelephone.	1,500
4832.....	Radio Broadcasting Stations.....	\$3.5
4833.....	Television Broadcasting Stations.	\$7.0
4841*.....	Cable and Other Pay Television Services.	\$7.5
4899.....	Communications Services, N.E.C.	\$7.5

SIZE STANDARDS BY SIC INDUSTRY—  
Continued

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
Major Group 49—Electric, Gas, and Sanitary Services		
4911.....	Electric Services.....	4 million megawatt hrs.
4924.....	Natural Gas Distribution.....	500
4941.....	Water Supply.....	\$3.5
4952.....	Sewerage Systems.....	\$3.5
4953.....	Refuse Systems <sup>11</sup> .....	\$6.0
4959.....	Sanitary Services, N.E.C.....	\$3.5
4961.....	Steam and Air-Conditioning Supply.....	\$6.0
4971.....	Irrigation Systems.....	\$3.5
DIVISION F—WHOLESALE TRADE (Not Applicable to Government procurement of supplies. The nonmanufacturer size standard of 500 employees shall be used for purposes of Government procurement of supplies)		
Major Group 50—Wholesale Trade—Durable Goods		
5012.....	Automobiles and Other Motor Vehicles.....	100
5013.....	Motor Vehicle Supplies and New Parts.....	100
5014.....	Tires and Tubes.....	100
5015*.....	Motor Vehicle Parts, Used.....	100
5021.....	Furniture.....	100
5023.....	Homefurnishings.....	100
5031.....	Lumber, Plywood, Millwork, and Wood Panels.....	100
5032*.....	Brick, Stone, and Related Construction Materials.....	100
5033*.....	Roofing, Siding, and Insulation Materials.....	100
5039.....	Construction Materials, N.E.C.....	100
5043.....	Photographic Equipment and Supplies.....	100
5044*.....	Office Equipment.....	100
5045*.....	Computers and Computer Peripheral Equipment and Software.....	100
5046*.....	Commercial Equipment, N.E.C.....	100
5047*.....	Medical, Dental, and Hospital Equipment and Supplies.....	100
5048*.....	Ophthalmic Goods.....	100
5049*.....	Professional Equipment and Supplies, N.E.C.....	100
5051.....	Metals Service Centers and Offices.....	100
5052.....	Coal and Other Minerals and Ores.....	100
5063.....	Electrical Apparatus and Equipment, Wiring Supplies, and Construction Materials.....	100
5064.....	Electrical Appliances, Television and Radio Sets.....	100
5065.....	Electronic Parts and Equipment, N.E.C.....	100
5072.....	Hardware.....	100
5074.....	Plumbing and Heating Equipment and Supplies (Hydraulics).....	100

SIZE STANDARDS BY SIC INDUSTRY—  
Continued

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
5075.....	Warm Air Heating and Air-Conditioning Equipment and Supplies.....	100
5078.....	Refrigeration Equipment and Supplies.....	100
5082.....	Construction and Mining (Except Petroleum) Machinery and Equipment.....	100
5083.....	Farm and Garden Machinery and Equipment.....	100
5084.....	Industrial Machinery and Equipment.....	100
5085.....	Industrial Supplies.....	100
5087.....	Service Establishment Equipment and Supplies.....	100
5088.....	Transportation Equipment and Supplies, Except Motor Vehicles.....	100
5091*.....	Sporting and Recreational Goods and Supplies.....	100
5092*.....	Toys and Hobby Goods and Supplies.....	100
5093.....	Scrap and Waste Materials.....	100
5094.....	Jewelry, Watches, Precious Stones, and Precious Metals.....	100
5099.....	Durable Goods, N.E.C.....	100
Major Group 51—Wholesale Trade—Nondurable Goods		
5111.....	Printing and Writing Paper.....	100
5112.....	Stationery and Office Supplies.....	100
5113.....	Industrial and Personal Service Paper.....	100
5122.....	Drugs, Drug Proprietaries, and Druggists' Sundries.....	100
5131*.....	Piece Goods, Notions, and Other Dry Goods.....	100
5136.....	Men's and Boys' Clothing and Furnishings.....	100
5137.....	Women's, Children's, and Infants' Clothing and Accessories.....	100
5139.....	Footwear.....	100
5141.....	Groceries, General Line.....	100
5142.....	Packaged Frozen Foods.....	100
5143.....	Dairy Products, Except Dried or Canned.....	100
5144.....	Poultry and Poultry Products.....	100
5145.....	Confectionery.....	100
5146.....	Fish and Seafoods.....	100
5147.....	Meats and Meat Products.....	100
5148.....	Fresh Fruits and Vegetables.....	100
5149.....	Groceries and Related Products, N.E.C.....	100
5153.....	Grain and Field Beans.....	100
5154.....	Livestock.....	100
5159.....	Farm-Product Raw Materials, N.E.C.....	100
5162*.....	Plastics Materials and Basic Forms and Shapes.....	100
5169*.....	Chemical and Allied Products, N.E.C.....	100
5171.....	Petroleum Bulk Stations and Terminals.....	100

**SIZE STANDARDS BY SIC INDUSTRY—  
Continued**

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
5172.....	Petroleum and Petroleum Products Wholesalers, Except Bulk Stations and Terminals.	100
5181.....	Beer and Ale.....	100
5182.....	Wine and Distilled Alcoholic Beverages.	100
5191.....	Farm Supplies.....	100
5192*.....	Books, Periodicals, and Newspapers.	100
5193*.....	Flowers, Nursery Stock, and Florists' Supplies.	100
5194.....	Tobacco and Tobacco Products.	100
5198.....	Paints, Varnishes, and Supplies.	100
5199.....	Nondurable Goods, N.E.C.....	100

**DIVISION G—RETAIL TRADE** (Not Applicable to Government procurement of supplies. The nonmanufacturer size standard of 500 employees shall be used for purposes of Government procurement of supplies)

**Major Group 52—Building Materials, Hardware, Garden Supply, and Mobile Home Dealers**

5211.....	Lumber and Other Building Materials Dealers.	\$3.5
5231.....	Paint, Glass, and Wallpaper Stores.	\$3.5
5251.....	Hardware Stores.....	\$3.5
5261.....	Retail Nurseries, Lawn and Garden Supply Stores.	\$3.5
5271.....	Mobile Home Dealers.....	\$6.5

**Major Group 53—General Merchandise Stores**

5311.....	Department Stores.....	\$13.5
5331.....	Variety Stores.....	\$5.5
5399.....	Miscellaneous General Merchandise Stores.	\$3.5

**Major Group 54—Food Stores**

5411.....	Grocery Stores.....	\$13.5
5421*.....	Meat and Fish (Seafood) Markets, Including Freezer Provisioners.	\$3.5
5431.....	Fruit and Vegetable Markets.....	\$3.5
5441.....	Candy, Nut, and Confectionery Stores.	\$3.5
5451.....	Dairy Products Stores.....	\$3.5
5461*.....	Retail Bakeries.....	\$3.5
5499.....	Miscellaneous Food Stores.....	\$3.5

**Major Group 55—Automotive Dealers and Gasoline Service Stations**

5511.....	Motor Vehicle Dealers (New and Used).	\$11.5
5521.....	Motor Vehicle Dealers (Used Only).	\$11.5
5531.....	Auto and Home Supply Stores...	\$3.5
5541.....	Gasoline Service Stations.....	\$4.5
5551.....	Boat Dealers.....	\$3.5

**SIZE STANDARDS BY SIC INDUSTRY—  
Continued**

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
5561.....	Recreational Vehicle Dealers.....	\$3.5
5571.....	Motorcycle Dealers.....	\$3.5
5599.....	Automotive Dealers, N.E.C. <sup>12</sup> .....	\$3.5

**Major Group 56—Apparel and Accessory Stores**

5611.....	Men's and Boys' Clothing and Accessory Stores.	\$4.5
5621.....	Women's Clothing Stores.....	\$4.5
5632*.....	Women's Accessory and Specialty Stores.	\$3.5
5641.....	Children's and Infants' Wear Stores.	\$3.5
5651.....	Family Clothing Stores.....	\$4.5
5661.....	Shoe Stores.....	\$4.5
5699.....	Miscellaneous Apparel and Accessory Stores.	\$3.5

**Major Group 57—Home Furniture, Furnishings, and Equipment Stores**

5712.....	Furniture Stores.....	\$3.5
5713.....	Floor Covering Stores.....	\$3.5
5714.....	Drapery, Curtain, and Upholstery Stores.	\$3.5
5719.....	Miscellaneous Homefurnishings Stores.	\$3.5
5722.....	Household Appliance Stores.....	\$4.5
5731*.....	Radio, Television, and Consumer Electronics Stores.	\$4.5
5734*.....	Computer and Computer Software Stores.	\$4.5
5735*.....	Record and Pre-recorded Tape Stores.	\$3.5
5736*.....	Musical Instrument Stores.....	\$3.5

**Major Group 58—Eating and Drinking Places**

5812.....	Eating Places, Except Food Service, Institutional.	\$3.5
5812.....	Food Service, Institutional.....	\$10.0
5813.....	Drinking Places (Alcoholic Beverages).	\$3.5

**Major Group 59—Miscellaneous Retail**

5912.....	Drug Stores and Proprietary Stores.	\$3.5
5921.....	Liquor Stores.....	\$3.5
5932*.....	Used Merchandise Stores.....	\$3.5
5941.....	Sporting Goods Stores and Bicycle Shops.	\$3.5
5942.....	Book Stores.....	\$3.5
5943.....	Stationery Stores.....	\$3.5
5944.....	Jewelry Stores.....	\$3.5
5945.....	Hobby, Toy, and Game Shops...	\$3.5
5946.....	Camera and Photographic Supply Stores.	\$3.5
5947.....	Gift, Novelty, and Souvenir Shops.	\$3.5
5948.....	Luggage and Leather Goods Stores.	\$3.5
5949.....	Sewing, Needlework, and Piece Goods Stores.	\$3.5

**SIZE STANDARDS BY SIC INDUSTRY—**  
Continued

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
5961.....	Catalog and Mail-Order Houses.	\$12.5
5962.....	Automatic Merchandising Machine Operators.	\$3.5
5963.....	Direct Selling Establishments.....	\$3.5
5983.....	Fuel Oil Dealers.....	\$6.0
5984.....	Liquefied Petroleum Gas (Bottled Gas) Dealers.	\$3.5
5989*	Fuel Dealers, N.E.C.....	\$3.5
5992.....	Florists.....	\$3.5
5993.....	Tobacco Stores and Stands.....	\$3.5
5994.....	News Dealers and Newsstands.	\$3.5
5995*	Optical Goods Stores.....	\$3.5
5999.....	Miscellaneous Retail Stores, N.E.C.	\$3.5
<b>DIVISION H—FINANCE, INSURANCE, AND REAL ESTATE <sup>13</sup></b>		
<b>Major Group 60—Depository Institutions</b>		
6021*	National Commercial Banks.....	\$100 <sup>14</sup>
6022.....	State Commercial Banks.....	\$100 <sup>14</sup>
6029*	Commercial Banks, N.E.C.....	\$100 <sup>14</sup>
6035*	Savings Institutions, Federally Chartered.	\$100 <sup>14</sup>
6036*	Savings Institutions, Not Federally Chartered.	\$100 <sup>14</sup>
<b>Major Group 62—Security and Commodity Brokers, Dealers, Exchanges, and Services</b>		
6221.....	Commodity Contracts Brokers and Dealers.	\$3.5
<b>Major Group 63—Insurance Carriers</b>		
6331.....	Fire, Marine, and Casualty Insurance.	\$1,500
<b>Major Group 64—Insurance Agents, Brokers, and Service</b>		
6411.....	Insurance Agents, Brokers, and Service.	\$3.5
<b>Major Group 65—Real Estate</b>		
6515.....	Operators of Residential Mobile Home Sites.	\$3.5
	Leasing of Building Space to Federal Government by Owners.	\$10.0
6531.....	Real Estate Agents and Managers.	\$1.0 <sup>10</sup>
<b>DIVISION I—SERVICES</b>		
<b>Major Group 70—Hotels, Rooming Houses, Camps, and Other Lodging Places</b>		
7011.....	Hotels and Motels.....	\$3.5
7021.....	Rooming and Boarding Houses.	\$3.5

**SIZE STANDARDS BY SIC INDUSTRY—**  
Continued

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
7032.....	Sporting and Recreational Camps.	\$3.5
7033.....	Recreational Vehicle Parks and Campsites.	\$3.5
7041.....	Organization Hotels and Lodging Houses, on Membership Basis.	\$3.5
<b>Major Group 72—Personal Services</b>		
7211.....	Power Laundries, Family and Commercial.	\$7.0
7212.....	Garment Pressing, and Agents for Laundries and Drycleaners.	\$3.5
7213.....	Linen Supply.....	\$7.0
7215.....	Coin-Operated Laundries and Dry cleaning.	\$3.5
7216.....	Drycleaning Plants, Except Rug Cleaning.	\$2.5
7217.....	Carpet and Upholstery Cleaning.	\$2.5
7218.....	Industrial Launderers.....	\$7.0
7219.....	Laundry and Garment Services, N.E.C..	\$3.5
7221.....	Photographic Studios, Portrait.....	\$3.5
7231.....	Beauty Shops.....	\$3.5
7241.....	Barber Shops.....	\$3.5
7251.....	Shoe Repair Shops and Shoeshine Parlors.	\$3.5
7261.....	Funeral Service and Crematories.	\$3.5
7291*	Tax Return Preparation Services.	\$3.5
7299.....	Miscellaneous Personal Services, N.E.C.	\$3.5
<b>Major Group 73—Business Services</b>		
7311.....	Advertising Agencies.....	\$3.5
7312.....	Outdoor Advertising Services.....	\$3.5
7313.....	Radio, Television, and Publishers' Advertising Representatives.	\$3.5
7319.....	Advertising, N.E.C.....	\$3.5
7322*	Adjustment and Collection Services.	\$3.5
7323*	Credit Reporting Services.....	\$3.5
7331.....	Direct Mail Advertising Services.	\$3.5
7334*	Photocopying and Duplicating Services.	\$3.5
7335*	Commercial Photography.....	\$3.5
7336*	Commercial Art and Graphic Design.	\$3.5
7338*	Secretarial and Court Reporting Services.	\$3.5
7342.....	Disinfecting and Pest Control Services.	\$3.5
7349.....	Building Cleaning and Maintenance Services, N.E.C.	\$8.0
7352*	Medical Equipment Rental and Leasing.	\$3.5
7353*	Heavy Construction Equipment Rental and Leasing.	\$3.5

**SIZE STANDARDS BY SIC INDUSTRY—  
Continued**

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
7359*	Equipment Rental and Leasing, N.E.C.	\$3.5
7361	Employment Agencies	\$3.5
7363*	Help Supply Services	\$3.5
7371*	Computer Programming Services	\$7.0
7372	Prepackaged Software	\$7.0
7373*	Computer Integrated Systems Design	\$7.0
7374	Computer Processing and Data Preparation and Processing Services	\$7.0
7375*	Information Retrieval Services	\$7.0
7376*	Computer Facilities Management Services	\$7.0
7377*	Computer Rental and Leasing	\$12.5
7378*	Computer Maintenance and Repair	\$12.5
7379	Computer Related Services, N.E.C.	\$12.5
7381*	Detective, Guard, and Armored Car Services	\$6.0
7382*	Security Systems Services	\$6.0
7383*	News Syndicates	\$3.5
7384*	Photofinishing Laboratories	\$3.5
7389*	Business Services, N.E.C.	\$3.5
<b>Major Group 75—Automotive Repair, Services, and Parking</b>		
7513	Truck Rental and Leasing, Without Drivers	\$12.5
7514*	Passenger Car Rental	\$12.5
7515*	Passenger Car Leasing	\$12.5
7519	Utility Trailer and Recreational Vehicle Rental	\$3.5
7521*	Automobile Parking	\$3.5
7532*	Top, Body, and Upholstery Repair Shops and Paint Shops	\$3.5
7533*	Automotive Exhaust System Repair Shops	\$3.5
7534	Tire Retreading and Repair Shops	\$7.0
7536*	Automotive Glass Replacement Shops	\$3.5
7537*	Automotive Transmission Repair Shops	\$3.5
7538	General Automotive Repair Shops	\$3.5
7539	Automotive Repair Shops, N.E.C.	\$3.5
7542	Carwashes	\$3.5
7549	Automotive Services, Except Repair and Carwashes	\$3.5
<b>Major Group 76—Miscellaneous Repair Services</b>		
7622	Radio and Television Repair Shops	\$3.5
7623	Refrigeration and Air-Conditioning Service and Repair Shops	\$3.5
7629	Electrical and Electronic Repair Shops, N.E.C.	\$3.5

**SIZE STANDARDS BY SIC INDUSTRY—  
Continued**

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
7631	Watch, Clock, and Jewelry Repair	\$3.5
7641	Reupholstery and Furniture Repair	\$3.5
7692	Welding Repair	\$3.5
7694	Armature Rewinding Shops	\$3.5
7699	Repair Shops and Related Services, N.E.C. <sup>17</sup>	\$3.5
<b>Major Group 78—Motion Pictures</b>		
7812*	Motion Picture and Video Tape Production	\$14.5
7819	Services Allied to Motion Picture Production	\$14.5
7822*	Motion Picture and Video Tape Distribution	\$14.5
7829	Services Allied to Motion Picture Distribution	\$3.5
7832	Motion Picture Theaters, Except Drive-In	\$3.5
7833	Drive-In Motion Picture Theaters	\$3.5
7841*	Video Tape Rental	\$3.5
<b>Major Group 79—Amusement and Recreation Services</b>		
7911	Dance Studios, Schools, and Halls	\$3.5
7922	Theatrical Producers (Except Motion Picture) and Miscellaneous Theatrical Services	\$3.5
7929	Bands, Orchestras, Actors, and Other Entertainers and Entertainment Groups	\$3.5
7933	Bowling Centers	\$3.5
7941	Professional Sports Clubs and Promoters	\$3.5
7991*	Physical Fitness Facilities	\$3.5
7993	Coin-Operated Amusement Devices	\$3.5
7996	Amusement Parks	\$3.5
7997	Membership Sports and Recreation Clubs	\$3.5
7999	Amusement and Recreation Services, N.E.C.	\$3.5
<b>Major Group 80—Health Services</b>		
8011	Offices and Clinics of Doctors of Medicine	\$3.5
8021	Offices and Clinics of Dentists	\$3.5
8031	Offices and Clinics of Doctors of Osteopathy	\$3.5
8041	Offices and Clinics of Chiropractors	\$3.5
8042	Offices and Clinics of Optometrists	\$3.5
8043*	Offices and Clinics of Podiatrists	\$3.5
8049	Offices and Clinics of Health Practitioners, N.E.C.	\$3.5
8051	Skilled Nursing Care Facilities	\$3.5
8052*	Intermediate Care Facilities	\$3.5

**SIZE STANDARDS BY SIC INDUSTRY—  
Continued**

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
8059.....	Nursing and Personal Care Facilities, N.E.C.	\$3.5
8062.....	General Medical and Surgical Hospitals.	\$3.5
8063.....	Psychiatric Hospitals.....	\$3.5
8069.....	Specialty Hospitals, Except Psychiatric.	\$3.5
8071.....	Medical Laboratories.....	\$3.5
8072.....	Dental Laboratories.....	\$3.5
8082*.....	Home Health Care Services.....	\$3.5
8092*.....	Kidney Dialysis Centers.....	\$3.5
8093*.....	Specialty Outpatient Facilities, N.E.C.	\$3.5
8099*.....	Health and Allied Services, N.E.C.	\$3.5
<b>Major Group 81—Legal Services</b>		
8111.....	Legal Services.....	\$3.5
<b>Major Group 82—Educational Services</b>		
8211.....	Elementary and Secondary Schools.	\$3.5
8221.....	Colleges, Universities, and Professional Schools.	\$3.5
8222.....	Junior Colleges and Technical Institutes.	\$3.5
8231.....	Libraries.....	\$3.5
8243.....	Data Processing Schools.....	\$3.5
8244.....	Business and Secretarial Schools.	\$3.5
8249.....	Vocational Schools, N.E.C.....	\$3.5
8299.....	Schools and Educational Services, N.E.C.	\$3.5
8299.....	Flight Training Services.....	\$12.5
<b>Major Group 83—Social Services</b>		
8322*.....	Individual and Family Social Services.	\$3.5
8331.....	Job Training and Vocational Rehabilitation Services.	\$3.5
8351.....	Child Day Care Services.....	\$3.5
8361.....	Residential Care.....	\$3.5
8399.....	Social Services, N.E.C.....	\$3.5
<b>Major Group 84—Museums, Art Galleries, and Botanical and Zoological Gardens</b>		
8412*.....	Museums and Art Galleries.....	\$3.5
8422*.....	Arboreta and Botanical or Zoological Gardens.	\$3.5
<b>Major Group 86—Membership Organizations</b>		
8611.....	Business Associations.....	\$3.5
8621.....	Professional Membership Organizations.	\$3.5
8631.....	Labor Unions and Similar Labor Organizations.	\$3.5
8641.....	Civic, Social, and Fraternal Associations.	\$3.5
8651.....	Political Organizations.....	\$3.5
8661.....	Religious Organizations.....	\$3.5

**SIZE STANDARDS BY SIC INDUSTRY—  
Continued**

SIC (* = New SIC Code in 1987, Not Used in 1972)	Description (N.E.C. = Not Elsewhere Classified)	Size standards in number of employees or millions of dollars
8699.....	Membership Organizations, N.E.C.	\$3.5
<b>Major Group 87—Engineering, Accounting, Research, Management, and Related Services</b>		
8711*.....	Engineering Services: Military and Aerospace Equipment and Military Weapons.	\$13.5
	Marine Engineering and Naval Architecture.	\$9.0
	Other Engineering Services....	\$2.5
8712*.....	Architectural Services (Other Than Naval).	\$2.5
8713*.....	Surveying Services.....	\$2.5
8721*.....	Accounting, Auditing, and Bookkeeping Services.	\$4.0
8731*.....	Commercial Physical and Biological Research: <sup>18</sup>	
	Aircraft.....	1,500
	Aircraft Parts, and Auxiliary Equipment, and Aircraft Engines and Engine Parts.	1,000
	Space Vehicles and Guided Missiles, their Propulsion Units, their Propulsion Units Parts, and their Auxiliary Equipment and Parts.	1,000
	Other Commercial Physical and Biological Research.	500
8732*.....	Commercial Economic, Sociological, and Educational Research.	\$3.5
8733*.....	Noncommercial Research Organizations.	\$3.5
8734*.....	Testing Laboratories.....	\$3.5
8741*.....	Management Services.....	\$3.5
8742*.....	Management Consulting Services.	\$3.5
8743*.....	Public Relations Services.....	\$3.5
8744*.....	Facilities Support Management Services. <sup>19</sup>	\$3.5
	Base Maintenance <sup>20</sup> .....	\$13.5
8748*.....	Business Consulting Services, N.E.C.	\$3.5
<b>Major Group 89—Services, Not Elsewhere Classified</b>		
8999.....	Services, N.E.C.....	\$3.5

<sup>1</sup> Size standards preceded by a dollar sign (\$) are in millions of dollars of annual receipts. All others are in number of employees unless specified otherwise.

<sup>2</sup> *SIC code 1629—Dredging:* To be considered small, a firm must perform the dredging of at least 40 percent of the yardage with its own dredging equipment or equipment owned by another small dredging concern.

<sup>3</sup> *SIC Division D—Manufacturing:* "Rebuilding on a factory basis or equivalent." For rebuilding machinery or equipment on a factory basis, use SIC code applicable for new manufactured product. The appropriate size standard is not limited to manufacturers. Ordinary repair services or preservation operations, however, are not considered rebuilding activities.

<sup>4</sup> *SIC code 2033:* For purposes of Government procurement for food canning and preserving under SIC code 2033, the standard of 500 employees shall be exclusive of agricultural labor as defined in Section (k) of the Federal Unemployment Tax Act, 68A, Stat. 454, 26 U.S.C. (I.R.C. 1954) 3306.

<sup>5</sup> *SIC code 2911:* For purposes of Government procurement, the firm may not have more than 1,500 employees, nor may it have more than 50,000 barrels per day capacity. This capacity may be measured in terms of either crude oil or bona fide feedstocks or both, but the sum total of the various petroleum-based inputs into the process may not exceed 50,000 barrels. In addition to the direct owned capacity of the concern in question, counted capacity will include any leased facilities or any facilities made available to the concern under an arrangement such as (but not limited to) an exchange agreement or a throughput, or other form, or processing agreement (whereby another party processes the concern's own crude or feedstocks). Such an arrangement would have the same effect as though such facilities had been leased, and this would have to be included in the concern's own capacity. The total product to be delivered in the performance of the contract must be at least 90 percent refined by the successful bidder from either crude oil or bona fide feedstocks.

<sup>6</sup> *SIC code 3011*: For purposes of Government procurement, a firm is small for bidding on a contract for pneumatic tires within Census Classification codes 30111 and 30112, provided that: (1) the value of tires within Census Classification codes 30111 and 30112 which it manufactured in the United States during the previous calendar year is more than 50 percent of the value of its total worldwide manufacture, (2) the value of pneumatic tires within Census Classification codes 30111 and 30112 which it manufactured worldwide during the preceding calendar year was less than 5 percent of the value of all such tires manufactured in the United States during said period, and (3) the value of the principal product which it manufactured or otherwise produced, or sold worldwide during the preceding calendar year is less than 10 percent of the total value of such products manufactured or otherwise produced or sold in the United States during said period.

<sup>7</sup> *SIC code 4212*: The component "Garbage and Refuse, Collecting and Transporting, Without Disposal" shall have a size standard of \$6.0 million. This is the same size standard as SIC code 4953, Refuse Systems.

<sup>8</sup> *Offshore Marine Services*: The applicable size standard shall be \$14 million for firms furnishing specific transportation services to concerns engaged in offshore oil and/or natural gas exploration, drilling production, or marine research; such services, encompass passenger and freight transportation, anchor handling, and related logistical services to and from the work site or at sea.

<sup>9</sup> *SIC codes 4512, 4513, and 4522*: Includes passenger or cargo transportation requiring the use of one or more helicopters or fixed-wing aircraft. This does not include offshore marine transportation services as defined in footnote 8.

<sup>10</sup> *SIC codes 4724 and 6531*: As measured by total revenues, but excluding funds received in trust for an unaffiliated third party, such as bookings or sales subject to commissions. The commissions received would be included as revenue.

<sup>11</sup> *SIC code 4953*: "Garbage and Refuse, Collecting and Transporting, Without Disposal," a component of SIC code 4212, has the same size standard as SIC code 4953.

<sup>12</sup> *SIC code 5599*: For retail firms whose principal line of business is the retail sale of aircraft, a \$5 million size standard shall apply.

<sup>13</sup> Most industries in Division H:—Finance, Insurance, and Real Estate—are excluded from SBA assistance.

<sup>14</sup> *Major Group 60*: As measured by total assets.

<sup>15</sup> *Major Group 65—Leasing of building space to the Federal Government by owners:* For the purpose of Government procurement, a size standard of \$10 million in gross receipts is established for owners of building space that is leased to the Federal Government. The standard for these procurements shall apply to the owner of the property and not to those acting as an agent for the owner. There is no size standard concerning the agent in a leasing arrangement.

<sup>16</sup> *Division 1—Services:* For all industries not specifically listed in this division, the size standard is \$3.5 million.

<sup>17</sup> *SIC codes 7699 and 3728:* Contracts for the rebuilding or overhaul of aircraft ground support equipment on a contract basis will be classified under SIC code 3728.

<sup>18</sup> *SIC code 8731:* For research and development contracts requiring the delivery of a manufactured product, the appropriate size standard to use is that of the manufacturing industry in which the specific product is classified.

Research and Development, as defined in the SIC Manual, means laboratory or other physical research and development on a contractor fee basis. Research and development for purposes of size determinations does not include the following: economic, educational, engineering, operations, systems, or other nonphysical research; or computer programming, data processing, commercial and/or medical laboratory testing.

For purposes of the Small Business Innovation Research (SBIR) program only, a different definition has been established by law. See § 121.7 of these regulations.

Research and development for guided missiles and space vehicles includes evaluation and simulation, and other services requiring thorough knowledge of complete missiles and spacecraft.

<sup>19</sup> *Facilities Management, a component of SIC code 8744,* has the following definition: Establishments, not elsewhere classified, which provide overall management and the personnel to perform a variety of related support services in operating a complete facility in or around the specific building, or within another business or Government establishment. Facilities management means furnishing three or more personnel supply services which may include, but are not limited to, secretarial services, typists, telephone answering, reproduction or Mimeograph service, mailing services, financial or business management, public relations, conference planning, travel arrangements, word processing, maintaining files and/or libraries, switchboard operation, writers, bookkeeping, minor office equipment maintenance and repair, use of information systems (not programming), etc.

<sup>20</sup> *SIC code 8744*: If one of the activities of *base maintenance*, as defined below, can be identified with a separate industry, and that activity (or industry) accounts for 50 percent or more of the value of an entire contract, then the proper size standard shall be that for the particular industry, and not the base maintenance size standard.

"Base Maintenance" constitutes three or more separate activities. The activities may be either service or special trade construction related activities. As services, these activities must each be in a separate industry. These activities may include, but are not limited to, such separate maintenance activities as Janitorial and Custodial Service, Protective Guard Service, Commissary Service, Fire Prevention Service, Safety Engineering Service, Messenger Service, and Grounds Maintenance and Landscaping Service. If the contract involves the use of special trade contractors (plumbing, painting, plastering, carpentering, etc.), all such specialized special trade construction activities will be considered a single activity, which is Base Housing Maintenance. This is only one activity of base maintenance and two additional activities must be present for the contract to be considered base maintenance. The size standard for Base Housing Maintenance is \$7 million, the same size standard as for Special Trade Contractors.

Source: Small Business Size Regulations (1992)

## APPENDIX 3

PROFILE OF STATES AND OTHER JURISDICTIONS  
 USING DEFINITIONS OF A SMALL BUSINESS

STATE	DEFINITION USED	PART OF STATE LAW?	RATIONALE AVAILABLE?
Alabama	Federal	No	No
Alaska	Federal	No	No
Arizona	Federal	No	No
Arkansas	None		
California	Federal	Yes	Yes
Colorado	None		
Connecticut	State	Yes	Yes
Delaware	None		
District of Columbia	None		
Florida	State	Yes	Yes
Georgia	State	Yes	No
Hawaii	Federal	Yes	Yes
Idaho	None		
Illinois	State	Yes	No
Indiana	Federal	Yes	Yes
Iowa	None		
Kansas	State	Yes	Yes
Kentucky	State	Yes	No
Louisiana	None		
Maine	None		
Maryland	State	Yes	No
Massachusetts	Federal	Yes	Yes
Michigan	State	No	No
Minnesota	State	Yes	Yes
Mississippi	None		
Missouri	Federal	No	No
Montana	None		
Nebraska	None		
Nevada	Federal	No	No
New Hampshire	None		
New Jersey	State	Yes	No
New Mexico	None		
New York	Federal	Yes	No
North Carolina	Federal	No	No
North Dakota	None		
Ohio	Federal	No	No
Oklahoma	None		
Oregon	None		
Pennsylvania	State	No	No
Puerto Rico	State	No	Yes
Rhode Island	None		
South Carolina	Federal	No	Yes
South Dakota	None		
Tennessee	None		

STATE	DEFINITION USED	PART OF STATE LAW?	RATIONALE AVAILABLE?
Texas	State	Yes	No
Utah	None		
Vermont	None		
Virginia	None		
Washington	State	Yes	Yes
West Virginia	Federal	No	Yes
Wisconsin	State	Yes	Yes
Wyoming	None		

Source: A. T. Nappi & J. Vora (1980)

## APPENDIX 4

MAXIMUM NUMBER OF EMPLOYEES FOR BUSINESS  
TO BE CONSIDERED "SMALL"

<u>MAXIMUM NUMBER OF EMPLOYEES</u>	<u>% RESPONSE</u>
5 or less	28.6
6 - 10	27.5
11 - 25	22.5
26 - 50	10.3
51 - 100	8.3
More than 100	2.8

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Source: R. A. Peterson, G. Albaum, & G. Kozmetsky (1986)

## APPENDIX 5

MAXIMUM ANNUAL SALES VOLUME FOR BUSINESS  
TO BE CONSIDERED " SMALL"

<u>SALES VOLUME</u>	<u>% RESPONSE</u>
\$50,000 or less	32.4
\$50,001 - \$100,000	18.9
\$100,001 - \$250,000	11.6
\$250,001 - \$500,000	10.2
\$500,001 - \$1,000,000	13.6
More than \$1,000,000	13.3

Source: R. A. Peterson, G. Albaum, & G. Kozmetsky (1986)

## APPENDIX 6

## SUMMARY OF IMPORTANT DEFINITIONAL ATTRIBUTES

- Richard Cantillon (circa 1730) - entrepreneur defined as a self employed person  
- additional uncertainty accompanies self-employment  
- entrepreneurs should proportion their activity to market demands
- Jean-Baptiste Say (circa 1810) - many managerial talents are required to be a successful entrepreneur  
- many obstacles and uncertainties accompany entrepreneurship
- Alfred Marshall (circa 1890) - the abilities to be an entrepreneur are different yet complementary with the abilities to be a manager
- Joseph Schumpeter (circa 1910) - entrepreneurship is at its essence the finding and promoting of new combinations of productive factors  
- entrepreneurship is the prime creative socio-economic factor
- Frank Knight (circa 1920) - the courage to bear uncertainty is the essential aspect of entrepreneurship  
- entrepreneurs are required to perform such fundamental managerial functions as responsible direction and control

- Edith Penrose (circa 1960)
- managerial capacities should be distinguished from entrepreneurial capacities
  - identifying and exploiting opportunistic ideas for expansion of smaller enterprises is the essential aspect of entrepreneurship
- Harvey Leibenstein (circa 1970)
- entrepreneurial activity is aimed toward the reduction of organizational inefficiency and to the reversal of organizational entropy
- Israel Kirzner (circa 1975)
- the identification of market arbitrage opportunities is the fundamental function of the entrepreneur

Source: W. Long (1983)

## APPENDIX 7

STEPS TO DEVELOP CONTINGENCY PLANS  
DEALING WITH POSITIVE OPPORTUNITIES

1. Identify the firm's major strengths.
2. Identify those opportunities in which these strengths can be of greatest value.
3. Identify which of these opportunities are most likely to occur.
4. Develop contingency plans for each identified opportunity.
5. Wait and watch for opportunities.
6. Periodically update contingency plans.

STEPS TO DEVELOP CONTINGENCY PLANS  
DEALING WITH NEGATIVE OPPORTUNITIES

1. Identify the business's weaknesses.
2. Identify the possible occurrences ("negative opportunities") to which these weaknesses would be most susceptible.
3. Estimate the relative probabilities of these occurrences.
4. Formulate contingency plans to deal with these occurrences if they arise.

Source: Sonfield (1984)

## APPENDIX 8

## EXAMPLES OF SMALL FIRM COOPERATIVE EFFORTS

1. Societe GBA SA, one of the largest and longest established groups of small firms in France, set up by 40 small building firms eighteen years ago to provide them with all the technical commercial, financial and legal services necessary to allow them to compete for contracts with larger companies.

2. GIE Unifab, a French outfit, which is a combination of 7 firms in the cutting instruments field capable of pooling their resources in terms of manufacturing facilities, product lines and marketing channels.

3. Nature & Aliments SA, a French firm in Nantes, which is a combination of 3 small food manufacturers (a flour producer, a baker, and a biscuit manufacturer) capable of achieving vertical integration by marketing their products under a joint brand name.

4. Club Informatique Loire-Ocean (CILO), a French group of firms based in Nantes, all selling computerized accountancy and information systems with a central personnel department to handle job applications and preliminary interviews for each member firm and to circulate information on vacancies and applications among the members.

5. Societe Bricolor, a French group in Nancy formed by firms manufacturing paint, paint rollers, wallpapering equipment, window shades and tools with joint salesmen and a central office to handle sales orders, invoives and other clerical tasks.

6. Dynamisme Commercial & Innovation, organized by 30 small firms in and around Nantes which wanted to retain a staff of specialists who would serve in an advisory capacity to member firms on all types of financial, technical, and operational matters.

7. In Nancy, France, several firms have formed a group simply to share costly computer time. The companies, ranging from a local bureau de change to a butcher, have nothing in common other than a high number of low-value transactions.

8. Le Groupement Quebecois D'Entreprise, Inc., (GQE) a Canadian coalition of 150 smaller firms has become an inflential advocate for small business, i.e., helping member firms attain a better bargaining position with local banks when they seek additional financing, and seeking group discounts on everything from furnace oil to car rentals.

9. In Ontario, Canada, local merchants are successfully restoring run down shopping districts through a cooperative effort known as "Business Improvement Areas" (BIAs). Through cooperation these merchants are

attempting to make shopping districts pleasant so that nearby residents will be more inclined to stay in the area and shop.

Sources: A. DeNoble & D. M. Moliver (1983)

W. Lilley (1978)

G. Tarvernier (1979)

G. Weiss (1978)

## APPENDIX 9

### SUMMARY OF EMPIRICAL RESEARCH ON PLANNING PRACTICES IN SMALL BUSINESS

<u>STUDY AUTHORS</u>	<u>FIRMS</u>	<u>TYPE OF BUSINESS</u>	<u>DEFINITIONS OF SMALL BUSINESS</u>	<u>METHODOLOGY</u>	<u>FOCUS OF STUDY</u>	<u>MAJOR FINDINGS</u>
Anderson (1970)*	75	Service firms	< \$3M annual sales	Interviews with owners/managers	To profile the "typical" owner/manager and to identify the management practices in small service firms	<ol style="list-style-type: none"> <li>1. Owner/managers were more service oriented than profit oriented—spending 80% of their time with customers.</li> <li>2. Owner/managers did practically no formal planning because they lacked:               <ol style="list-style-type: none"> <li>1. time, 2. education, and 3. training.</li> </ol> </li> </ol>
Cohn & Lindberg* (1971)	197	Varied -106 small businesses and 91 large businesses	\$2-\$10M annual sales	Survey questionnaire and interviews	To identify and explore differences in the management of small vs. large firms	<ol style="list-style-type: none"> <li>1. Planning was the most difficult function to perform well in the small companies.</li> <li>2. Detailed planning beyond the clearly seen future induced rigidities that largely offset the advantages of a small firm's flexibility and maneuverability.</li> <li>3. Setting goals was the weakest aspect of small business planning.</li> <li>4. Small firm planning required considerable time investment.</li> <li>5. On-the-job experience in a small firm ill prepared a manager to plan.</li> </ol>
Gibb & Scott	16	Varied in UK	< 50 employees	Field study	To study the way in which the companies pursued different lines of product market development	Strategic planning in the formalized sense is unlikely to exist.

Hastings (1961)*	106	Manufacturing	< 500 employees	Survey questionnaire	To survey planning practices and problems in planning	<ol style="list-style-type: none"> <li>1. Most small business planning was informal.</li> <li>2. Critical problems associated with planning were: 1. getting started and 2. allocating time.</li> </ol>
Jones (1982)	69	Service, manufacturing	Not specified	Survey	To identify characteristics that discriminate between planners and non-planners in small firms	<ol style="list-style-type: none"> <li>1. Found 14 characteristics that significantly differentiate planners from nonplanners.</li> </ol>
O'Neil & Duker (1986)	43	Varied - 11 failed firms, 32 successful firms	Not specified		To test those prescriptions which suggest that the use of outsiders is vital to the process of strategic evaluation in small business	<ol style="list-style-type: none"> <li>1. A number of strategic prescriptions are used in small business management, research and education. The prescriptions developed using the PIMS data base do apply to small businesses.</li> <li>2. Accountants provide critical information for successful small businesses.</li> </ol>
Rice (1983)	22	Manufacturing, service, retailing	≤ 50 employees	Interview	To examine the degree to which small businessmen engage in strategic decision making	Small businessmen are aware of the strategic nature of many of their decisions.
Rice & Hamilton (1979)	35	Service, wholesale, retailing	< 200 employees	Interview	To study decision making by small businessmen	The social model based on Herbert A. Simon's concept of satisficing is a predominate factor for these decision makers. They used a multidimensional, stochastic, non-quantitative decision process, normally involving several factors for each decision.

Sexton & Dahle (1976)	20	Retailing	Not specified	Survey interview	To determine the extent to which factors such as costs of finance, limited entrepreneurial capacity, and imperfect information impede the adoption of long-run planning strategies in small firms	<ol style="list-style-type: none"> <li>1. 40% did not undertake long-range planning at all while of the remaining 60% who did utilize some form of planning strategy, only 25% of that carried this out on anything other than a regular basis.</li> <li>2. Reasons for those who did not use long-range planning at all include: 1. They did not see any purpose whatsoever for this management tool. 2. They saw a need for long-range planning but did not know how to go about using it, and 3. They saw a need for long-range planning in their firm but lacked the time to undertake planning.</li> </ol>
Sexton & Van Auken (1982)	357	Varied	Not specified	Questionnaire	To assess the degree of strategic planning activity in small firms	<ol style="list-style-type: none"> <li>1. Found a "rather anemic level" of strategic planning among the sample's small businesses.</li> <li>2. 25% of the sample carried on "strategic thinking," but rarely was this thinking translated into active plans.</li> </ol>
Sexton & Van Auken (1985)	278	Varied	Not specified	Interview	To follow up longitudinal study of their previous study (1982)	Most small firms do not engage in true strategic planning at all, and the rest may do so only sporadically or temporarily, despite the evidence that strategic planning can help firms to survive and prosper.

Shaw, Shuman, & Sussman (1986)	135 Varied	SBA definitions and at least 10 employees	Questionnaire	To develop information about the use of strategic planning by small New England business firms	<ol style="list-style-type: none"> <li>1. Most planning involves crisis management and strategic planning.</li> <li>2. Corporate type of structure seems to be preferable.</li> <li>3. Professional activities and involvement were beneficial to the firms.</li> <li>4. Effort to structure and organize more efficiently and effectively and to use product portfolio analysis was more evident among managers using strategic planning.</li> <li>5. The larger the firm, the more likely it is to be involved in strategic planning</li> </ol>
Shuman (1975)	46 Varied	\$0.5M to less than \$1.0M net worth	Questionnaire	To determine the current level of actual planning by small business	<ol style="list-style-type: none"> <li>1. Most firms do some planning.</li> <li>2. The predominant reason cited for the informal, unstructured nature of corporate planning activities was the small size of the company.</li> <li>3. Corporate planning practice may be depicted to still be in its formative period.</li> </ol>

Shuman (1985)

220 Varied

INC. 500 and \$0.1-25.0M  
sales in 1978

Survey  
questionnaire

To study strategic planning practices of the 500 fastest growing privately held smaller companies in the US

1. While most firms did not have a formal business plan when started, relying on personal experience and intuition, they have adopted some form of planning once the companies were in operation.
2. Planning processes have become more formal, structured, and participatory to assure continued organizational effectiveness as the companies have grown.
3. Most CEO's prefer an active and strong involvement in strategic planning, rather than delegating responsibility to members of management.
4. Most CEO's feel that improved time efficiency, company growth and a better understanding of the market will be achieved through planning.
5. Strategic planning activity tends to be primarily concerned with the short-run, updated regularly, and operationally oriented.
6. Absence of perceived benefits accruing to the company from planning endeavors negatively influenced the CEO's attitude toward planning in general, and the nature and extent of planning utilized in the future.
7. Smaller company strategic planning is still in its formative period and its development will continue as more practical experience is acquired.

Still (1974)	92	Manufacturing and construction	< 2000 employees	Survey questionnaire based on initial, in-depth interviews of pilot sample	To empirically identify the nature of strategic planning behavior in small businesses	<ol style="list-style-type: none"> <li>1. Strategic planning in small firms was unstructured, irregular, and uncomprehensive.</li> <li>2. Strategies developed segmentally and evolutionarily over time in response to an intermittent stream of major problem situations.</li> <li>3. Strategic planning was more incremental than synoptic.</li> <li>4. Strategic planning involved very few individuals.</li> <li>5. Basic company goals were seldom considered.</li> <li>6. The search for alternatives was passive, and planners had a strong tendency to limit search once an attractive alternative was found.</li> <li>7. Personal sources of information were preferred to impersonal sources.</li> </ol>
Stoner (1983)	62	Manufacturing	2-150 employees	Interview	To examine the nature and extent of small business planning activities	<ol style="list-style-type: none"> <li>1. Nearly 21% of the firms prepared long-range plans (3-5 years) which appeared reasonably extensive and detailed and were based on consideration of relevant sources of information.</li> <li>2. Over 51% of the firms prepared short-term objectives (1 year). Nearly half of these firms failed to present their objectives in written form (plans exist only in the mind of the owner/manager).</li> <li>3. Over 56% of the firms that prepared short-term objectives and nearly 77% of the firms that prepared long-term objectives did so with the participation of the owner/president plus at least 2 other officers.</li> </ol>

Unni (1981)	120	Varied - minority and non-minority	Not specified	Likert-type questionnaire	To identify the extent to which the business made plans and correlations between company characteristics and strategic planning	<ol style="list-style-type: none"> <li>1. Those who planned were only 10% among minority and 40% among non-minority owners.</li> <li>2. Planning was extensively used in the area of sales.</li> <li>3. Among minority, the owner's age and educational background seems to be related to their making use of plans. Among non-minority, the type of ownership of business, age of the firm, owner's experience, and educational background were related to planning.</li> <li>4. No correlation between company characteristics and business success.</li> </ol>
Unni (1984)	43	Manufacturing, retailing	SBA definitions	Likert-type questionnaire	To examine the use of planning in small, entrepreneurially-run firms	97% seem to have made use of planning in their business as a whole. Only 48% were found to have any formal written planning efforts while others followed an informal, intuitive kind of planning approach.

Note: The asterisk indicates that the author did not have access to the original studies; however, the sources appeared in Robinson & Pearce (1984) are listed below:

- Anderson, D. C. (1970). Factors contributing to the success of small service-type business. Unpublished doctoral dissertation, Georgia State University, Georgia.
- Cohn, T., & Lindberg, R. A. (1972). How management is different in small companies. New York: American Management Association.
- Hastings, D. C. (1961). The place of forecasting in basic planning for small business. Minneapolis, MN: University of Minnesota Press.

## APPENDIX 10

### SUMMARY OF IMPACT OF PLANNING IN SMALL BUSINESS

<u>STUDY AUTHORS</u>	<u>FIRMS</u>	<u>TYPE OF BUSINESS</u>	<u>DEFINITIONS OF SMALL BUSINESS</u>	<u>METHODOLOGY</u>	<u>FOCUS OF STUDY</u>	<u>MAJOR FINDINGS</u>
Bracker (1982)	265	Drycleaners	< \$3M annual sales	Interview and questionnaire	To assess the relationship among entrepreneurial type, planning sophistication, and performance	Small drycleaners using "structured" strategic planning performed significantly higher in relation to industry standards than did drycleaners using any other type of planning.
Bracker & Pearson (1986)	188	Drycleaners	≤ \$0.4M annual revenues	Survey questionnaire	To develop a classification scheme for the planning process sophistication of small firms, to categorize small firms according to their level of planning sophistication, to examine the relationship between planning sophistication and financial performance of a select group of small, mature firms, and to overcome some of the methodological shortcomings of prior research on strategic planning and firm performance	<ol style="list-style-type: none"> <li>1. Firms that conformed to the structured strategic planning categorization outperformed all other planning categorizations with regard to overall financial performance.</li> <li>2. Young firms outperformed old firms but no significant difference in financial performance between the young and old firms that used structured strategic plans.</li> <li>3. No significant differences were found between large and small firms with regard to financial performance.</li> <li>4. Firms with a long planning history outperformed firms with a short planning history.</li> <li>5. Planning is a continuum of sophistication, from unstructured and intuitive, to structured, formalized and strategic</li> </ol>

Chambers & Golde (1963)*	38	Manufacturing	SBA definition	Questionnaire and interview	To compare successful and unsuccessful small firms in Montana	Successful firms exhibited greater evidence of advanced planning and an ability to evaluate the consequences of alternative courses of action.
Chicha & Julien (1979)*	90	Manufacturing	5-199 employees; < \$10M annual sales	Questionnaire	To study strategic planning, and performance (longitudinal: 1968-1978)	Identified 4 types of strategies. Evidence showed significant increases in: 1. number of personnel, 2. sales, and 3. assets for firms having highest degree of strategic planning as evidenced by number of strategy changes.
Davig (1986)	60	maturing apparel, foundry, fabricated metal products	15-280 employees	Questionnaire	To examine what competitive strategies small and medium firms choose to follow, to assess whether the strategy chosen has any effect on company performance, and to examine what factors characterize each strategy	1. Firm size did not appear to have any consistent relationship to performance. The larger firms (> 120 employees) tended to be either analyzers or prospectors. 2. With respect to performance, the prospector and defender strategies are superior for smaller firms. 3. Defenders are characterized predominantly by a combination of focus on prices, on-time delivery and product quality. While prospectors also focus on price competitiveness, they combine this with uniqueness.
Hills (1985)	16	venture capital	not specified	Interview and questionnaire	To study the market analysis portion of the business plan	In-depth market analyses are quite valuable, and new venture failure rates could be reduced significantly through improved advance analysis.
Mayer & Goldstein (1961)*	81	Retail and service	≤ 200 employees	Interview	To trace the survival of 81 small businesses in Providence, R.I. over their first 2 years of operation	The major reasons for failure were the lack of planning and systematic decision-making.

Miller (1987)	97	Varied, mostly Francophone	Not specified	Questionnaire and interview	To study relationships between strategy making and structure	<ol style="list-style-type: none"> <li>1. Formal structural integration related to rationality and interaction in decision making, especially in successful and innovative firms, but not to assertiveness, which might be highly influenced by CEO's personalities.</li> <li>2. Decentralization related less significantly to strategy making and was mainly significant in successful firms.</li> <li>3. Complexity had almost no significant associations with strategy making, the consequences of its component variables being particularly obscure.</li> <li>4. The relationships were highest among good performers and seemed to contribute the most to success in the larger and more innovative firms.</li> </ol>
Miller & Toulouse (1986)	97	Varied, mostly Francophone	Not specified	Questionnaire and interview	To establish the impact of strategy, structure, decision making style, and CEO characteristics on performance (growth and profitability)	<ol style="list-style-type: none"> <li>1. The relative growth and profitability of small firms correlated strongly with an innovative product-market position and a more aggressive and analytic mode of decision making guided by an explicitly codified strategy.</li> <li>2. Delegation of decision making authority by the CEO, and the use of trained professional managers and experts were associated with better relative and absolute performance.</li> <li>3. CEO's years in the firm and at his job correlated negatively with most indices of performance, while flexibility and an internal locus of control seemed to have a generally positive impact.</li> </ol>

Najjar (1966)*	94	Manufacturing	100-500 employees	Mail survey; Likert-type questionnaire	To study the relationship between managerial planning and: 1. perceived benefits from planning, 2. perceived impact on sales and profits, and 3. satisfaction with sales and sales	A significant positive correlation was found between "perceived benefits derived from planning" and "reported frequency of planning behaviors." No significant correlations were found between "planning behaviors" and "perceived impact of sales/profits" or "satisfaction with sales/profits."
Orpen (1985)	58	Varied	Not specified	Questionnaire	To compare the performance of small businesses which engage in long-range planning with that of firms which do not (sales growth and ROA)	<ol style="list-style-type: none"> <li>1. The extent of long-range planning was unrelated to company performance, whether assessed by sales growth or ROAs.</li> <li>2. The high-performing firms appear to use a more formal planning process than less successful firms.</li> <li>3. Senior managers in high-performing firms had a more positive attitude toward planning than did their counterparts in low-performing firms.</li> <li>4. Differences existed in the implementation, time horizon, and content of planning used by low-performing and high-performing firms.</li> </ol>
Potts (1977)*	42	Manufacturing	Established in 1968 and ≤ 20 employees; still operating in 1976	Mail questionnaire	To compare the use of outside accounting/financial services between successful and failing small business	Successful firms used outside accounting services as part of their strategic planning activities more extensively than did unsuccessful firms.

Robinson(1980,1982)	101	Service, retailing, manufacturing	< \$3M annual sales, < 50 employees, and independently owned and operated	Interview survey	To assess the impact of outsider-based planning on small firm performance	Small firms engaging in outsider-based strategic planning significantly outperformed control groups in sales, ROG, and employment.
Robinson & Littlejohn (1981)	67	Service, retailing, manufacturing	< \$3M annual sales and < 50 employees	Field study	To determine whether planning is worthwhile for small firms	Planning can greatly affect small firm performance (sales, profitability, employment).
Robinson, Logan, & Salem (1986)	81	Food retailers	SBA definition	Questionnaire	To address the relationship between operational and strategic planning and the contribution of each to 4 performance measures: sales growth, net profit after taxes, employment growth, and overall firm performance compared to competitors	<ol style="list-style-type: none"> <li>1. Above average use of operational planning activities across all four functional areas (marketing, inventory, finance, and personnel) consistently were found to have higher performance levels than their counterparts with below average commitment to the use of these operational planning activities.</li> <li>2. While engaging in high levels of operational planning across 4 functional areas was linked to higher performance, engaging in strategic planning alone was not found to have such a direct link. However, managers of firms reported a high level of strategic planning perceived the performance of their firms to be significantly better than did their counterparts at firms not engaging in strategic planning.</li> <li>3. Firms with a high level of commitment to both types of planning significantly outperformed all remaining firms on all performance measures.</li> <li>4. Over 85% of the firms studied did not systematically practice strategic planning.</li> </ol>

Robinson & Pearce (1983)	85 U.S. banks	Banking industry standards	Questionnaire	To examine the relationship between formality of planning procedures and financial performance.	Formal planners did not outperform non-formal planners over a three-year time period.
Robinson, Pearce, Vozikis, & Mescon (1984)	51 Retailing, service	< \$3M annual sales < 50 employees, and Independently owned and operated	Field study	To study the relationship between planning and performance across different stages of small firm development	<ol style="list-style-type: none"> <li>1. The improvement in effectiveness obtained by small firms that engage in strategic planning is not contingent on stage of development.</li> <li>2. Small firms at each stage of development experienced favorable improvement in effectiveness after engaging in planning.</li> </ol>
Robinson, Salem, Logan, & Pearce (1986)	81 Independent food retailers	SBA definition	Questionnaire	To examine the relationship between company performance and 50 specific planning activities in a small, independent retail firm setting, using 1 set of objective measures and 1 set of subjective measures	6 planning activities - 3 in the marketing area, 1 in financial planning, 1 in inventory planning, and 1 in the personnel area contributed significantly to positive variance in both performance measures.
Trow (1961); Christensen (1953)*	51 Manufacturing	< 1000 employees	Field study; structured interview	To investigate the impact of planning for managerial succession on performance	12 out of 19 firms that planned had undiminished profitability, while only 3 out of 17 firms that did not plan had undiminished profitability.

University of Iowa (1963)*	40	Manufacturing	SBA definition	Questionnaire and interview	To compare successful vs. failing firms on environmental and managerial factors	The approach taken to strategic decision-making and planning best distinguished successful from unsuccessful small firms.
Watts (1987)	170	Banks in Arizona, Idaho, Montana, Nevada, Utah, & Wyoming	< \$150 million in assets & independently owned & operated	Questionnaire	To describe the relationship between planning, owner/manager characteristics, & performance	The level of planning practices sophistication was found to be significantly & positively related to net interest margin.
Woodruff & Alexander (1958)*	41	Manufacturing	SBA definition	Questionnaire and interview	To compare characteristics of 21 successful small manufacturing firms	Successful firms were significantly more involved than unsuccessful companies in planning in general, planning for diversification, and new product planning.
Wyant (1977)*	9000	All types	Not specified	Survey/interview of bankrupted firms and creditor evaluations	To study the causes of business failures	Business failure was caused by management inexperience, incompetence, and lack of planning.

Note: The asterisk indicates that the author did not have access to the original studies; however, the sources appeared in Robinson & Pearce (1984) are listed below:

- Anonymous. (1963). An analysis of environmental and managerial factors in the success or failure of small manufacturing enterprises. Iowa City, IA: Bureau of Business and Economic Research, University of Iowa.
- Chambers, E. J., & Golde, R. L. (1963). A pilot study of successful and unsuccessful small business enterprises within Montana. Missoula, MT: Bureau of Business and Economic Research, Montana State University.
- Chicha, J., & Julien, P. A. (1979). The strategy of SMBs and their adaptation to change. Trois-Rivieres, Quebec: University of Quebec at Trois-Rivieres.
- Christensen, C. R. (1953). Management succession in small and growing firms. Boston, MA: Division of Research, Graduate School of Business, Harvard University.
- Mayer, K., & Goldstein, S. (1961). The first two years: Problems of small firm growth and survival. Washington, DC: Small Business Administration.
- Najjar, M. (1966). Planning in small manufacturing firms. Unpublished doctoral dissertation, Ohio State University, Ohio.
- Robinson, R. B. (1980). An empirical investigation of the impact of SBDC - strategic planning consultation upon the effectiveness of small businesses in Georgia. Unpublished doctoral dissertation, University of Georgia.
- Woodruff, A. M., & Alexander, T. G. (1958). Success and failure in small manufacturing. Pittsburgh, PA: University of Pittsburgh Press.
- Wyant, R. (1977). The business failure record. New York: Dun and Bradstreet.

## APPENDIX 11

## ENGLISH VERSION QUESTIONNAIRE

1. To what extent does your company engage in any of the following activities? A company that is EXHAUSTIVE in dealing with an activity might: form a group of special members; conduct thorough analysis; become fully informed about the issues, options, and ramifications; seek out the opinions of other knowledgeable persons; provide generous budget support; and consider all possible implications and options. On the other hand, a company that is SUPERFICIAL in dealing with the activity might rely entirely on the intuitive judgment of one individual who does little in the way of analysis and study to support the decision activity.

- 0 = NEVER  
 1 = SUPERFICIAL  
 2 = LIMITED  
 3 = ADEQUATE  
 4 = AMPLE  
 5 = EXHAUSTIVE

(PLEASE CIRCLE THE APPROPRIATE RESPONSES)

- a. Define your business in terms of who is being satisfied, what is being satisfied, and how customer needs are satisfied.....0 1 2 3 4 5
- b. Define what your business will be in response to the impact of unpredictable future.....0 1 2 3 4 5
- c. Redefine activity a. and activity b. as needed....0 1 2 3 4 5
- d. Establish specific performance targets and results your company seeks to attain (for example, profitability, efficiency, growth, shareholder wealth, utilization of resources, contributions to customers, employees, and society, market and technological leadership, survival, personal needs).....0 1 2 3 4 5
- e. Revise the performance targets and results as needed.....0 1 2 3 4 5
- f. Identify market opportunities and industry attractiveness (for example, industry structure, direction, economics, long-term attractiveness)...0 1 2 3 4 5
- g. Identify competitive intrusions and threats from the substitute products of companies in other industries.....0 1 2 3 4 5
- h. Identify potential entry of new competitors.....0 1 2 3 4 5
- i. Identify the economic power and bargaining leverage of suppliers (for example, ability to raise prices or reduce the quality of purchased goods and services).....0 1 2 3 4 5
- j. Identify the economic power and bargaining leverage of customers (for example, ability to force down prices, bargain for higher quality or more services).....0 1 2 3 4 5
- k. Identify the competitive forces created by the strategic moves and countermoves of rival firms...0 1 2 3 4 5
- l. Analyze major competitors in terms of market shares, strategies, competitive capabilities, and positions of key rivals.....0 1 2 3 4 5
- m. Identify your company's potential internal strengths (for example, skills, capabilities, resources).....0 1 2 3 4 5

- n. Identify your company's potential internal weaknesses (for example, obsolete facilities, deteriorating competitive position).....0 1 2 3 4 5
  - o. Identify your company's potential external opportunities (for example, diversify into related products, enter new markets, add complementary products).....0 1 2 3 4 5
  - p. Identify your company's potential external threats (for example, social, political, regulatory, ethical, and economic factors).....0 1 2 3 4 5
  - q. Assess the ambitions, values, attitude toward risk, business philosophies, and personal vision of the owner(s) which have influences on strategy.....0 1 2 3 4 5
  - r. Understand your company's distinctive culture (beliefs, expectations, and values) and its pros and cons relative to your approach to achieve the established performance targets....0 1 2 3 4 5
  - s. Explore each viable alternative approach to achieve the established performance targets and results, and determine which one best fits the company's circumstances.....0 1 2 3 4 5
  - t. Review and reformulate your present approach to achieve the established performance targets and results as needed.....0 1 2 3 4 5
  - u. Develop an internal organization structure (formal arrangement of roles and relationships of people as graphically described in an organization chart), the skills and distinctive competences, and select people to carry out the chosen approach.....0 1 2 3 4 5
  - v. Allocate and focus resources on carrying out the chosen approach.....0 1 2 3 4 5
  - w. Rework the implementation and execution of the approach (activity u. and activity v.) as needed..0 1 2 3 4 5
  - x. Compare the company's actual performance with the established targets and take corrective action as needed.....0 1 2 3 4 5
2. How often must you consider new and different sources of information for decision making regarding the planning activities in Question 1? (CIRCLE ONE)
1. NEVER 2. ALMOST NEVER 3. SOMETIMES 4. FREQUENTLY 5. VERY OFTEN
3. How often do the primary sources of information you use for decision making regarding the planning activities in Question 1 change substantially from one time period to the next? (CIRCLE ONE)
1. NEVER 2. ALMOST NEVER 3. SOMETIMES 4. FREQUENTLY 5. VERY OFTEN
4. Regarding the planning activities in Question 1, does your company prepare a written plan covering at least three years?
- \_\_\_ Yes \_\_\_ No.
- If so, please check the appropriate box concerning the time period covered by the plan:
- \_\_\_ 3-5 years \_\_\_ 6-10 years \_\_\_ over 10 years.
5. How often is the written plan updated?
- \_\_\_ never \_\_\_ weekly or less \_\_\_ monthly \_\_\_ quarterly  
 \_\_\_ semi-annually \_\_\_ annually \_\_\_ every 1-3 years.

6. Do you have procedures for anticipating or detecting differences between your plan and actual performance?

YES  No.

If yes, how often is this done?

weekly or less  monthly  quarterly  semi-annually  
 annually  every 1-3 years.

7. Who is responsible for the design and management of your company's planning process?

the chief executive officer  
 all or selected members of top management  
 individual divisions, subsidiaries, and departments are responsible for their own plans  
 a corporate planning department or individual  
 combination of a corporate planning department and the individual divisions, subsidiaries, and departments  
 combination of a corporate planning department and top management  
 other (please explain) \_\_\_\_\_

8. Do you hire outside consultant(s) to assist in the planning effort?

Yes \_\_\_\_\_ No \_\_\_\_\_

9. Which of the following statements best describes your relationship with the company? (CIRCLE ONE)

1. YOU WERE AN ORIGINAL FOUNDER OF THE COMPANY
2. YOU PURCHASED OWNERSHIP IN AN EXISTING COMPANY (BUT NOT FROM A FAMILY MEMBER)
3. YOU INHERITED OWNERSHIP IN THE COMPANY OR PURCHASED OWNERSHIP FROM A FAMILY MEMBER
4. YOU WERE PROMOTED OR BROUGHT INTO AN OWNERSHIP POSITION BY OWNERS OF THE COMPANY
5. YOU WERE PROMOTED OR BROUGHT IN AS A PROFESSIONAL NON-OWNER MANAGER

10. Do you participate/engage regularly in any of the following management educational activities? (Please check all that apply)

- |                |  |             |
|----------------|--|-------------|
| 1. Seminars    | 2. Courses                               | 3. Journals |
| 4. Conferences | 5. Informational Newsletters/Periodicals |             |

11. Please indicate the type of organization under which your business operates:

- |                        |                       |
|------------------------|-----------------------|
| 1. Sole Proprietorship | 2. Partnership        |
| 3. Corporation         | 4. S Type Corporation |

12. How long has your firm been in business?

- |                      |                |
|----------------------|----------------|
| 1. less than 3 years | 2. 3-5 years   |
| 3. 6-10 years        | 4. 11-20 years |
| 5. over 20 years     |                |

13. What is the size of your firm in terms of each of the following criteria:

<u>TOTAL EMPLOYEES</u>		<u>ANNUAL SALES</u>	
1.	1 - 10	1.	under \$1 million
2.	11 - 25	2.	\$1 million - \$2 million
3.	26 - 50	3.	above \$2 million - \$5 million
4.	51 - 100	4.	above \$5 million - \$10 million
5.	101 - 250	5.	above \$10 million - \$20 million
6.	251 - 500	6.	above \$20 million - \$50 million
7.	over 500	7.	above \$50 million

14. What was the average return on sales (ROS) within the past three years?

$$\text{ROS} = \frac{(\text{Profit before taxes} + \text{Owner compensation})}{\text{Sales}}$$

$$\text{Average ROS} = \frac{(\text{ROS in year 1}) + (\text{ROS in year 2}) + (\text{ROS in year 3})}{3}$$

Average ROS = \_\_\_\_\_?

15. Within the past three years, your firm's annual sales have been

1. Growing      2. Static      3. Declining

16. If you answered growing or declining in the prior question, what was the average rate of growth/decline per year?

% Decline \_\_\_\_\_      % Growth \_\_\_\_\_

17. Inevitably when a mail survey is prepared, some important questions are not asked. Please feel free to make any comments that will help in understanding your firm's planning and performance.

## APPENDIX 12

## FRENCH VERSION QUESTIONNAIRE

1. Dans quelle mesure votre entreprise réalise-t-elle les actions suivantes?

- 0 = JAMAIS  
 1 = PRESQUE JAMAIS  
 2 = LIMITÉE  
 3 = MOYENNE  
 4 = AVANCÉE  
 5 = EXHAUSTIVEMENT

Une entreprise qualifiée de RECHERCHE ACTIVE [5] sera engagée dans:

- la création d'équipes de travail spécialisées au sein de l'entreprise
- des analyses et études approfondies
- un effort pour comprendre en profondeur tous les problèmes, les choix et leurs implications
- la recherche d'avis d'experts
- la mise à disposition de larges fonds pour la résolution de problèmes
- la considération de tous les choix de gestion

A l'inverse, une entreprise qualifiée d'INDÉPENDANTE [1] ne dépend pas d'avis extérieurs, reposera plus sur l'esprit d'entreprise et moins sur les cabinets d'études.

- a. Avez-vous étudié au moment de la création de votre entreprise: qui sont vos clients, quels produits vous vendez et comment ces produits répondent aux besoins de clients?.....0 1 2 3 4 5
- b. Avez-vous étudié au moment de la création de votre entreprise l'impact sur votre activité d'événements futurs imprévisibles?.....0 1 2 3 4 5
- c. Étudiez-vous souvent les problèmes posés aux questions a. et b.?.....0 1 2 3 4 5
- d. Établissez-vous des objectifs de gestion? (Par exemple, profitabilité, efficacité, croissance, intérêt des actionnaires, utilisation des ressources, satisfaction des clients, des employés et de la société, position dominante sur le marché et en terme de technologie, longévité de l'entreprise, besoins personnels).....0 1 2 3 4 5
- e. Révissez-vous ces objectifs?.....0 1 2 3 4 5
- f. Étudiez-vous des nouveaux créneaux et nouveaux marchés? (Par exemple, la structure industrielle, les tendances de marché, la situation économique, potentiel de croissance à long terme).....0 1 2 3 4 5
- g. Étudiez-vous les menaces constituées par des produits de substitution créés par la concurrence?.....0 1 2 3 4 5
- h. Étudiez-vous la création potentielle de nouveaux concurrents?.....0 1 2 3 4 5

- i. Analysez-vous le pouvoir économique et de négociation de vos fournisseurs? (Par exemple, leur capacité d'augmenter les prix, ou de diminuer la qualité de leurs produits).....0 1 2 3 4 5
- j. Analysez-vous le pouvoir économique et de négociation de vos clients? (Par exemple, leur capacité de baisser vos prix, ou de négocier une meilleure qualité de vos produits)...0 1 2 3 4 5
- k. Identifiez-vous les changements introduits par les décisions stratégiques et revirements de vos concurrents?.....0 1 2 3 4 5
- l. Analysez-vous vos concurrents majeurs en terme de part de marché, stratégie et leur capacité concurrentielle?.....0 1 2 3 4 5
- m. Analysez-vous les points forts internes à votre entreprise? (Par exemple, compétences, capacités, ressources).....0 1 2 3 4 5
- n. Analysez-vous les points faibles internes à votre entreprise? (Par exemple, installations obsolètes, détérioration de votre position concurrentielle).....0 1 2 3 4 5
- o. Analysez-vous les potentialités externes? (Par exemple, diversification dans des produits similaires, pénétrer de nouveaux marchés, ajouter des produits complémentaires).....0 1 2 3 4 5
- p. Identifiez-vous les menaces extérieures qui peuvent peser sur votre entreprise? (social, politique, législation, morale et facteurs économiques).....0 1 2 3 4 5
- q. Analysez-vous les ambitions, les valeurs, l'attitude envers le risque, la philosophie des affaires et les visions personnelles du ou des actionnaires qui influence(nt) la stratégie de votre entreprise?.....0 1 2 3 4 5
- r. Analysez-vous la culture distincte de votre entreprise (croyances, espérances et valeurs) et ses avantages et inconvénients par rapport à votre approche dans la réalisation des objectifs?..0 1 2 3 4 5
- s. Explorez-vous chaque alternative pour atteindre les objectifs et déterminez-vous laquelle est la plus appropriée aux conditions de l'entreprise?...0 1 2 3 4 5
- t. Revisez-vous et reformulez-vous votre approche présente pour atteindre les objectifs?.....0 1 2 3 4 5
- u. Développez-vous un organigramme interne (description graphique du rôle de chaque employé), les compétences et choisissez-vous les personnes pour mener à bien les choix stratégiques choisis?.0 1 2 3 4 5
- v. Investissez-vous des ressources pour mener à bien vos choix stratégiques?.....0 1 2 3 4 5
- w. Redéfinissez-vous la mise en place des choix stratégiques (points u. et v.) autant que nécessaire?.....0 1 2 3 4 5
- x. Comparez-vous la performance réelle de l'entreprise avec les objectifs établis et prenez-vous des mesures correctrices si nécessaire?.....0 1 2 3 4 5

2. Considérez-vous de nouvelles sources d'information pour prendre les décisions qui sont liées au planning décrit à la question 1?
1. JAMAIS 2. PRESQUE JAMAIS 3. PARFOIS 4. SOUVENT 5. TRÈS SOUVENT
3. À quelle fréquence ces sources d'information changent-elles?
1. JAMAIS 2. PRESQUE JAMAIS 3. PARFOIS 4. SOUVENT 5. TRÈS SOUVENT
4. En ce qui concerne les actions décrites à la question 1, est-ce que votre entreprise prépare un plan couvrant au moins 3 ans?
- OUI  NON
- Si un tel plan existe, indiquez sa période:
- 3-5 ANS  6-10 ANS  PLUS DE 10 ANS
5. À quelle fréquence ce plan est-il mis à jour?
- JAMAIS  HEBDOMADAIRE  MENSUEL  TRIMESTRIEL
- SEMI-ANNUEL  ANNUEL  TOUS LES 1 À 3 ANS
6. Avez-vous des procédures pour anticiper ou détecter des différences entre les objectifs et la performance réelle?
- OUI  NON
- Si oui, à quelle fréquence effectuez-vous ces vérifications?
- JAMAIS  HEBDOMADAIRE  MENSUEL  TRIMESTRIEL
- SEMI-ANNUEL  ANNUEL  TOUS LES 1 À 3 ANS
7. Qui est responsable pour la création et la gestion du processus de planification dans votre entreprise?
- LE DIRECTEUR
- TOUS OU CERTAINS CADRES SUPÉRIEURS
- CERTAINES DIVISIONS, FILIALES, OU DÉPARTEMENTS SONT RESPONSABLES POUR LEUR PROPRE PLANIFICATION
- LE DÉPARTEMENT DE PLANIFICATION D'ENTREPRISE OU LE RESPONSABLE DE LA PLANIFICATION
- UNE COMBINAISON ENTRE LE DÉPARTEMENT DE PLANIFICATION ET LES DIVISIONS, FILIALES ET DÉPARTEMENTS
- UNE COMBINAISON ENTRE LE DÉPARTEMENT DE PLANIFICATION ET LES CADRES SUPÉRIEURS
- AUTRE (VEUILLEZ EXPLIQUER) \_\_\_\_\_
8. Recrutez-vous des consultants pour vous assister dans l'effort de planification?
- OUI  NON
9. Comment vous situez-vous par rapport à l'entreprise?
1. VOUS ÊTES LE FONDATEUR
2. VOUS AVEZ ACHETÉ LES PARTS DE L'ENTREPRISE (MAIS PAS D'UN MEMBRE DE VOTRE FAMILLE)
3. VOUS AVEZ HÉRITÉ DE LA SOCIÉTÉ OU ACHETÉ LES PARTS D'UN MEMBRE DE VOTRE FAMILLE
4. VOUS AVEZ ÉTÉ PROMU OU PLACÉ DANS UNE POSITION D'ACTIONNAIRE DE L'ENTREPRISE
5. VOUS AVEZ ÉTÉ PROMU OU PLACÉ EN TANT QUE DIRECTEUR NON-ACTIONNAIRE
10. Prenez-vous part aux activités suivantes:
1. SÉMINAIRES 2. FORMATION 3. JOURNAUX
4. CONFÉRENCES 5. BULLETINS D'INFORMATION/REVUES

11. Précisez le type de votre entreprise:

1. SA 2. SARL 3. AUTRE (VEUILLEZ EXPLIQUER) \_\_\_\_\_

12. Quel est l'âge de votre entreprise?

1. MOINS DE 3 ANS 2. 3-5 ANS  
3. 6-10 ANS 4. 11-20 ANS  
5. PLUS DE 20 ANS

13. Quel est la taille de votre entreprise?

EFFECTIF	CHIFFRE D'AFFAIRES (SUR 12 MOIS)
1. 1-10	1. MOINS DE 50.000.000 FF
2. 11-25	2. 50.000.000 FF - 100.000.000 FF
3. 26-50	3. 100.000.001 FF - 150.000.000 FF
4. 51-100	4. 150.000.001 FF - 200.000.000 FF
5. 101-250	5. 200.000.001 FF - 250.000.000 FF
6. 251-500	6. 250.000.001 FF - 300.000.000 FF
7. PLUS DE 500	7. 300.000.001 FF - 350.000.000 FF
	8. 350.000.001 FF - 400.000.000 FF
	9. 400.000.001 FF - 450.000.000 FF
	10. 450.000.001 FF - 500.000.000 FF
	11. PLUS DE 500.000.000 FF

14. Quel est la rentabilité moyenne sur les trois dernières années?

RENTABILITÉ =  $\frac{\text{BÉNÉFICE} + \text{SALAIRE ET COMPENSATION DU CHEF D'ENTREPRISE}}{\text{CHIFFRE D'AFFAIRES}}$

RENTABILITÉ MOYENNE =

$\frac{\text{RENTABILITÉ-DE L'AN 1} + \text{RENTABILITÉ DE L'AN 2} + \text{RENTABILITÉ DE L'AN 3}}{3}$

RENTABILITÉ MOYENNE DE VOTRE ENTREPRISE = \_\_\_\_\_ ?

15. Depuis trois ans, les chiffres d'affaires de votre entreprise ont été:

1. EN CROISSANCE 2. STABLE 3. EN DECROISSANCE

16. Si vous avez répondu "CROISSANCE" ou "DECROISSANCE" à la question précédente, quel en a été le pourcentage?

% CROISSANCE \_\_\_\_\_ % DECROISSANCE \_\_\_\_\_

17. Inévitablement dans un questionnaire par publi-postage, certaines questions importantes ne sont pas posées. N'hésitez pas à faire tout commentaire qui pourrait aider à la compréhension des processus de planification et la performance de votre entreprise.

APPENDIX 13  
COVER LETTER



Baruch College  
The City University of New York  
17 Lexington Avenue  
New York, New York 10010

Dear :

I am currently engaged in research for my Ph.D. in Management Planning Systems at Baruch College, CUNY where I am also an adjunct lecturer. My elected dissertation is Planning and Organizational Effectiveness in Small Pulp and Paper Firms: A Study of French and American Practices. Although previous research has examined planning and its impact on large and small firms, this study, to the best of my knowledge, is the first comprehensive effort to examine the management practices of small pulp and paper firms at the international level.

I have designed a questionnaire to obtain information on the management practices of small pulp and paper firms. I would therefore appreciate your completing the attached form for me. As it is essential to my study that I obtain a high response rate to it, your kind cooperation will be gratefully appreciated.

Answers to all questions are voluntary and will, of course, be kept in strictest confidence. Please feel free to include any comments you feel would be helpful to this project. Information that might identify you will never be disclosed to anyone. The identification number on the front of the questionnaire is used for mailing purposes only. A postage paid return envelope has been included for your convenience.

A summary of the research findings and implications will be available to all survey respondents. This summary will provide you with an insight into the sophistication of your management practices.

I would like to thank you in advance for your participation.

Sincerely,

Adith Cheosakul  
Adjunct Lecturer  
Department of Management



Baruch College  
The City University of New York  
17 Lexington Avenue  
New York, New York 10010

New York, le

Monsieur le Directeur,

Je suis actuellement en train de réaliser une thèse sur les Systèmes de Planning de Gestion à Baruch College, The City University of New York, où je suis également professeur assistant. Le sujet de ma thèse est:

PLANNING ET L'ORGANISATION AU SEIN DES P.M.E. DE  
L'INDUSTRIE DES PAPIERS, CARTONS, ET CELLULOSES:  
UNE ETUDE COMPARATIVE ENTRE LA FRANCE ET LES ETATS-UNIS

Bien qu'il existe des études portant sur les grandes entreprises, cette étude est la première à analyser les systèmes de gestion des P.M.E. de cette industrie de façon internationale.

J'ai établi une liste de questions afin de collecter l'information nécessaire à l'analyse de cette industrie. Je vous serais extrêmement reconnaissant de bien vouloir compléter le questionnaire ci-joint.

Toutes les réponses à ce questionnaire sont libres et seront, bien sûr, traitées de façon strictement confidentielle - le numéro d'identification sur le questionnaire est utilisé uniquement pour le publi-postage. Je vous demanderais d'ajouter tout commentaire qui vous paraît utile à cette étude. Vous trouverez également ci-joint une enveloppe timbrée.

Un résumé des résultats de l'étude et de ses implications sera à votre disposition dès publication. Ce résumé, je l'espère, vous donnera un point de vue original sur votre branche, ainsi qu'une étude approfondie de ses méthodes de gestion.

En vous remerciant très vivement à l'avance de votre participation, je vous prie d'agréer, Monsieur, l'expression de mes sentiments respectueux.

Adith CHEOSAKUL

Adjunct lecturer  
Department of Management

P.J.: 1 questionnaire + 1 enveloppe timbrée

## APPENDIX 14

## FOLLOW-UP COVER LETTER



Baruch College  
The City University of New York  
17 Lexington Avenue  
New York, New York 10010

Dear :

I mailed a questionnaire to you two months ago. Since I have not received your response, I presume that the questionnaire was lost in the mail. Your response to this questionnaire is essential to the success of my research.

I am currently engaged in research for my Ph.D. in Management Planning Systems at Baruch College, CUNY where I am also an adjunct lecturer. My elected dissertation is Planning and Organizational Effectiveness in Small Pulp and Paper Firms: A Study of French and American Practices. Although previous research has examined planning and its impact on large and small firms, this study, to the best of my knowledge, is the first comprehensive effort to examine the management practices of small pulp and paper firms at the international level.

I have designed a questionnaire to obtain information on the management practices of small pulp and paper firms. I would therefore appreciate your completing the attached form for me. As it is essential to my study that I obtain a high response rate to it, your kind cooperation will be gratefully appreciated.

Answers to all questions are voluntary and will, of course, be kept in strictest confidence. Please feel free to include any comments you feel would be helpful to this project. Information that might identify you will never be disclosed to anyone. The identification number on the front of the questionnaire is used for mailing purposes only. A postage paid return envelope has been included for your convenience.

A summary of the research findings and implications will be available to all survey respondents. This summary will provide you with an insight into the sophistication of your management practices.

I would like to thank you in advance for your participation.

Sincerely,

Adith Cheosakul  
Adjunct Lecturer  
Department of Management



Baruch College  
The City University of New York  
17 Lexington Avenue  
New York, New York 10010

New York, le

Monsieur le Directeur,

Je vous ai envoyé un questionnaire il y a deux mois. Comme je n'ai pas encore reçu votre réponse, je présume qu'il a été perdu dans le courrier. L'acquisition des renseignements fournis par ce questionnaire est primordiale pour le succès de ma thèse.

Je suis actuellement en train de réaliser une thèse sur les Systèmes de Planning de Gestion à Baruch College, The City University of New York, où je suis également professeur assistant. Le sujet de ma thèse est:

PLANNING ET L'ORGANISATION AU SEIN DES P.M.E. DE  
L'INDUSTRIE DES PAPIERS, CARTONS, ET CELLULOSES:  
UNE ÉTUDE COMPARATIVE ENTRE LA FRANCE ET LES ÉTATS-UNIS

Bien qu'il existe des études portant sur les grandes entreprises, cette étude est la première à analyser les systèmes de gestion des P.M.E. de cette industrie de façon internationale.

J'ai établi une liste de questions afin de collecter l'information nécessaire à l'analyse de cette industrie. Je vous serais extrêmement reconnaissant de bien vouloir compléter le questionnaire ci-joint.

Toutes les réponses à ce questionnaire sont libres et seront, bien sûr, traitées de façon strictement confidentielle - le numéro d'identification sur le questionnaire est utilisé uniquement pour le publi-postage. Je vous demanderais d'ajouter tout commentaire qui vous paraît utile à cette étude. Vous trouverez également ci-jointes une enveloppe et ma carte de visite avec mes adresses personnelles aux États-Unis et en Thaïlande.

Un résumé des résultats de l'étude et de ses implications sera à votre disposition dès publication. Ce résumé, je l'espère, vous donnera un point de vue original sur votre branche, ainsi qu'une étude approfondie de ses méthodes de gestion. Si je peux vous rendre service, n'hésitez pas à me demander.

En vous remerciant très vivement à l'avance de votre participation, je vous prie d'agréer, Monsieur, l'expression de mes sentiments respectueux.

Adith CHEOSAKUL

Adjunct Lecturer  
Department of Management

P.J.: 1 questionnaire + 1 enveloppe + 1 carte de visite

APPENDIX 15

FACTOR ANALYSIS (U.S.A.)

		MEANS AND STANDARD DEVIATIONS FROM										92 OBSERVATIONS														
		P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	
MEAN		3.47826	2.73913	2.98915	2.98915	3.41304	3.33696	3.19365	3.09182	2.96739	2.71739	2.69365	3.47826	3.50835	3.03261	3.03261	2.98915	3.04988	3.04988	3.04988	3.04988	3.04988	3.04988	3.04988	3.04988	3.04988
STD DEV		1.10822	1.15663	1.10822	1.10822	1.14802	1.0085	1.09182	1.08586	1.08586	1.29318	1.29318	1.10822	1.04817	1.29860	1.29860	1.29860	1.29860	1.29860	1.29860	1.29860	1.29860	1.29860	1.29860	1.29860	1.29860
MEAN		3.17392	3.17392	3.17392	3.17392	3.17392	3.17392	3.17392	3.17392	3.17392	3.17392	3.17392	3.17392	3.50835	3.03261	3.03261	2.98915	3.04988	3.04988	3.04988	3.04988	3.04988	3.04988	3.04988	3.04988	3.04988
STD DEV		1.04817	1.04817	1.04817	1.04817	1.04817	1.04817	1.04817	1.04817	1.04817	1.04817	1.04817	1.04817	1.29860	1.29860	1.29860	1.29860	1.29860	1.29860	1.29860	1.29860	1.29860	1.29860	1.29860	1.29860	1.29860
MEAN		3.50835	3.50835	3.50835	3.50835	3.50835	3.50835	3.50835	3.50835	3.50835	3.50835	3.50835	3.50835	3.03261	3.03261	3.03261	2.98915	3.04988	3.04988	3.04988	3.04988	3.04988	3.04988	3.04988	3.04988	3.04988
STD DEV		1.29860	1.29860	1.29860	1.29860	1.29860	1.29860	1.29860	1.29860	1.29860	1.29860	1.29860	1.29860	1.04817	1.04817	1.04817	1.04817	1.04817	1.04817	1.04817	1.04817	1.04817	1.04817	1.04817	1.04817	1.04817

CORRELATIONS

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
P1	1.00000	0.50836	0.57202	0.44862	0.50898	0.39905	0.29781	0.38831	0.52786	0.28679	0.32841	0.45670
P2	0.50836	1.00000	0.67738	0.39631	0.50938	0.37925	0.28687	0.38837	0.52786	0.28679	0.32841	0.45670
P3	0.57202	0.67738	1.00000	0.39631	0.47691	0.40278	0.28682	0.38837	0.52786	0.28679	0.32841	0.45670
P4	0.44862	0.39631	0.39631	1.00000	0.46881	0.38213	0.28682	0.38837	0.52786	0.28679	0.32841	0.45670
P5	0.50898	0.50938	0.47691	0.46881	1.00000	0.48261	0.28682	0.38837	0.52786	0.28679	0.32841	0.45670
P6	0.39905	0.37925	0.40278	0.38213	0.48261	1.00000	0.28682	0.38837	0.52786	0.28679	0.32841	0.45670
P7	0.29781	0.28687	0.28682	0.28682	0.28682	0.28682	1.00000	0.38837	0.52786	0.28679	0.32841	0.45670
P8	0.38831	0.38837	0.38837	0.38837	0.38837	0.38837	0.38837	1.00000	0.52786	0.28679	0.32841	0.45670
P9	0.52786	0.52786	0.52786	0.52786	0.52786	0.52786	0.52786	0.52786	1.00000	0.28679	0.32841	0.45670
P10	0.28679	0.28679	0.28679	0.28679	0.28679	0.28679	0.28679	0.28679	0.28679	1.00000	0.32841	0.45670
P11	0.32841	0.32841	0.32841	0.32841	0.32841	0.32841	0.32841	0.32841	0.32841	0.32841	1.00000	0.45670
P12	0.45670	0.45670	0.45670	0.45670	0.45670	0.45670	0.45670	0.45670	0.45670	0.45670	0.45670	1.00000

**CORRELATIONS**

	P13	P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24
P1	0.44521	0.34565	0.42737	0.24629	0.34950	0.51207	0.46061	0.33770	0.32611	0.48380	0.51713	0.48667
P2	0.34437	0.20531	0.28191	0.35792	0.40460	0.45427	0.51734	0.33144	0.24899	0.38688	0.29546	0.46765
P3	0.33107	0.24787	0.24539	0.12313	0.33946	0.42461	0.42114	0.41646	0.27632	0.32863	0.35525	0.48749
P4	0.50178	0.32091	0.41732	0.36194	0.51529	0.41661	0.50502	0.56941	0.51021	0.64822	0.54569	0.72254
P5	0.53443	0.41508	0.36713	0.35869	0.58367	0.46441	0.46374	0.53859	0.44727	0.54697	0.47240	0.60512
P6	0.33749	0.19874	0.42943	0.27716	0.42255	0.47474	0.47221	0.40296	0.33469	0.36630	0.38061	0.44101
P7	0.26830	0.17441	0.30467	0.39469	0.37406	0.35594	0.45575	0.42523	0.29238	0.38052	0.32860	0.43909
P8	0.18247	0.11794	0.24503	0.44861	0.38489	0.30917	0.49176	0.45720	0.21626	0.36630	0.35746	0.40832
P9	0.40641	0.28180	0.33521	0.31910	0.47917	0.44463	0.46571	0.31749	0.09806	0.32246	0.36333	0.29511
P10	0.35356	0.31014	0.29590	0.29122	0.23679	0.32334	0.40536	0.32713	0.10473	0.31476	0.32683	0.24763
P11	0.24279	0.30133	0.40528	0.39312	0.20011	0.29326	0.44157	0.33838	0.13507	0.30080	0.35753	0.31750
P12	0.31940	0.20770	0.34571	0.46779	0.33326	0.36518	0.52641	0.41824	0.26457	0.44461	0.52325	0.45893
P13	1.00000	0.73479	0.58172	0.43133	0.48795	0.31687	0.62030	0.56106	0.44461	0.52325	0.44821	0.39666
P14	0.73479	1.00000	0.40155	0.31830	0.42644	0.33751	0.38769	0.38533	0.40058	0.43127	0.56459	0.52054
P15	0.40155	0.40155	1.00000	0.57741	0.32516	0.34928	0.46861	0.41604	0.31664	0.45015	0.51856	0.42795
P16	0.43133	0.31830	0.57741	1.00000	0.43976	0.43789	0.40014	0.37773	0.27253	0.43263	0.44657	0.29385
P17	0.48795	0.42644	0.32516	0.43976	1.00000	0.57409	0.38288	0.42777	0.37978	0.46457	0.37268	0.24493
P18	0.51687	0.31751	0.34928	0.43789	0.57409	1.00000	0.57596	0.83213	0.59207	0.50742	0.59813	0.59606
P19	0.62030	0.38769	0.46861	0.40014	0.38288	0.57596	1.00000	0.72403	1.00000	0.68691	0.71465	0.57667
P20	0.56106	0.38533	0.41604	0.37773	0.42777	0.43213	0.72403	1.00000	0.59207	1.00000	0.71465	0.63981
P21	0.44461	0.40058	0.31664	0.27253	0.37978	0.41690	0.40761	0.59207	1.00000	0.59813	1.00000	0.59606
P22	0.52325	0.43127	0.45015	0.43263	0.44657	0.46713	0.47916	0.50742	0.50742	1.00000	0.71465	0.57667
P23	0.54569	0.48921	0.51856	0.44657	0.37268	0.46521	0.58403	0.59813	0.59813	0.55204	1.00000	0.63981
P24	0.52054	0.39666	0.42795	0.29205	0.42893	0.40979	0.59042	0.59606	0.55204	0.57667	0.63981	1.00000

**INITIAL FACTOR METHOD: PRINCIPAL FACTORS**

**PRIOR COMMUNALITY ESTIMATES: SMC**

P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
0.633063	0.489248	0.647805	0.847860	0.805203	0.577678	0.759614	0.752144	0.539498	0.647472	0.754242	0.725302
P13	P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24
0.786153	0.704107	0.621549	0.644787	0.627355	0.619059	0.762797	0.735004	0.654629	0.741666	0.714752	0.746069

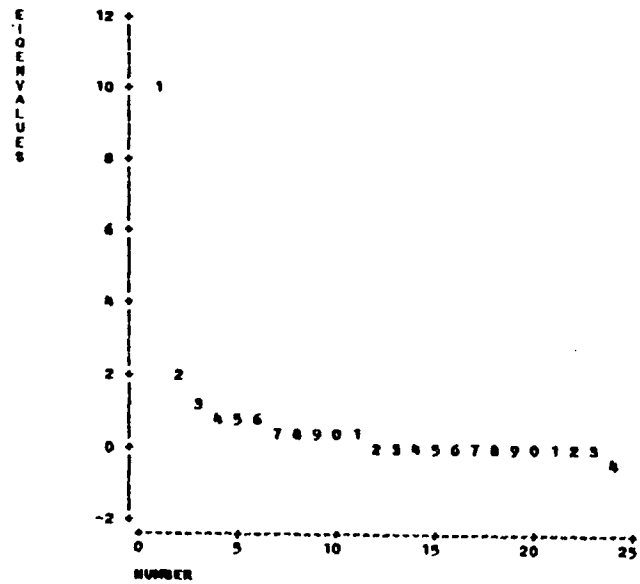
**EIGENVALUES OF THE REDUCED CORRELATION MATRIX: TOTAL = 16.7191 AVERAGE = 0.696631**

	1	2	3	4	5	6	7	8	9	10	11	12
EIGENVALUE	10.197746	1.831569	1.212659	0.904344	0.670098	0.616148	0.585416	0.483022	0.346100	0.299654	0.249918	0.150050
DIFFERENCE	8.366217	0.618910	0.308315	0.233446	0.054750	0.030732	0.102394	0.156922	0.046446	0.039736	0.059868	0.024286
PROPORTION	0.6099	0.1095	0.0725	0.0541	0.0401	0.0369	0.0350	0.0289	0.0207	0.0179	0.0149	0.0090
CUMULATIVE	0.6099	0.7195	0.7920	0.8461	0.8862	0.9231	0.9581	0.9870	1.0077	1.0256	1.0406	1.0495
	13	14	15	16	17	18	19	20	21	22	23	24
EIGENVALUE	0.129764	0.072513	0.066712	-0.011818	-0.037124	-0.078414	-0.121248	-0.131707	-0.143491	-0.176280	-0.184262	-0.209072
DIFFERENCE	0.053251	0.005801	0.078530	0.025306	0.041290	0.042833	0.010459	0.011785	0.032789	0.007982	0.024810	0.000000
PROPORTION	0.0075	0.0043	0.0040	-0.0007	-0.0022	-0.0047	-0.0073	-0.0079	-0.0086	-0.0105	-0.0110	-0.0125
CUMULATIVE	1.0571	1.0614	1.0654	1.0647	1.0625	1.0578	1.0505	1.0427	1.0341	1.0235	1.0125	1.0000

4 FACTORS WILL BE RETAINED BY THE NFACTOR CRITERION

INITIAL FACTOR METHOD: PRINCIPAL FACTORS

SCREE PLOT OF EIGENVALUES



INITIAL FACTOR METHOD: PRINCIPAL FACTORS

	FACTOR PATTERN											
	FACTOR1	FACTOR2	FACTOR3	FACTOR4	FACTOR5	FACTOR6	FACTOR7	FACTOR8	FACTOR9	FACTOR10	FACTOR11	FACTOR12
P19	0.77626	0.03661	0.02720	0.02438	0.00732	0.00732	0.00732	0.00732	0.00732	0.00732	0.00732	0.00732
P20	0.16715	-0.13799	-0.10504	0.00732	0.00732	0.00732	0.00732	0.00732	0.00732	0.00732	0.00732	0.00732
P21	0.12298	-0.20292	-0.17182	-0.13799	-0.10504	-0.07298	-0.04002	-0.00706	0.00732	0.00732	0.00732	0.00732
P22	0.78169	-0.52332	0.47030	-0.42617	-0.38104	-0.33591	-0.29078	-0.24565	-0.20052	-0.15539	-0.11026	-0.06513
P23	0.78169	-0.52332	0.47030	-0.42617	-0.38104	-0.33591	-0.29078	-0.24565	-0.20052	-0.15539	-0.11026	-0.06513
P24	0.72985	-0.12742	0.06979	-0.22388	-0.22388	-0.22388	-0.22388	-0.22388	-0.22388	-0.22388	-0.22388	-0.22388
P25	0.71357	-0.30868	0.34777	0.22163	0.22163	0.22163	0.22163	0.22163	0.22163	0.22163	0.22163	0.22163
P26	0.67411	-0.06439	-0.02930	0.20265	0.20265	0.20265	0.20265	0.20265	0.20265	0.20265	0.20265	0.20265
P27	0.64634	0.42082	-0.03930	-0.12367	-0.12367	-0.12367	-0.12367	-0.12367	-0.12367	-0.12367	-0.12367	-0.12367
P28	0.63504	-0.09617	-0.01318	0.30481	0.30481	0.30481	0.30481	0.30481	0.30481	0.30481	0.30481	0.30481
P29	0.62413	0.02829	-0.08239	-0.18288	-0.18288	-0.18288	-0.18288	-0.18288	-0.18288	-0.18288	-0.18288	-0.18288
P30	0.61290	-0.05997	0.26937	0.63139	0.63139	0.63139	0.63139	0.63139	0.63139	0.63139	0.63139	0.63139
P31	0.59950	0.48906	-0.06681	-0.23806	-0.23806	-0.23806	-0.23806	-0.23806	-0.23806	-0.23806	-0.23806	-0.23806
P32	0.58703	0.15587	0.27223	-0.10048	-0.10048	-0.10048	-0.10048	-0.10048	-0.10048	-0.10048	-0.10048	-0.10048
P33	0.58676	-0.40200	-0.00016	-0.11263	-0.11263	-0.11263	-0.11263	-0.11263	-0.11263	-0.11263	-0.11263	-0.11263
P34	0.58216	0.53498	-0.11524	-0.04216	-0.04216	-0.04216	-0.04216	-0.04216	-0.04216	-0.04216	-0.04216	-0.04216
P35	0.57942	-0.02812	-0.30294	-0.04216	-0.04216	-0.04216	-0.04216	-0.04216	-0.04216	-0.04216	-0.04216	-0.04216
P36	0.56935	-0.04286	-0.42662	0.33890	0.33890	0.33890	0.33890	0.33890	0.33890	0.33890	0.33890	0.33890
P37	0.54929	-0.27267	0.24268	0.21922	0.21922	0.21922	0.21922	0.21922	0.21922	0.21922	0.21922	0.21922
P38	0.52823	-0.48308	0.28931	0.16141	0.16141	0.16141	0.16141	0.16141	0.16141	0.16141	0.16141	0.16141
P39	0.52318	-0.48308	0.28931	0.16141	0.16141	0.16141	0.16141	0.16141	0.16141	0.16141	0.16141	0.16141

VARIANCE EXPLAINED BY EACH FACTOR

FACTOR1	FACTOR2	FACTOR3	FACTOR4
10.197786	1.831959	1.212659	0.904834

FINAL COMMUNITY ESTIMATES: TOTAL = 14.146398

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
	0.592803	0.630233	0.632826	0.718183	0.639643	0.430070	0.638663	0.669373	0.465358	0.368877	0.638581	0.611688
	0.774322	0.669817	0.432724	0.493190	0.427766	0.300231	0.609270	0.599919	0.602653	0.647982	0.637405	0.666648

ROTATION METHOD: VARIMAX

ORTHOGONAL TRANSFORMATION MATRIX

	1	2	3	4
1	0.58136	0.50178	0.47133	0.28362
2	-0.48523	0.63200	-0.08298	-0.25582
3	-0.10690	0.13276	-0.67252	0.72037
4	-0.64431	-0.19586	0.56920	0.47171

ROTATED FACTOR PATTERN

	FACTOR1	FACTOR2	FACTOR3	FACTOR4
F21	0.73763	0.02117	0.11599	0.21360
F2	0.71053	0.28442	0.39386	0.18119
F22	0.67868	0.20868	0.32802	0.32802
F24	0.64738	0.21601	0.42201	0.24629
F20	0.62719	0.50801	0.28201	0.44651
F23	0.59878	0.23153	0.16123	0.22592
F3	0.52648	0.23872	0.50553	-0.22592
F11	0.07489	0.73506	0.16658	0.18737
F7	0.48482	0.74963	0.19221	-0.03825
F4	0.25422	0.43828	0.23221	0.00480
F10	-0.02867	0.62331	0.14228	0.09196
F9	0.02480	0.86655	0.23972	0.21129
F16	0.41478	0.41877	0.42976	0.56191
F19	0.17905	0.12701	0.36000	0.35813
F3	0.17905	0.12701	0.78992	0.11088
F2	0.17680	0.28574	0.72887	0.07888
F1	0.22617	0.11589	0.57055	0.39948
F6	0.41095	0.25358	0.43599	0.02068
F18	0.41728	0.29158	0.43528	0.38641
F17	0.38466	0.10800	0.38580	0.38900
F15	0.26981	0.05887	0.10485	0.72482
F15	0.33629	0.28723	0.12831	0.48065

VARIANCE EXPLAINED BY EACH FACTOR

FACTOR1	FACTOR2	FACTOR3	FACTOR4
5.287179	3.671950	3.109963	2.877664

FINAL COMMUNITY ESTIMATES: TOTAL = 10.168398

	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12
0.322303	0.650239	0.622856	0.772785	0.439645	0.830070	0.638865	0.669373	0.465958	0.588677	0.650581	0.611686	
0.774532	0.609417	0.432794	0.633100	0.427785	0.580381	0.683270	0.399919	0.603633	0.647982	0.637488	0.644668	

ROTATION METHOD: VARIMAX

SCORING COEFFICIENTS ESTIMATED BY REGRESSION  
 SQUARED MULTIPLE CORRELATIONS OF THE VARIABLES WITH EACH FACTOR

FACTOR1 FACTOR2 FACTOR3 FACTOR4  
 0.859950 0.889810 0.810487 0.837781

STANDARDIZED SCORING COEFFICIENTS

	FACTOR1	FACTOR2	FACTOR3	FACTOR4
P21	0.28316	-0.07376	-0.09037	-0.04044
P4	0.38475	-0.05556	0.01052	-0.24729
P22	0.20021	-0.02383	-0.11253	0.05182
P24	0.12447	-0.04982	0.06350	-0.03049
P20	0.22933	0.01543	-0.11170	-0.06058
P23	0.14371	-0.00744	-0.09051	0.09267
P5	-0.00326	-0.03960	0.20375	0.00789
P11	-0.15925	0.28330	-0.03610	0.09241
P8	0.04743	0.27521	-0.09805	-0.14782
P7	0.06436	0.24238	-0.00675	-0.18283
P12	0.05970	0.21007	-0.04334	-0.14762
P10	-0.18064	0.16621	-0.02345	0.15792
P9	-0.12516	0.08255	0.02158	0.12869
P16	0.01275	0.10326	-0.15382	0.12083
P19	-0.00808	0.06340	0.07428	0.05694
P3	-0.11420	-0.07466	0.34616	-0.01823
P2	-0.09933	-0.02065	0.36096	-0.09585
P1	-0.07443	-0.06317	0.21137	0.04224
P6	0.05414	-0.02169	0.10375	-0.08609
P18	-0.02360	-0.01642	0.12392	0.05777
P17	-0.02874	-0.00312	0.08271	0.09003
P13	-0.09109	-0.09338	-0.02678	0.44038
P14	0.00578	-0.08325	-0.07128	0.25424
P15	0.02341	0.03502	-0.05509	0.10121

APPENDIX 16

FACTOR ANALYSIS (FRANCE)

MEANS AND STANDARD DEVIATIONS FROM		NO OBSERVATIONS											
		P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
MEAN		3.15	3.25	3.15	3.25	3.35	3.65	3.3	3.85	3.125	3.125	3.225	3.275
STD DEV		1.38119	1.45002	1.21	0.98417	0.975537	1.18866	1.1568	1.18102	1.18832	0.91185	0.93356	0.93356
MEAN		3.375	3.775	3.375	3.375	3.625	3.75	3.75	3.225	3.225	3.225	3.275	3.275
STD DEV		1.10215	0.891196	1.07868	0.925392	0.707107	0.832836	0.80028	0.93356	0.80028	0.93356	0.93356	0.93356
MEAN		2.825	2.45	2.45	3.075	3.075	3.125	3.125	3.125	3.125	3.125	3.125	3.125
STD DEV		1.25856	1.21885	1.03651	1.09515	1.09515	1.38096	0.818925	1.18832	0.91185	0.91185	0.91185	0.91185

CORRELATIONS

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
P1	1.00000	0.28821	0.31915	0.16373	0.16730	0.28408	0.26782	0.02817	0.02827	0.18123	-0.02582	0.26319
P2	0.66373	1.00000	0.39858	0.16371	0.03626	0.18338	0.25722	0.02816	0.01504	0.21779	-0.09036	0.07370
P3	0.23321	0.39858	1.00000	0.85328	0.49734	0.48676	0.35098	0.35098	0.04512	0.11275	0.16639	0.43507
P4	0.37915	0.16171	0.45324	1.00000	0.49284	0.86773	0.58023	0.12085	-0.04512	0.10725	0.14811	0.63984
P5	0.18730	0.03626	0.49734	0.49284	1.00000	0.98818	0.18038	0.07849	0.05660	0.04943	0.19545	0.37373
P6	0.21408	0.18338	0.48676	0.86773	0.58023	1.00000	0.69361	0.22675	0.10670	0.89898	0.82868	0.37373
P7	0.28408	0.26782	0.35098	0.35098	0.41033	0.41033	1.00000	1.00000	0.05116	0.89898	0.82868	0.37373
P8	0.02817	0.02816	0.02816	0.02816	0.02816	0.02816	0.02816	1.00000	0.05116	0.89898	0.82868	0.37373
P9	0.01504	0.01504	0.04512	0.04512	0.04512	0.04512	0.04512	0.04512	1.00000	0.05116	0.89898	0.37373
P10	0.21779	0.11275	0.16639	0.14811	0.19545	0.37373	0.37373	0.37373	0.37373	1.00000	0.05116	0.89898
P11	0.43507	0.63984	0.37373	0.37373	0.37373	0.37373	0.37373	0.37373	0.37373	0.37373	1.00000	0.05116
P12	0.26319	0.07370	0.43507	0.63984	0.37373	0.37373	0.37373	0.37373	0.37373	0.37373	0.37373	1.00000

**CORRELATIONS**

	P13	P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24
P1	0.36756	0.18199	0.30854	-0.12531	0.20798	-0.08228	0.04299	0.39158	0.38313	-0.03189	0.33035	0.10999
P2	0.25008	0.16776	0.22097	0.15157	0.21076	0.13062	0.18766	0.30679	0.34574	0.28209	0.37949	0.31041
P3	0.37461	0.42217	0.30850	0.39351	0.32075	0.26609	0.58676	0.49439	0.31074	0.44986	0.48225	0.53938
P4	0.40820	0.25952	0.31173	0.10956	0.28516	0.02459	0.28529	0.67860	0.28063	0.06874	0.31393	0.27441
P5	0.31602	0.34916	0.32359	0.14506	0.15562	0.01510	0.36270	0.52692	0.38550	0.21614	0.36537	0.36919
P6	0.45935	0.54794	0.53605	0.23640	-0.13260	0.07905	0.49058	0.47147	0.40147	0.22815	0.35955	0.17695
P7	0.38278	0.47076	0.57217	0.21024	-0.01613	0.06664	0.50921	0.31100	0.35116	0.23803	0.21944	0.18312
P8	0.03973	0.25938	0.08635	0.32323	0.20132	0.27941	0.11599	-0.04053	-0.09153	0.47292	0.14016	0.23669
P9	0.02468	0.31267	0.04724	0.32092	0.34428	0.25299	0.02806	-0.10887	-0.08213	0.37826	0.08561	0.30629
P10	0.27465	0.41397	0.28853	0.41538	0.07830	0.16647	0.31783	0.14909	0.21095	0.31952	0.18845	0.35354
P11	0.22692	0.46983	0.13739	0.35338	0.10624	0.33654	0.46442	0.08411	0.10543	0.44485	0.23648	0.28689
P12	0.59026	0.36183	0.31341	0.11899	0.24333	-0.04972	0.25325	0.37183	0.29000	0.25604	0.28588	0.29538
P13	1.00000	0.63069	0.32852	0.14569	0.20889	0.07440	0.22740	0.42217	0.47922	0.02225	0.33236	0.35806
P14	0.63069	1.00000	0.19758	0.39528	0.13852	0.15971	0.10650	0.32613	0.19083	0.13930	0.20664	0.49618
P15	0.32852	0.19758	1.00000	0.22400	-0.06174	-0.10650	0.37036	0.06585	0.28881	0.04241	0.15375	0.48827
P16	0.14569	0.39528	0.22400	1.00000	0.28213	0.45206	0.40949	0.17998	-0.10693	0.31258	0.24855	0.06328
P17	0.20889	0.15852	-0.06174	0.28213	1.00000	0.37036	0.06585	0.28881	0.04241	0.15375	0.16766	0.48827
P18	0.07440	0.15971	-0.10650	0.45206	0.37036	1.00000	0.30657	0.08935	-0.01905	0.58894	0.27003	0.15238
P19	0.22740	0.47719	0.32613	0.40949	0.06585	0.30657	1.00000	0.56132	0.22840	0.39766	0.37937	0.44511
P20	0.42217	0.23322	0.41912	0.17998	0.28881	0.08935	0.56132	1.00000	0.55313	0.13360	0.63279	0.37504
P21	0.47922	0.19083	0.34514	-0.10693	0.04241	-0.01905	0.22840	0.55313	1.00000	0.10623	0.58733	0.22408
P22	0.02225	0.13930	0.31258	0.47364	0.15375	0.35894	0.39766	0.13360	0.10623	1.00000	0.46001	0.40044
P23	0.33236	0.20664	0.24855	0.16766	0.15375	0.35894	0.39766	0.13360	0.10623	0.46001	1.00000	0.36224
P24	0.35806	0.49618	0.06328	0.48827	0.25929	0.15238	0.44511	0.37504	0.22408	0.40044	0.36224	1.00000

**INITIAL FACTOR METHOD: PRINCIPAL FACTORS**

**PRIOR COMMUNALITY ESTIMATES: 68C**

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
	0.712736	0.739225	0.723549	0.683406	0.692324	0.666157	0.860199	0.736229	0.638079	0.788582	0.696078	0.829053
	P13	P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24
	0.742680	0.860373	0.749597	0.674894	0.638186	0.585068	0.804549	0.673177	0.683330	0.746524	0.794222	0.708325

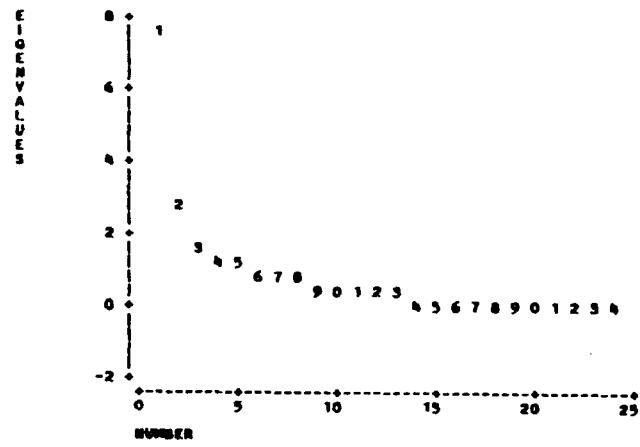
**EIGENVALUES OF THE REDUCED CORRELATION MATRIX: TOTAL = 18.2345 AVERAGE = 0.759773**

	1	2	3	4	5	6	7	8	9	10	11	12
EIGENVALUE	7.448618	2.778134	1.676024	1.327837	1.274863	0.983609	0.804566	0.652655	0.559695	0.482474	0.334796	0.278612
DIFFERENCE	4.670484	1.102110	0.348187	0.052974	0.291258	0.179043	0.151911	0.092959	0.077221	0.147678	0.056184	0.037642
PROPORTION	0.4085	0.1524	0.0919	0.0728	0.0699	0.0539	0.0441	0.0358	0.0307	0.0265	0.0184	0.0153
CUMULATIVE	0.4085	0.5608	0.6528	0.7256	0.7955	0.8494	0.8956	0.9294	0.9600	0.9865	1.0049	1.0201
	13	14	15	16	17	18	19	20	21	22	23	24
EIGENVALUE	0.240971	0.127275	0.068712	0.024739	-0.020354	-0.039786	-0.075855	-0.120745	-0.122002	-0.133890	-0.151996	-0.164409
DIFFERENCE	0.113695	0.058564	0.043972	0.045094	0.019432	0.036069	0.044890	0.001257	0.011888	0.018106	0.012414	0.012414
PROPORTION	0.0132	0.0070	0.0038	0.0014	-0.0011	-0.0022	-0.0042	-0.0066	-0.0067	-0.0073	-0.0083	-0.0090
CUMULATIVE	1.0334	1.0403	1.0441	1.0455	1.0443	1.0422	1.0380	1.0314	1.0247	1.0174	1.0090	1.0000

6 FACTORS WILL BE RETAINED BY THE RFACOR CRITERION

INITIAL FACTOR METHOD: PRINCIPAL FACTORS

SCREE PLOT OF EIGENVALUES



INITIAL FACTOR METHOD: PRINCIPAL FACTORS

FACTOR PATTERN

	FACTOR1	FACTOR2	FACTOR3	FACTOR4	FACTOR5	FACTOR6
P3	0.70547	0.08505	0.11141	-0.05207	-0.04466	0.06612
P6	0.69837	-0.17108	-0.47217	-0.13121	-0.06505	-0.01156
P7	0.67587	-0.03832	-0.51103	0.11262	-0.20866	0.05414
P20	0.66572	-0.49365	0.27518	-0.19790	-0.05054	0.02946
P19	0.65933	0.06473	-0.04936	-0.42932	-0.26641	-0.09855
P14	0.65211	0.15814	-0.25236	-0.09292	0.24078	-0.40791
P23	0.63135	-0.20191	0.41237	-0.03886	-0.22058	0.12632
P12	0.62686	-0.02495	-0.08615	0.08566	0.52456	0.34350
P13	0.59884	-0.29187	0.12709	-0.07460	0.07026	0.24474
PA	0.58982	-0.41353	0.12709	-0.09200	0.38716	-0.36531
P24	0.58973	0.18705	0.26599	-0.09660	0.06161	0.17476
P10	0.57324	0.31581	-0.29911	0.23966	0.01911	-0.26547
P5	0.55318	-0.26020	0.18926	-0.32077	0.14041	-0.11408
P11	0.55121	0.45656	-0.15736	-0.04905	0.05999	0.10139
P15	0.51883	-0.25113	-0.33556	0.02211	-0.19229	0.25060
P22	0.51089	0.43642	0.16240	-0.03911	-0.31171	0.31485
P21	0.49749	-0.40211	0.04072	0.09571	-0.13306	-0.00944
P9	0.33084	0.61610	0.03195	0.27938	0.34317	0.08936
P8	0.40753	0.50071	-0.03920	0.22361	-0.02951	0.25545
P16	0.46975	0.49136	0.31558	-0.09601	-0.11159	-0.17872
P18	0.28018	0.42718	0.10584	-0.19532	-0.18291	-0.12636
P17	0.31234	0.15141	0.56541	0.17798	0.23299	-0.06209
P1	0.38972	-0.45311	0.10304	0.58249	-0.02850	-0.07485
P2	0.45253	-0.11787	0.18275	0.55787	-0.40102	-0.14594

VARIANCE EXPLAINED BY EACH FACTOR

FACTOR1	FACTOR2	FACTOR3	FACTOR4	FACTOR5	FACTOR6
7.448618	2.778134	1.674024	1.327837	1.274863	0.983609

FINAL COMMUNALITY ESTIMATES: TOTAL = 15.489085

P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
0.695800	0.745411	0.443601	0.723949	0.554043	0.761514	0.778575	0.534452	0.693861	0.588618	0.553351	0.801494
P13	P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24
0.641694	0.812682	0.545122	0.554904	0.929982	0.419182	0.706343	0.805370	0.508751	0.675669	0.675538	0.537120

ROTATION METHOD: VARIMAX

ORTHOGONAL TRANSFORMATION MATRIX

	1	2	3	4	5	6
1	0.56888	0.42690	0.40864	0.35677	0.29956	0.33183
2	-0.50370	0.33509	-0.13964	0.59101	-0.30153	-0.01614
3	0.35158	0.38370	-0.76744	-0.10938	0.24841	-0.25792
4	-0.31242	-0.34371	-0.11507	0.41241	0.77484	-0.02341
5	0.31970	-0.47404	-0.41350	0.43218	-0.35979	0.43112
6	0.31502	-0.20356	0.20080	0.39318	-0.16675	-0.79793

ROTATED FACTOR PATTERN

	FACTOR1	FACTOR2	FACTOR3	FACTOR4	FACTOR5	FACTOR6
P4	0.79609	-0.10817	0.08683	0.15022	0.09323	0.19924
P20	0.77916	0.21152	0.17940	-0.17633	0.27662	0.11724
P5	0.70402	0.18313	0.12572	0.00945	-0.03256	0.08889
F23	0.58726	0.41194	0.09077	-0.00088	0.38064	-0.08858
P3	0.46599	0.44920	0.26134	0.30353	0.20203	0.15974
P21	0.46450	0.00251	0.28181	-0.13399	0.42841	0.10994
P16	0.02343	0.66002	0.07445	0.24702	-0.06284	0.21938
P18	-0.01309	0.61466	-0.12604	0.14956	0.04601	0.02889
P22	0.13966	0.61111	0.21981	0.39539	0.09113	-0.26410
P19	0.34304	0.59106	0.43805	-0.05205	-0.05464	0.20430
P24	0.30103	0.51189	-0.05692	0.17427	0.13359	0.36471
P7	0.13928	0.12114	0.75792	0.25194	0.24058	0.22091
P6	0.33401	0.10372	0.71131	0.11292	0.06716	0.34054
P15	0.31424	-0.00905	0.63190	0.09793	0.19231	-0.02061
P17	0.29953	0.27230	-0.45672	0.28875	0.25280	0.10119
P9	-0.06031	0.20628	-0.13146	0.77733	-0.00062	0.16170
P8	-0.03297	0.31204	0.16447	0.62551	0.10265	-0.08453
P12	0.58804	-0.12676	0.16798	0.61541	-0.00573	0.18069
P11	0.09473	0.38703	0.28346	0.52927	-0.08813	0.16223
P10	-0.04283	0.23070	0.36132	0.48612	0.20004	0.35592
P2	0.03260	0.22827	0.13345	0.07118	0.81738	0.03543
P1	0.26141	-0.19732	0.07038	0.07028	0.74702	0.14354
P14	0.16498	0.27249	0.25403	0.21580	0.01373	0.77455
P13	0.39983	0.00284	0.15804	0.03864	0.27467	0.61637

VARIANCE EXPLAINED BY EACH FACTOR

FACTOR1	FACTOR2	FACTOR3	FACTOR4	FACTOR5	FACTOR6
3.680115	2.883698	2.560355	2.594576	2.014018	1.796324

FINAL COMMUNALITY ESTIMATES: TOTAL = 15.489085

P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
0.695800	0.745411	0.645681	0.723949	0.554043	0.761514	0.778575	0.534452	0.693861	0.588618	0.553331	0.801494
P13	P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24
0.641694	0.812682	0.545122	0.534904	0.529982	0.419182	0.766343	0.805370	0.508751	0.675669	0.675538	0.537120

ROTATION METHOD: VARIMAX

SCORING COEFFICIENTS ESTIMATED BY REGRESSION  
 SQUARED MULTIPLE CORRELATIONS OF THE VARIABLES WITH EACH FACTOR

FACTOR1	FACTOR2	FACTOR3	FACTOR4	FACTOR5	FACTOR6
0.924899	0.888939	0.908256	0.904937	0.857124	0.866764

STANDARDIZED SCORING COEFFICIENTS

	FACTOR1	FACTOR2	FACTOR3	FACTOR4	FACTOR5	FACTOR6
P4	0.82477	-0.14155	-0.34021	0.19670	-0.09575	0.13560
P20	0.26206	0.08056	-0.00871	-0.23465	0.13147	0.00587
P5	0.17003	-0.00037	0.07527	-0.03368	-0.09320	-0.11444
P23	0.21421	0.16160	-0.15457	-0.00621	0.11982	-0.15088
P3	0.09641	0.11971	-0.07672	0.02236	-0.00378	0.03125
P21	0.07650	-0.01737	-0.02743	-0.05917	0.09162	0.04656
P16	-0.04063	0.22414	-0.02968	0.02800	-0.04300	0.00552
P18	-0.04113	0.16114	-0.04992	-0.03428	0.01673	0.02053
P22	0.00838	0.21209	0.09938	0.05702	0.03683	-0.23234
P19	0.01041	0.29688	0.12273	-0.13523	-0.20363	-0.03998
P24	-0.01277	0.10913	0.00301	-0.06162	-0.00517	0.08449
P7	-0.03176	-0.08504	0.36573	0.14562	0.18937	-0.06866
P6	-0.07792	-0.07844	0.36114	-0.09069	-0.12565	-0.09561
P15	0.05560	-0.07349	0.18413	-0.00015	-0.02685	-0.06508
P17	0.01379	0.06510	-0.14368	0.02510	0.05616	0.01349
P9	0.02862	-0.04215	-0.22268	0.49360	0.05981	-0.02995
P8	-0.05343	0.07702	-0.00069	0.18982	-0.01130	-0.12262
P12	0.17120	-0.29453	0.12664	0.30643	-0.14451	-0.09800
P11	-0.01268	0.04799	0.09629	0.12431	-0.06519	-0.05744
P10	-0.14555	0.02836	0.03108	0.05159	0.05916	0.25434
P2	-0.13022	0.05097	0.00126	0.02914	0.45929	-0.04931
P1	-0.06544	-0.12391	0.02158	0.00583	0.38611	-0.01594
P14	-0.00459	0.07076	-0.22783	-0.07981	-0.07297	0.78651
P13	-0.01067	-0.04159	0.00706	-0.03491	0.10559	0.17959

## APPENDIX 17

LIST OF ACADEMICIANS PARTICIPATING IN THE  
VALIDITY OF THE QUESTIONNAIRE

1. Dr. Robert Ackelsberg of Shippensburg University of Pennsylvania, Shippensburg, Pennsylvania.
2. Dr. Ingolf Bamberger of Faculty of Economics and Business Administration, Rijksuniversiteit Limburg, the Netherlands.
3. Dr. James W. Carland of Western Carolina University, Cullowhee, North Carolina.
4. Dr. J. David Hunger of Iowa State University, Ames, Iowa.
5. Dr. William M. Lindsay of Northern Kentucky University, Highland Heights, Kentucky.
6. Dr. Danny Miller of McGill University, Montreal, Canada.
7. Dr. Michael E. Porter of Harvard University.
8. Dr. Dan Schendel of Purdue University.
9. Dr. A. J. Strickland III of the University of Alabama, Tuscaloosa, Alabama.
10. Dr. Arthur A. Thompson, Jr. of the University of Alabama, Tuscaloosa, Alabama.
11. Dr. Larry R. Watts of Stephen F. Austin State University, Nacogdoches, Texas.

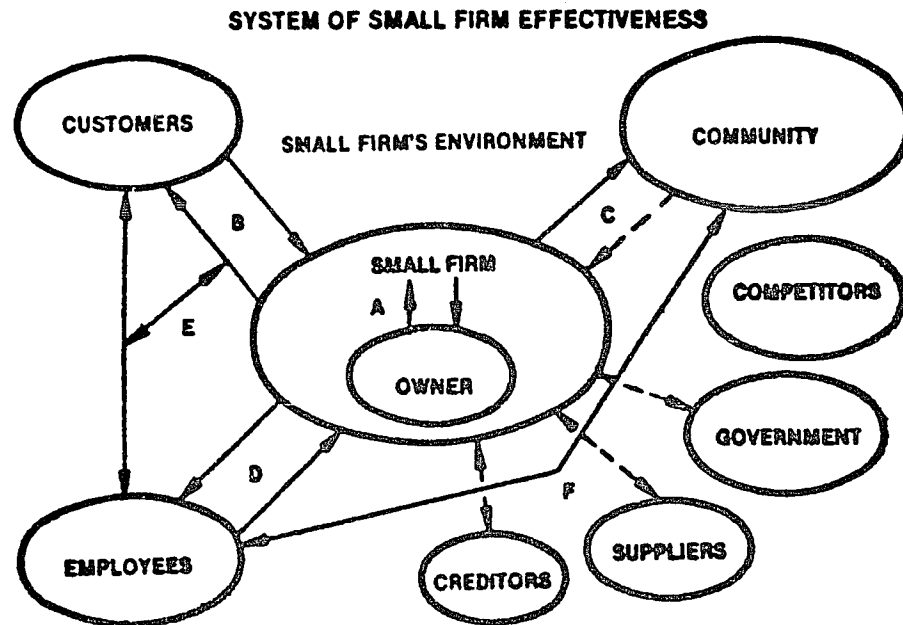
FIGURE 1

RELATIONSHIPS BETWEEN EMPLOYMENT AND PRODUCTIVITY IN FOUR TYPES OF FIRM

OUTPUT	HIGH OUTPUT  LOW EMPLOYMENT  <u>HIGH PRODUCTIVITY</u>	HIGH OUTPUT  HIGH EMPLOYMENT  <u>AVERAGE PRODUCTIVITY</u>
	LOW OUTPUT  LOW EMPLOYMENT  <u>AVERAGE PRODUCTIVITY</u>	LOW OUTPUT  HIGH EMPLOYMENT  <u>LOW PRODUCTIVITY</u>
		EMPLOYMENT

Source: E. Miller (1982)

FIGURE 2



**PRIMARY EFFECTIVENESS INTERDEPENDENCIES**

- A**—*profitability and growth* meet needs of owner/manager.
- B**—firm satisfying product/service to customer, as evidenced by *profitability and growth* in sales from increased demand.
- C**—apparently, small firm managers are more supportive and participative in community affairs when the firm is *profitable and experiencing growth*.
- D**—*profitability* apparently leads to increased confidence in management, satisfaction with immediate-supervisor, and perceived opportunity for self-development.
- E and F**—small firms that recognize community needs (C) and fulfill them are likely to provide and encourage the same for employees; more *profitable and growing* (B) firms apparently present a means for mutually reinforcing customer/employee contact and fulfillment.

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### Autobiographical Statement

Adith Cheosakul was born in Bangkok, Thailand on November 17, 1957. He received his secondary education at Phillips Academy in Andover, Massachusetts, graduating with Cum Laude in 1976. He graduated with a Bachelor of Science in 1980 and a Master of Engineering in 1981, both from the School of Operations Research and Industrial Engineering, Cornell University. He immediately enrolled at New York University to study finance and international business. While registering at New York University, he spent one semester as an exchange student in the International Management Program at Ecole des Hautes Etudes Commerciales (HEC) in Jouy-en-Josas, France. He received his Master of Business Administration in 1983. In 1984, he entered the doctoral program in management planning systems at the City University of New York. While pursuing his doctorate, he served as an adjunct lecturer in the Department of Management as well as the Department of Marketing at Baruch College and as an assistant professor in Management Science Department at Pace University. He is a member of Beta Gamma Sigma, Sigma Iota Epsilon Honor Society, and Alpha Iota Delta.