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MANAGERS, STRATEGIC CHOICE AND TIME: A STUDY OF THE INFLUENCE OF TIME ORIENTATION UPON STRATEGIC CHOICE BY MANAGERS

By

John A. Rushing

A DISSERTATION

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MANAGERS , STRATEGIC CHOICE AND TIME
A STUDY OF THE INFLUENCE OF TIME ORIENTATION UPON STRATEGIC CHOICE BY MANAGERS

by

John A. Rushing

We hereby certify that this Dissertation submitted by John A. Rushing conforms to acceptable standards, and as such is fully adequate in scope and quality. It is therefore approved as the fulfillment of the Dissertation requirements for the degree of Doctor of Business Administration

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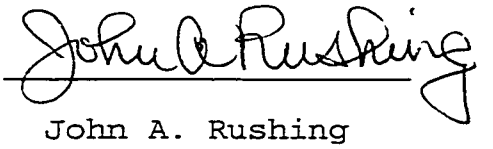
Signed 

John A. Rushing

ABSTRACT

Managers, Strategic Choice and Time: A Study of the Influence of Time Orientation upon Managerial Strategic Choice

by

John A. Rushing

The ability to reduce uncertainty by describing, explaining and predicting human behavior has been a goal of mankind for millennia. Over the past 100 years culture value theory has been developed through the efforts of social scientists across the disciplines of anthropology, sociology, psychology and comparative management as one step in the effort toward reaching that goal.

Because culture involves social behavior, it is concerned with group influences as opposed to biological inheritance or individual idiosyncratic variations. One approach to operationalizing culture value theory has been to use values as dimensions that allow us to distinguish groups from one another. More narrowly, work-related cultural values have been of interest because of the practical implications of understanding human behavior in a work or business context.

This paper describes research that extends the application of work-related culture value theory to the critical domain of strategic choice by managers. Specifically, this exploratory study of 104 business owners/ managers from the U.S., Brazil and Japan tests the relationship between the national cultural work-related value of time orientation and the choice of strategic type by managers across national cultures. Time orientation (independent variable) is measured using the Circles Test of Cottle (1967) and strategy choice (dependent variable) is measured using the Miles and Snow (1978) typology.

The goal of the study was to increase the understanding of how managers make strategic choices. Because of the economic, social and political effects of strategy choices, this knowledge is potentially valuable to stakeholders including employees, suppliers, shareholders, and governments as well as social scientists

The study results are consistent with the theoretical interpretations of causality direction. Time orientation is significantly correlated with strategic choice in the business sample. Canonical Analysis supports the proposition that time orientation significantly influences strategy choice. Although results indicate one can increase the ability to predict strategy choice by 14 percent compared to random selection by knowing time orientation, this is cross-sectional research so there are the usual problems in extrapolating from a cross-sectional model to a really predictive model. In addition, possible non-response bias, the limited size and scope of the sample and limitation of the research to one industry restricts the ability to generalize from the research. More research is needed using larger samples, in more than one industry, across a greater number of national cultures to sharpen the insights with respect to strategic choice.

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INTRODUCTION

Statement of the Problem

Understanding the nature of the influence of culture upon the strategic choices that managers make is important because managerial actions impact so many stakeholders. For example, Apple's closed-system strategy choice opened the door for IBM's success in the PC market. Chrysler's introduction of the mini-van as a strategic response to changes in demographics revolutionized the automobile industry. Such strategic choices have affected the lives of hundreds of thousands of stakeholders. Therefore, progress in understanding the process by which culture influences strategic choice has important theoretical and practical implications.

The economic approach known as "rational man" has provided some help in understanding strategy choice, but leaves significant gaps. Humans often make choices that are not readily explained by economic models. Social scientists have attempted to fill these gaps in understanding; one important step in this process has been the development of culture theory and, in particular, culture value theory. This theory suggests that national cultural work-related values can provide partial explanations of the choice of strategy by managers. The open question is: "Can culture value theory help in understanding strategic choice by managers?"

Background of the Problem

For over 100 years there has been considerable interest in and difference of opinion about the influence of culture upon human behavior (Tylor, 1896; Kluckhohn and Strodtbeck, 1961; Haire, Ghiselli and Porter, 1966; Schuler and Rogovsky, 1998; Markoczy, 2000). Debate, often heated, has persisted to the present. Organization theorists who take a "culture free" approach have been labeled "parochial dinosaurs" by supporters on the "culture bound" side (Boyacigiller, and Adler, 1991). On the other hand, the culture value followers of Geert Hofstede and other researchers have been chided by some anthropologists for producing a "stream of nonsense" (Arnould, 1996). So it has gone, back and forth.

Theodore Leavitt suggested that cultural divergence would be overcome by technology and globalization (Levitt, 1983). This was countered by Boddewyn, Soehl and Picard (1986) who pointed out that both developing research and practices discounted Levitt's arguments and reject cultural convergence. The Iranian Revolution has often been cited as an example of the re-emergence of cultural divergence. This theme is echoed in *The Disuniting of America* by Arthur M. Schlesinger, Jr., published in 1998.

In 1996 the respected marketing theorist David Gardner commented on the Internet that he believed there would be no significant difference in a master theory of marketing developed in the U.S. and in a master theory of marketing developed in Japan. He did concede that there might be differences at lower levels of theory making (Gardner, 1996).

The highly respected Rosabeth Moss Kanter concluded that although there are cultural differences they do not necessarily result in differences in managers' behavior (Kanter and Corn, 1994). This lack of predictable difference in behavior attributable to national culture was explained as resulting from similarities in education or functional experience obscuring national cultural differences. Further, variance within national cultures and idiosyncratic differences limit the utility of national culture as a predictor of behavior according to Kanter. However, the Kanter and Corn research was limited to only 75 interviews by different researchers in only a handful of companies. As a result, such research has not had the impact of the research by Hofstede, which included over 150,000 surveys in more than 60 countries or Trompenaars' more recent research comprising over 8,000 surveys in more than 40 countries. The Hofstede and Trompenaars studies support the influence of culture upon management behavior.

It should not be surprising that the competing paradigms co-exist. Thomas Kuhn pointed out in *The Structure of Scientific Revolutions* that in the social sciences theoretical paradigms may gain or lose popularity but they are seldom discarded altogether (Babbie, 1995, p. 40). Yet, in spite of the controversy an increasing body of research evidence developed over the last two decades supports the belief that work-related national cultural values do influence human behavior (Tse et. al., 1988; Husted, 1999; Steensma, Marino and Weaver, 2000). What then, given the controversy and the research trends in the recent past, are the intellectual antecedents of culture value theory?

Intellectual Antecedents

When the French philosopher Auguste Comte (1798-1857) coined the term *sociologie* in 1822 and identified society as a phenomenon that can be studied scientifically, he laid the early foundation for the present study of culture's influence upon behavior (Babbie, 1995, p. 41). Early interest in culture was vested in anthropology, e.g. Tylor (1871), and extended to sociology and psychology over time (Keesing, 1974). This process owed much to the work of Freud and his theory of mental symbols (Piker, 1998).

Piker pointed out that Freud identified psycho-symbolic processes where unconscious materials are recast and enabled to enter consciousness and vitally influence it and that his ontogenetic model emphasized the lifelong importance of the experiences of infancy and early childhood (Piker, 1998). Hence, several anthropologists of the 1920's and 1930's including Malinowski, Mead and Benedict "engaged these insights" and thus laid the groundwork for the study of culture and personality.

Tylor (1871) defined culture as "the complete whole which includes knowledge, belief, art, morals, laws, customs and any other capabilities or habit acquired by man as a member of society" (p. 3). This early definition provided a good start toward the study of culture, but it remained for Ruth Benedict with the publication of Patterns of Culture in 1934 to describe a systematic study of culture. Her traditional ethnological approach contrasts with the universalist's

approach ascribed to Max Weber (1946). Both contributed to the understanding of culture.

Kluckhohn and Strodtbeck extended Benedict's work and influenced recent theorists including Geert Hofstede (1984) and Thomas J. Cottle (1976). Thus, our modern scientific interest in the influence of culture values upon human behavior can be traced back at least to 1822.

Management and Organization Scholars

Following the early interest in culture by anthropologists, sociologists and psychologists, there also developed an interest by organizational theorists and comparative management scholars (Nath, 1986). Because these theorists and scholars' interests include the practical application of culture theory, the literature flowing from the recent work in these disciplines is of particular interest. (Oberg, 1972; Tung, 1984; Mattson et. al., 1993 and Kantor et. al., 1995). It is hardly surprising that among those who had an interest in the practical ramifications of culture theory were management theorists who also had central interests in strategic planning and strategy choice. (Mintzberg, 1994; Sallivan and Nonaka, 1988). Thus, it is now possible to utilize the insights gained from the strategic planning and culture value theory literature to better understand the way mangers make strategic choices.

Purpose of the Study

The purpose of the present study is to explore the relationship between the national cultural work-related value of time orientation and the choice of strategy type by managers, with the ultimate goal of incrementally increasing the knowledge of human behavior in the work environment.

Justification of the Study

It is important for stakeholders, particularly corporate shareholders, to understand how managers make strategic choices that have substantial impact upon the economic performance and even the survival of firms. Therefore, it is important to know whether, as theory predicts, national work-related cultural values will influence strategy choice. The study extends the work of Hofstede (1984), Cottle (1976), Trompenaars (1996) , Mintzberg (1994), and Miles and Snow (1978).

Base Theory

The national cultural work-related values research of Hofstede (1980 and 1997) and Trompenaars (1996) suggest that time orientation is a national cultural work-related value which influences management behavior. Their work is largely based upon the culture value theory of Kluckhohn and Strodtbeck (1961) and the work of Talcott Parsons (1951). The Design School Model of Strategic Planning

suggests that manager's values will influence strategic choice (Mintzberg, 1994, p. 37). The strategy typology of Miles and Snow (1978) posits that firms may be characterized by four strategic choice types. Taken together, these theories support the belief that the national cultural work-related values of managers influence strategic choice. Specifically, the time orientation dimension of national cultural work-related values may influence the choice of one of the four strategy types described by Miles and Snow (1978).

Research Question

This study explores the relationship between the independent variable, time orientation and the dependent variable, strategy choice. The question can be stated as follows: "Does the national cultural work-related value of time orientation influence managers choice of strategic type?"

Summary

In order to reduce uncertainty, mankind has attempted to describe, explain and predict the behavior of human beings. This is important in the work context because the behavior of humans, and in particular managers, has a profound effect upon the well-being of so many other humans. Social scientists have aided the quest by developing theories, including culture value theories, to assist in understanding human behavior. The present study extends national cultural

work-related values research by examining the relationship between time orientation, a national cultural work-related value, and the choice of strategy by managers.

CHAPTER II

LITERATURE REVIEW

This literature review is divided into four parts. The first part examines culture theory; the second part examines strategy choice. The third part explores the intersection of culture theory and strategy in recent articles. The fourth part examines the research implications for the confluence of these literature streams.

A. Culture

Defining Culture

Historically, there has not been a clear and unique definition of culture. Kroeber and Kluckhohn (1952) identified more than 160 definitions of culture. Since then other definitions have been formulated (Erez and Earley, 1993). As Lenartowitz (1996) pointed out, authors from various fields of study and different periods of time have developed numerous definitions of culture (Tylor, 1896; Kluckhohn, 1951; Hofstede, 1980; Adler, 1991; and Haviland, 1990). Scholars have realized that earlier definitions of culture have "included too much" and have been "too diffuse either to separate analytically the twisted threads of human experience or to interpret the designs into which they are woven" (Keesing, 1974, p.1). Simply stated, earlier definitions did not lend themselves to operationalization.

Operational Definitions

The difficulty for social scientists from a methodological point of view has been finding a definition which is conceptually well grounded and which may be operationalized so that empirical work may be conducted. The very complex issues surrounding the conceptualization of "nation," "culture," and "values" makes difficult the study of management behavior with respect to national cultural work related values (Kluckhohn and Strodtbeck, 1961; Haire, Ghiselli and Porter, 1966; Hofstede, 1980; Prenshaw, 1993).

For more than 20 years researchers have struggled with the task of operationalizing a definition of culture (Hofstede, 1980, 1984, 1998; Wilson, Hoppe and Sayles, 1996; Trompenaars and Hampton-Turner, 1998). The dimensions constructed by Hofstede have become widely accepted and used in culture research. Nor should one ignore the respected work of Hall, which has been used by several researchers. Trompenaars' work is emerging as an alternative and possibly equivalent model (Hodgetts, 1997). The work of Hofstede has been replicated and extended, as has the work of Hall (Sondergaard, 1994; Usunier, 1991). The work of Trompenaars and Charles Hampden-Turner has been incorporated into the work of other respected scholars (Wilson, Hoppe, and Sayles, 1996). Thus, the definitions by Hofstede, Hall and Trompenaars have considerable appeal.

Hofstede has defined culture as "The collective programming of the mind which distinguishes the members of one group or category of people from

another" (Hofstede, 1997a, p. 5). This definition conveniently subsumes sub-cultures since "category of people" may include gender cultures, age group cultures, occupational cultures, organizational cultures or more generally national cultures. It is similar to the brief description of culture given by Hall "culture is a program for behavior." (Hall and Hall, 1990, p. xiv). Both were foreshadowed by Geertz who stated "culture is best seen..as..what computer engineers call 'programs' ..for the governing of behavior," (Keesing, 1974, p. 87).

Trompenaars described culture as "The way in which a group of people solves problems and resolves dilemmas." (Trompenaars and Hampton-Turner, 1998, p. 6). Fortunately for social researchers, both Trompenaars' and Hofstede's approaches have led to definable and measurable dimensions. These are culture value dimensions. Hofstede, Hall and Trompenaars owe a conceptual debt to Kluckhohn and Strodtbeck who clearly articulated a value theory approach based upon culture in terms of group solutions to universal problems.

Culture Value Theory

Kluckhohn and Strodtbeck (1961) explain a theory of variations in value orientations and a cross-cultural method for testing that theory. Starting with a given that knowledge of the basic assumptions of a person is indispensable to the interpretation of concrete behavior, these researchers developed a model. The model supposes there is systematic variation in the realm of cultural phenomena, which is both as definite and as essential as the demonstrated

systematic variation in physical and biological phenomena. Further, it is assumed that there are a limited number of common human problems for which all peoples at all times must find some solution; and that while there is variability in solutions of all the problems, it is neither limitless nor random, but is definitely variable, and that all alternatives of all solutions are present in all societies at all times but are differentially preferred (Kluckhohn and Strodtbeck, 1961, pp. 1-10). This echoes the beliefs of earlier anthropologists Margaret Mead and Ruth Benedict (Hofstede, 1997a, p. 13).

Kluckhohn (1951) suggests that a consensus of anthropological definitions would be "Culture consists in patterned ways of thinking, feeling and reacting, acquired and transmitted mainly by symbols, constituting the distinctive achievement of human groups, including their embodiments in artifacts; the essential core of culture consists of traditional (i.e. historically derived and selected) ideas *and especially their attached values*" (emphasis added). Rokeach (1972) indicates that an individual may be stated to have a value when that individual "has an enduring belief that a specific mode of conduct or end state of existence is personally and socially preferable to alternative modes of conduct or end states of existence." Rokeach felt that values were a more suitable factor upon which to focus, rather than attitudes, because values are fewer in number than attitudes, represent a broader preference and are more enduring (Rokeach, 1973).

Kluckhohn and Strodtbeck (1961) expand these notions,

> "Value orientations are complex but definitely patterned (rank-ordered) principles, resulting from the transactional interplay of three analytically distinguishable elements of the evaluative process -the cognitive, the affective, the directive elements- which give order and direction to the ever-flowing stream of human acts and thoughts as these relate to the solution of 'common human' problems (pages 4-48)."

Thus, by describing the preferences along these value orientations, one may describe the culture of a society. It follows, therefore, that we may distinguish one culture from another through the study of values. That is, if individuals of Group A share similar value orientations which are separate and distinct from the value orientations held by another group, then it may be assumed that the members of Group A share a culture. The group may be a tribe, an organization or a nation. This is the approach that Hofstede and his followers have taken. This notion is similar to the one used by Trompenaars, which was derived from the work of Parsons and Shils (1951) that in turn apparently was influenced by Clyde Kluckhohn.

As discussed, it appears that researchers have found it necessary and useful to constrain their definitions of culture. In the applied social science of management, Hofstede's and Trompenaars' constructs of "national cultural work-related values" are frequently substituted for "culture" when "cross-cultural" research is conducted. As long as this is done consciously and as long as inferences are appropriately limited, this appears to be a useful practice (Calori et al., 1994; Clark, 1990; Dorfman and Howell, 1988; Geletkanycz, 1997; Gibson,

1995). That is, one would not base predictions about leisure activity behavior upon Hofstede's or Trompenaars' work related value dimensions. Nor would one base analysis at the level of the firm upon dimensions developed at the national level.

Confounding Factors

It may be difficult to distinguish between culture effects and nation effects, i.e., political, economic and educational confounding variables (Hayashi, 1998). Negandhi has suggested that management practices and behaviors are more the result of contextual variables than cultural variables (Negandhi, 1975). In contrast to Negandhi, the Farmer-Richman model supports culture as a primary independent variable.

Efforts have been made to sort out this problem. A test of the Farmer-Richman model versus the Negandhi-Prasad model supported the role of culture as an independent variable in understanding management behavior (Kelley and Worthley, 1981). The research design controlled for political, economic, and educational influences.

Another factor adding to the complexity of understanding culture is the fact that culture may not be homogeneous throughout a population. That is, since "group" is fundamental to the definition of culture, the level of analysis whether national, regional or tribal will influence the "culture" observed (Hofstede, 1995; Schein, 1985; Triandis, 1995). Also, there are many ways one may partition a

society into sub-cultures. Geography may be important (Haviland, 1990). Region has been found to be important in studies of North America (Garreau, 1981). Therefore, it is an error to assume that national populations are homogeneous (Adler, 1984) and some critics have objected to the use of the nation as either the level of analysis or as an attribute of culture or of character. Unfortunately, there are good reasons for reservations with respect to the construct of national culture.

The current concept of national culture carries with it the baggage of national character research done around the time of World War II. From about 1935 through 1945 there was much interest in national character (Inkeles and Levinson, 1969). Subsequently interest waned. Hsu (1983) attributes this to changes in intellectual fashion more than to flaws in conceptualization. Peabody (1985) identified four causes for objections to the concept of national culture (character). These are:

(1) Generalizations about people and nations are not possible.
(2) Even if these were possible, they would be obscured by variations within national groups,
(3) Judgements and assessments of nations are irrational and Inaccurate, and are usually based on indirect experience,
(4) The assessment of national character is based on racism, ethnocentrism, and discrimination.

The survival of these negative attitudes toward national culture or national character studies all the way to the present was reinforced in 1996 in dialogues with a noted anthropologist (Arnould, 1996). Although Terry Clark concedes that at one time or another each of the stated objections may have made sense, he points out that the old objections may be avoided or overcome with the

application of the scientific method and with a unifying conceptual framework (Clark, 1990). The point is simply that recent studies have had to overcome the "bad press" and "guilt by association" of some previous flawed, race based, or other less-than-ideal endeavors as well as the legitimate concerns of theorists.

In spite of some legitimate criticisms, the national level is logical for several reasons. First, it is the nation for which most secondary data are available, and which is most easily delimited and most easily defined. This is a practical consideration in research because "culture has been notoriously difficult to define and delimit, and this difficulty has hindered empirical research. In a practical sense, delimiting a cultural group is often impossible. This is not the case when the unit of analysis is the nation. The nation is a political entity and can be defined and identified precisely in space and time" (Clark, 1990, p. 69). Every human on the planet is supposed to belong to one nation or another. The nation is the most expedient and often the only feasible criterion. Survey data are often collected through national networks. Nations as political entities often keep considerable data on their citizens with at least one goal being international cooperation in mutual problem solving (Hofstede, 1997, p. 12). This does not negate the desirability of separating results by region, religion, language, or tribe where this is possible. For example, in examining many African states it is clear that tribal culture was ignored by the colonial powers in setting national boundaries. Therefore, caution must still be exercised in the use of the nation as the level of analysis, notwithstanding the practical benefits of such a practice.

Universal Values and Culture Models

Difficulties and differences of opinion have not discouraged the search for universal values or a universal definition of culture (Smith, Dugan and Trompenaars, 1996; Schwartz and Sagev, 1995). Since values may be used to identify different cultures, many of the culture models are in fact cultural value models. While there are definite overlaps among the various models of culture, the models also vary as to dimensions identified. For example, Hofstede (1997a), Hall and Hall (1990), Smith, Dugan and Trompenaars (1996), as well as Kluckhohn and Strodtbeck (1961) identify the time dimension. However, Schwartz and Bilsky (1987) do not identify time as a dimension of values. On the other hand, Schwartz and Bilsky (1987) identify individualism/ collectivism as a dimension, as do Hofstede (1997a), Trompenaars (1996), but not Hall and Hall (1990) or Kluckhohn and Strodtbeck (1961). However, the relational dimension in Kluckhohn and Strodtbeck may be argued to be a proxy for individualism versus collectivism and doing/acquiring for masculinity/femininity (Schuler and Rogovsky, 1998). Other recent attempts to develop culture value theories repeat this pattern. House, Hanges, Agar and Quintanilla (1995) include time orientation (present-future) and individualism-collectivism as well as masculinity-femininity, power, and uncertainty. For an interesting comparison of culture value models see Wilson, Hoppe and Sayles (1996. Pp. 36-37).

Common Dimensions

Although there is not a model that is universally accepted, there are dimensions that are widely accepted, i.e., individualism/collectivism and time orientation. Also, research has linked time orientation and uncertainty avoidance as having similar directional influences upon certain behaviors despite being clearly distinguishable dimensions (Barkema and Vermeulen, 1997; Geletkanycz, 1997).

Despite rather broad agreement upon two dimensions, the way the dimensions are conceptualized and operationalized may be quite different, e.g. time orientation vis-a-vis Hall, Cottle, Trompenaars, and Hofstede. In fact, there has been a bit of contention between Hofstede and Trompenaars (Hofstede, 1996, Hofstede, 1997b; Hampden-Turner and Trompenaars, 1997).

At any rate, the time orientation dimension has been variously defined, explored and measured in different ways (Carmon, 1991; Cottle, 1976; Gentry, 1993; Kaufman and Holak, 1993; Ko and Gentry, 1991). For example, Robert Doktor (1990) studied the time-use behavior of executives and found significant differences across national cultures in the duration of time spent on tasks. Interestingly, no differences were found with regard to the proportion of time spent with others versus time spent alone. However, much research remains to be undertaken. For example, Arvind Parkhe (1991) suggested a framework for the study of the performance and duration of global strategic alliances that included time orientation as a cultural diversity factor.

Smith, Dugan and Trompenaars (1996) addressed this problem of multiple operationalizations by means of a large scale study (8,841 managers in 43 countries) which compared the value dimensions of the three leading culture theorists of the 1990's, i.e., Hofstede, Schwartz, and Trompenaars. They concluded, "Results provide substantial encouragement for the view that there is considerable replicability in the results emerging from value surveys sampling relatively large numbers of nations." (p. 259).

The multiple operationalizations may in fact be helpful because they enable triangulation in research methodology to assure validity. Hofstede suggested that one should use more than one approach to operationalizaton and then one should look for convergence between the approaches (Hofstede, 1984, p.17). This is "triangulation" as suggested in Paul (1996).

Time Orientation Dimension

Although the individualism/collectivism dimension has been studied extensively e.g. (Morris, Davis and Allen, 1994; Triandis, 1995; Triandis, Chen and Chan, 1998) the time orientation dimension has only more recently received the attention that theory suggests it deserves (Hofstede and Bond, 1988, Trompenaars and Hampton-Turner, 1998). Further, the lack of time orientation data has been a problem, i.e.; Hofstede's data only covers 23 countries. An additional measure has been suggested by Read (1994), who suggests marginal

propensity to save as a surrogate for time orientation. Hofstede feels that this additional measure is a useful contribution (Hofstede, 1998a).

The dimension as described by Hofstede deals with two poles, long-term orientation and short-term orientation. The former characterized by persistence (perseverance), thrift, ordered relationships by status and the latter by steadiness and stability, respect for tradition and protection of "face". Unlike the four other value orientations identified by Hofstede, time orientation was developed in a separate study and was originally named Confucian dynamism (Chinese Culture Connection, 1987). The dimension appears less tightly defined than the other four original dimensions. Hofstede accounts for this by reason of his own "culture blindness" in his original work (Hofstede and Bond, 1988). Nevertheless, as the theory predicts, long-term orientation is strongly correlated with national economic success as measured by growth in the GDP (Franke, Hofstede and Bond, 1991).

Despite the fact that Hofstede has discussed time orientation in his more recent works (Hofstede, 1997; Hofstede and Bond, 1988), researchers continue to ignore the time orientation dimension (Husted, 1999; Hennart and Larimo, 1998). This is understandable to an extent, since data has been limited in the past. However, as Hofstede points out, the method suggested by Read (1994) can provide a suitable proxy for time orientation.

Trompenaars' more recent research, based upon a sample of 8,841 managers across 43 countries, may remedy the limited scope of Hofstede's data on time orientation. Trompenaars describes time orientation as "shared

expectations about time" (Trompenaars and Hampton-Turner, 1998, p.123). It is based conceptually upon the value survey of Kluckhohn and Strodtbeck (1961). His measure is derived from Cottle (1967) who describes time orientation in terms of present, past and future time orientations. Other researchers including Kluckhohn and Strodtbeck and Doob have also relied upon this approach. Doob (1971) posited that traditional societies tend to favor a past time orientation, while modern societies favor a future time orientation. Therefore Eastern countries such as China, Japan and Korea tend to have past time orientations and Western countries such as the U.S. and Canada tend to have future time orientations. Latin-American countries tend to be present oriented (Benedict, 1946; Hall, 1959; Yau, 1988).

Hall (1959, 1976) divides time orientation into monochronic (m-time) and polychronic (p-time). In the Hall model m-time people are linear and sequential, that is they prefer to do one thing at a time. These people prefer promptness, schedules, and segmentation. So time has value; it may be wasted or saved. By contrast, p-time people stress relationships with people and completion of transactions, not being a slave to a schedule. Western people tend to be monochronic, while Latin American and Mediterranean people tend to be polychronic. Hall's notion of monochronic time relates to a strong future orientation; polychronic time relates to present and past orientations. (Ko and Gentry, 1991). The Hall model has been useful in research. For example, Usunier (1991) as well as Ang and Teo (1997) used the Hall model.

There is one note of caution with regard to the use of time orientation data. As Kluckhohn and Strodtbeck (1961) and Cottle and Klineberg (1974) point out, values may be understood in terms of differential preferences. Therefore, indicating that a person has a past-time orientation does not imply that they are indifferent to either the present or the future (Cottle, 1976, p. 24). This should be remembered in the process of evaluating time orientations. One should view time orientations in terms of differential preferences.

In conclusion, at least four theory-based, accepted measures of time orientation are available to the social researcher. The theoretical base of the dimension and the opportunity for empirical measure support time orientation as a reasonable candidate for status as an Independent Variable (Babbie, 1995, pp. 31-36).

B. Strategy

It is both interesting and to a degree comforting that the concept of cultural values is well identified in the strategic choice literature (Sallivan and Nonaka, 1988). It is interesting because researchers in different disciplines have been able to discern the pattern of the influence of values upon strategic choice. For example, Guth and Tagiuri (1965) remarked that..."values are important determinants in the choice of corporate strategy (p. 123)." It is comforting because the presence of the same conceptual grounding in both culture and strategy literature can provide the opportunity for comparisons, which would be more difficult in the absence of parallel constructs. This is manifested in the

Mintzberg Design School strategy model and the theoretical framework of Lachman, Nedd and Hinings (1997).

Design School Model of Mintzberg.

The Design School Model described by Mintzberg posits that both the creation of strategy and the choice of strategy are influenced by managerial values (Mintzberg, 1994, p. 37). This model appears to be supported and elaborated by the theoretical framework for analyzing cross-national management and organizations proposed by Lachman et al. (Lachman, Nedd and Hinings, 1997).

Values Model of Lachman, Nedd and Hinings.

In the Lachman model, the way in which management values influence organizational structures, processes, role structure and relations is twofold. First, values through socialization influence role perceptions and behavior, which in turn through integration influence organization structure and processes. Second, values through legitimization influence the organizational structure and processes, which in turn through integration influence role relations. Both models support researchers contentions that managers' values may be expected to influence strategic management, (Schneider and De Meyer, 1991; Barkema and Vermeulen, 1997; Geletkanycz, 1997). If values may influence strategy

choice, then it remains to operationalize strategic choice in a manner useful to the researcher. The literature suggests the use of typologies for this purpose.

Typologies

There are numerous typologies found in the strategic management literature, for example, the classic Ansoff (1965) typology, Etzioni (1961) and Miles and Snow (1978) as well as Porter (1996). Zahra and Pearce (1990) found Miles and Snow to be a popular classification scheme for business-level strategies. Song and Parry (1993) and Song and Dyer (1995) have illustrated the viability of the Miles and Snow (1978) typology (Dyer and Song, 1997). The typology was also effectively used by Snow and Hrebiniak (1980) and Franzak, McDermott and Little (1993). In 1994, Miles and Snow added insight to their earlier 1978 typology by commenting "We cannot emphasize strongly enough that strategy, structure, process, operating logic and management ideology are closely interconnected (p. 68)." This supports the linkage between management values (ideology) and strategy one finds in both Mintzberg and Lachman and associates.

The Design School Model of Mintzberg (1994), and the framework of Lachman, Nedd and Hinings (1997) are consistent with the typology of Miles and Snow (1994), whose strategic choice approach argues that the effectiveness of any organizational adaptation hinges on the dominant coalition's (leaders) perceptions of environmental conditions and the decisions it makes concerning

how the organization will cope with these conditions (Miles and Snow, 1978, pp. 20-21). This is essentially a statement of the Strength-Weakness-Opportunity-Threat (SWOT) approach with recognition that managers' values (perceptions) influence the decisions. This reaffirms the Design School Model.

The adaptive cycle described by Miles and Snow is a dynamic process by which the organization simultaneously solves three major problems (entrepreneurial, engineering and administrative). The types of adaptive cycle or process chosen identify or characterize four organization types. The four organization types, Defenders, Prospectors, Analyzers and Reactors, with their attendant strategy-structure-process forms constitute the typology. The primary strengths of such a typology are codification and prediction. This has been recognized by researchers and used advantageously by them (Barkema and Vermeulen, 1997).

The Miles and Snow (1978) typology owes much of its intellectual heritage to three other theorists: Child, Weick and Argyris. Child (1972) argued for a strategic-choice approach and against the view that organizations responded only in predictable ways to the conditions surrounding them. Weick (1969, 1977) stated a similar view, expanding the notion to include the belief in environmental enactment, i.e., that organizations could influence or alter their environments, not merely respond to them, while Argyris (1973) concluded that changes in organization design are and must be preceded by changes in managerial attitudes and behavior. These notions now look familiar to us and are embodied in modern SWOT analysis and research such as Geletkanycz (1997). This ties in

with recent research that suggests that differences in strategic orientations may have a basis in national cultural differences and that Hofstede-like research of strategic orientations may be needed (Hitt, Dacin, Tyler and Park, 1997).

Nevertheless, it has been suggested that Hofer, an early contributor to the portfolio approach to strategy, and others did not believe that the Miles and Snow typology was really a strategic typology, noting that the typology does not indicate ways to gain competitive advantage. Namiki (1989) provides at least a partial answer to this dissenting view. Namiki suggests specific strategies such as "low-cost leadership" and "service-oriented differentiation" should be considered sub-types in the Miles and Snow typology. That is a "reactor" in the Miles and Snow typology might follow any of a number of sub-type strategies. In a meta-analysis of organizational configurations and performance Ketchen, Combs, Russell and Shook (1997) found that five studies examined a single profile of configurations with independent data sets using the Miles and Snow (1978) typology compared to only three studies that relied on Porter's (1980) model.

Further, Smith, Guthrie and Chen (1989) found that the Miles and Snow (1978) typology reflected a complex set of environmental and organizational processes and attributes including dimensions such as product/market entry behavior, market attitude, technology, organizational structure, and management characteristics. They found it to be based on in-depth analyses of four different industries and that it was generalizable across industrial settings. Other strategy

typologies lacked the extensive detailed theoretical orientation of Miles and Snow and were more focused and less generalizable.

The use of the Miles and Snow typology to define a categorical dependent variable is very appealing because the types are mutually exclusive and all-inclusive (Hair, Anderson, Tatham and Black, 1995, pp. 178-255). Also, they are susceptible to direct measurement in a survey, and a useful measure of strategic choice is available to the researcher. Not insignificantly, the typology has been considered valid and reliable by other researchers and is consistent with two current theoretical models, i.e. the Design School Model and the Lachman model. Typologies provide excellent vehicles for analysis since their primary strengths are codification and prediction (Miles and Snow, 1978, p. 30).

Not incidentally, much of the discussion on strategic planning has focused on whether or not it pays. Often excuses are made for the failure of strategic planning to deliver benefits for the costs involved, and these excuses take the form of "pitfalls" (Mintzberg, 1994, Stiner and Schollhammer, 1975). One interesting aspect of this discussion from a national culture point of view is the fact that national differences do appear in ranking pitfalls, which leaves one to speculate as to the cultural causes of these differences in ranking (Steiner and Schollhammer, 1975).

Although strategy has had its ups and downs there can be no doubt that the strategy choice, however made, can and does have a profound influence upon the success and survival of firms and hence upon national and global

economies. Thus, it is of interest to understand factors which influence strategic choice by managers.

C. Culture and Strategy

It is not surprising that the culture and strategy literature streams have converged. Since culture influences human behavior and specifically national cultural values influence the behavior of managers, it is reasonable that researchers would seek, in culture theory, some aid in describing, explaining and predicting business strategy, which has been most problematical.

Culture's Influence on Strategy

Schneider (1989) draws together much of the culture literature and strategic planning literature up to that time. While the review presents an interesting framework, there was no empirical work to test the concepts presented. The work of Schneider and De Meyer (1991) remedies that. The articles have been widely cited and appear to have influenced the thinking of Barkema and Vermeulen as well as Geletkanycz et al.

With the SWOT approach to Strategic Management as a given, Schneider and De Meyer, recognizing the limitations of the traditional rationalist approach, e.g. Hitt and Tyler, undertook to explore the influence of factors below or preceding the cognitive level, i.e. national cultural factors. Noting that prior studies found national differences in strategy formulation, the researchers set out

to test the effect of culture upon strategy. For example, Kagono et al. (1984) found that Japanese did not use strategic planning in the sense of Europeans and Americans, but rather took an "evolutionary approach." Not incidentally, this is consistent with the later findings of Porter (1996).

Schneider and De Meyer recognized that certain national cultural characteristics such as uncertainty avoidance might produce expected behavioral consequences. By testing to see if, relative to other managers, Latin-European managers would interpret strategic issues as threats or opportunities, and comparing their responses to those of members of other culture clusters, it was possible to test whether or not national culture influenced perception of strategic issues. It did. Thus, the ground was laid for additional research into the possible linkage between national cultural values and strategic issues.

Dyer and Song (1997) provide a case in point. This research is significant for several reasons, not the least of which is the methodology used for measuring strategy. In any cross-cultural comparison, measurement issues may be most troublesome. Strategy is measured in terms of the Miles and Snow (1978) typology. Recognizing the importance of strategy, structure and process, each are measured for a sample of Japanese and U.S. firms. Previous studies effectively used the typology (Franzak, McDermott and Little, 1993; Song and Parry, 1993; Song and Dyer, 1995), which is easy to understand and explain and has the added virtue of face validity. In several instances the results of analysis were contrary to expectations and were attributed to cultural factors, but no

explicit measurement of cultural factors was undertaken upon which to base the suppositions.

Geletkanycz (1997) examines national culture influence upon executives' commitment to the status quo, which is an important influence upon strategic decision-making (Hambrick, Geletkanycz and Fredrickson, 1993). Earlier work had suggested a linkage between strategy and national culture (Schneider, 1989). Interest in executive behavior and its effect upon performance has grown for more than three decades (Haire, Ghiselli and Porter, 1966; Hitt, Tyler and Park, 1990; Pennings, 1993). Therefore, interest has grown in factors influencing executive behavior (Hambrick and Brandon, 1988).

Geletkanycz builds upon the premise established by Kluckhohn and Strodtbeck (1961) and Schein (1985) that cultural values play a central role in shaping managerial views of the environment and appropriate organizational responses. She also builds on the posited influence of culture upon the strategy formulation process (Hambrick and Brandon, 1988) by testing the hypothesized linkage between cultural values and executive commitment to the status quo. Of particular interest from the present study's viewpoint is the proposed model of the influence of national cultural values upon prevailing assumptions and preferences that in turn influence executive behavior. This model fits nicely with the model proposed by Lachman, Nedd and Hinnings (1997) which appears to support and clarify the value mechanism embedded in the Design School Model of strategic planning by Mintzberg.

Also of particular importance is the fact that this study, like that of Barkema and Vermeulen (1997), includes all five of Hofstede's work related national cultural value dimensions, including time orientation. Results showed that, as predicted, short term time orientation was significantly correlated with greater commitment to status quo.

Time Orientation and Strategy

Barkema and Vermeulen examined the stability of national culture over time, which had been posited by Hofstede. This appears to be the first study that empirically confirms Hofstede's position on the stability of value dimensions. Of course Rokeach believed that the values were stable over time, as did Kluckhohn and Strodtbeck.

Further, Barkema and Vermeulen examined each culture dimension separately based upon the belief that unidimensional index approaches oversimplify the rich and complex concept of culture distance. This confirms the work of Ueno and Sekaran (1992), which indicated some cultural dimensions might have contradictory effects, which are lost in unidimensional studies. In fact, in this study the dimensions of uncertainty avoidance and time orientation work together in opposition to the culture dimensions of individualism versus collectivism, power distance and, to an extent, masculinity versus femininity. This is an important finding since it casts doubt on the completeness and richness of Index type cultural studies. Finally, the emergence of time orientation as the

strongest of the culture dimensions in this study, and the authors' suggestion that more research should use the time orientation dimension, strengthens the belief that research concerning strategic choice would benefit from exploration using time orientation as an independent variable.

D. Research Implications

It is interesting that in spite of the fact that time orientation has been recognized as an important factor by several leading culture theorists and that early in the study of strategic management time orientation was recognized as an important factor, there has been limited research upon the influence of the cultural value of time orientation upon strategic management (Hofstede, 1997; Trompenaars, 1998; Hall and Hall, 1990; Ackoff, 1981). This is also despite the fact that time orientation has been well represented in the marketing management literature of the 1990's, e.g. Prenshaw, (1993) as well as Kaufman and Holak (1993).

Intersection of Culture and Strategy

The intersection of the culture literature with the strategic management literature in the work of Schneider and De Meyer (1991) Geletkanycz (1997) and Barkema and Vermeulen (1997) suggests that the national cultural work related values of time orientation and uncertainty avoidance are likely candidates for

independent variables in research addressing the influence of culture on strategic management.

Recently there have been empirical studies that have explored different aspects of culture/management linkage (Geletkancyz, 1997; Barkema and Vermeulen, 1997). In addition, one cross-national study of strategic orientations suggested that Hofstede-like studies of strategic orientations might be needed (Hitt, Dacin, Tyler and Park, 1997). This supports the belief that further research should be undertaken to extend the understanding of these elements.

The intersection of the culture literature with the strategic management literature suggests that the national cultural work related value of time orientation is a likely independent variable in research upon the influence of culture upon strategic management. Strategic choice is a quantifiable, dependent variable which theory suggests will be influenced by culture. Therefore, the influence of time orientation upon strategic choice appears as a likely candidate for research based upon this preliminary literature review.

Summary

The national cultural work-related values research of Hofstede (1980 and 1991) and Trompenaars (1996) suggest that time orientation is a national cultural work-related value which influences management behavior. Their work is largely based upon the culture value theory of Kluckhohn and Strodtbeck (1961) and the work of Talcott Parsons (1951). The Design School Model of Strategic Planning

suggests that manager's values will influence strategic choice (Mintzberg, 1994, p. 37). The strategy typology of Miles and Snow (1978) posits that firms may be characterized by four strategic choice types. Taken together, these theories support the belief that the national cultural work-related values of managers influence strategic choice. Specifically, the time orientation dimension of national cultural work-related values may influence the choice of one of the four strategy types described by Miles and Snow.

The base value theory suggests that causality flows from national culture to management behavior. Therefore, the time orientation dimension described by both Trompenaars and Hofstede would constitute an independent variable. The typology of Miles and Snow suggests a dependent variable, strategy choice, which is characterized by four all inclusive and mutually exclusive strategy types. Managers' strategy choice as a dependent variable is supported by the Design School Model of Mintzberg (1994), the Lachman, Nedd, and Hinnings (1997) model and is consistent with the value theories of Hofstede and Trompenaars.

CHAPTER III

METHODOLOGY

Much has been written about the appropriate ways in which to study culture (Naroll and Cohen, 1970; Triandis and Berry, 1980; Nath 1986). It is widely recognized that if social science research is difficult in general, then cross-cultural social scientific studies are all the more difficult (Cavusgil and Das, 1997; Usunier, 1998). Fortunately there are numerous approaches from which to choose.

Potential Methodological Approaches

There are at least nine potential approaches one might consider: 1) Subjective culture studies, 2) Human relations area files, 3) Experiments, 4) Ability, personality and attitude tests, 5) Observation of behavior, 6) Translations, 7) Interviews and surveys, 8) Content analysis and 9) Multi-method approaches (Bhawuk and Triandis, 1996). Each approach has its particular strengths and weaknesses.

Further, these approaches might be placed within the framework suggested by Hofstede, who suggested a two-by-two matrix in which the

horizontal axis represents either "natural" or "provoked" behavior and the vertical axis "words" and "deeds" (Hofstede, 1984). Thus, the strategies for operationalizing constructs fall into four cells. In the first cell "provoked" responses in "words" are typified by questionnaires such as ability, personality and attitude tests. Cell two reflects "words" in a natural context such as content analysis of speeches, and documents. The third cell contains "deeds" which are provoked such as laboratory experiments. The fourth cell contains "deeds" which are "natural" such as direct observation of behavior or use of descriptive statistics. In order to achieve construct validity Hofstede suggests that one should "triangulate" using at least two strategies. This is consistent with the advice of Bhawuk and Triandis who found that reliance on one strategy may produce inadequate results; thus, the emergence of multi-method approaches.

FOUR APPROACHES FOR CULTURAL VALUES RESEARCH

(Combining Hofstede 1984, p. 17 and Bhawuk and Triandis, 1996)

Behavior	PROVOKED	NATURAL
WORDS	*CELL ONE* Questionnaires Interviews Projective tests (4) Ability, Personality & Aptitude tests (7) Interviews & Surveys	*CELL TWO* Content Analysis or Speeches discussions documents (6) Translations (8) Content Analysis
DEEDS	*CELL THREE* Laboratory experiments Field Experiments (3) Experiments	*CELL FOUR* Direct Observation Use of available descriptive statistics (1) Subjective Culture Studies (2) Human Relations area files (5) Observation of Behavior

(9) Multi-Method Approach
(Triangulation-Combine Cells One and Four
or Cells One and Three, or One and Two)

Culture Specific and Culture General Approaches

One issue in the culture field is that of *emic* and *etic*. These represent the culture-specific and culture-general approaches. For example, cell four of the approach chart represents the *emic* or classic anthropological or culture-specific approaches. The Participant Observer would be typical here. Cell one is more typical of the *etic* approach. National level pencil-and-paper surveys would be typical. Some scientists believe that each culture is so unique that uniqueness must be the focus of study. Others believe that cultures have both unique and universal dimensions and are more interested in the universals (Bhawuk and Triandis, 1996). As such they represent two distinct approaches to culture study.

Over time a feeling developed that cultural similarities need to be studied and understood before differences may be studied effectively. The reason for this is that it is not possible to discern a cultural difference from a misperception of method in the absence of a framework (Campbell, 1968).

Emic approaches such as ethnographic studies, systematic observations and content analyses tend to present problems of replicability and accuracy assessment. However, they have been used with interesting results; for example, McClelland's use of content analysis. *Etic* approaches such as testing and questionnaires tend to be intrusive. While internal validity may be obtained, external validity may be difficult to establish without a great deal of work. These approaches have been widely used by researchers in the applied social sciences. Therefore, both the goals of the researcher and the environmental

constraints will influence the choice of approach (Bhawuk and Triandis, 1996, p. 22-32). The use of triangulation, i.e., combining the two approaches, may overcome some of the limitations of each and increase both the generality and richness of the research, if the researcher can accept the increases in cost, time and effort required.

Matched Samples and Random Samples

Both Hofstede (1997) and Schwartz (1994) suggest that in the absence of random samples, researchers should use matched samples across cultures. Due to economic constraints, true random samples are not an option in the current research or in most of the published culture values literature. "The practical problems involved in getting access to matched samples in different cultures can be enormous, and researchers have to accept compromise in order to obtain data at all" (Hofstede, 1984, p. 30). However, access to international professional associations, international schools and training centers or national organizations employing personnel from different nationalities may facilitate such sampling. Thus, matched samples in different countries can be used to measure strategy choice and time orientation.

Categorical Variables--Data Analysis

In the present research both the dependent variable and the independent variable are categorical. In such a case the use of cross-tabulation and

measures of association are appropriate (Alreck and Settle, 1985, pp. 303-309; Norusis, 1996, pp. 325-387.) The chi-square statistic is used to test for dependence or independence of the variables. The chi-square test does not indicate direction, only that there is or is not a relationship between the variables. Both the Pearson Chi-Square and the Kruskal-Wallis Test are used. The Kruskal-Wallis test is a nonparametric alternative to one-way analysis of variance and is computed exactly as the Mann-Whitney U test, except more groups may be accommodated. Use of two tests allows both the mean and median to be tested (Norusis, 1996, p. 349). A related approach, Lambda (λ) is appropriate in data analysis (Babbie, 1995, p. 416-418). Lambda is a proportional reduction in error (PRE) measure. The Lambda statistic does indicate direction.

The independent variable may be assessed in at least four different ways. The first is the dimension used by Hofstede, which is an ordinal or non-metric dimension. The second is the Cottle dimension used by Trompenaars, which is usually considered categorical . The third is the proxy developed by Read (1994). The fourth is the Hall model, which is categorical. It would thus be possible to categorize the independent variable as long-term or short-term time orientation, (Hofstede and Reed) or monochronic or polychronic (Hall), or past-present-or-future-oriented (Cottle and Trompenaars). It is useful to note that a monochronic time orientation is associated with a future orientation and polychronic with past or present time orientation, so there is some conceptual overlap between the Hall and Cottle and Trompenaars models. The dependent variable, strategy choice, is

a categorical variable when using the Miles and Snow typology. The four categories (types) are Prospector, Defender, Analyzer and Reactor.

Since cross-cultural data exist for Reed and Hofstede, it was prudent to use Cottle's measure of time orientation, which had strong theoretical support and for which a useful instrument already existed. The Cottle measure has the added benefit of measuring differential preferences, since the Circles test allows the researcher to measure the order of the preference for past, present and future. After measuring time orientation with the Cottle measure it can be useful to then compare the results against results from Reed and Hofstede. This triangulation may be used to confirm validity.

Triangulation

Based upon the work of Hofstede and Bhawuk and Triandis, it appears that a multi-method or triangulation approach is appropriate; however, it is often not feasible. This idea appears to be gaining currency as evidenced by recent articles, e.g. Kopinak 's (1999) work, which combines both qualitative and quantitative methods to more adequately reach research objectives. Ideally one would use techniques from opposed cells, i.e. cell one and cell four or cell one and either cell two or cell three. In order to achieve construct validity Hofstede suggests that one should "triangulate."

The most frequently used approach is that of cell one, in which questionnaires or projective tests are used. This involves use of "words" and

"provoked behavior." The polar opposite of this strategy is the use of cell four, which involves "deeds" and "natural" behavior, e.g. use of available descriptive statistics. Therefore, the general model selected is the multi-method approach using cell four results for comparison with cell one results with respect to time orientation.

Fortunately there are several "paper and pencil" questionnaires available with which to measure time orientation. The Cottle approach has the advantage of measuring both direction and intensity, which the Hall method for example is not able to do. Unfortunately, with respect to strategy choice, cell four is problematic. So triangulation to achieve construct validation becomes somewhat more difficult for strategy choice.

Hofstede comments on such approaches, saying:

> "In this case pragmatic validation is not possible, and we should be satisfied with construct validation, which means that the measures used for our construct related to the measures used for other, related constructs in the way predicted by our theory. To achieve good construct validity we therefore need both good measurements and good theory" (Hofstede, 1984, p. 17).

Sample Frame

There are two issues with respect to the sampling frame, the size of the sample and the composition of the sample. For purposes of the current research the use of a matched sample of managers of retail businesses (SIC code 5945) in the U.S., Brazil and Japan was selected. For purposes of triangulation, comparison between the time orientation results of this study and the results of

Reed (1994) and Franke, Hofstede and Bond (1991) and Trompenaars and Hampden-Turner (1998) seemed prudent.

In order to obtain a better sense of the size of the sample and to make sure that combing two previously tested instruments does not produce undesired interaction, a pre-test of the questionnaire was performed. Results indicated that in order to use cross tabulation, with minimum expected cell sizes of greater than 5, it will be necessary to have not less than 60 useable cases. Managers in the United States, Latin America and Asia are desirable based upon the predicted differences in time orientation in the regions.

Data Collection

Data were collected by means of questionnaires administered to a matched sample (SIC code 5945) of retail business managers through the assistance of a large international distributor of toys, gifts and hobbies. That is to say, the provoked, word approach to data collection was employed. The questionnaires used the Cottle measure for time orientation and the Miles and Snow typology for the strategy choice measure. The instrument combining these two measures was pre-tested.

Variables

Independent Variables:

TimeOr1: Primary preference for Past (1), Present (2) or Future (3) time orientation as identified by the Cottle Circle Test.

TimeOr2: Secondary preference for Past (1), Present (2) or Future (3) time orientation as identified by the Cottle Circle Test.

TimeOr3: Tertiary preference for Past (1), Present (2) or Future (3) time orientation as identified by the Cottle Circle Test.

Nation: This nominal variable refers to national birthplace of the individual, (1) USA, (2) Brazil, (3) Japan, (4)England, (5) Columbia, (6) Venezuela, (7) Cuba, (8) Nicaragua, (9) Peru, (10) Honduras (11) Dominican Republic (12) Ecuador (13) Mexico, (14) Jamaica, (15) Bahamas.

Age: This variable may be treated as a metric or categorical variable. It is coded as categorical in this study. Under 21 (1), 21-30 (2) 31-40 (3), 41-50 (4), 51-60 (5) and Over 60 (6).

Gender: This variable is categorical, male (1) and female (2).

Occupation: This variable is categorical, manager (1), owner (2), sales (3), technical (4), professional (5).

Industry This variable is categorical, retail (1), manufacturing (2) distribution (3), service (4), and education (5) and government (6).

Size: This categorical variable is the individual's perception of the relative size of his/her firm in its industry, large (1), medium (2) or small (3)

School: This nominal variable refers to the nation in which the individual attended elementary school. If different from place of birth, place of childhood education may be a more significant indicator of cultural values. (1) USA, (2) Brazil, (3) Japan, (4) England, (5) Columbia, (6) Venezuela, (7) Cuba, (8) Nicaragua, (9) Peru, (10) Honduras (11) Dominican Republic (12) Ecuador (13) Mexico, (14) Jamaica, (15) Bahamas.

Education: This categorical variable is the highest level of education achieved: High school graduate (1), Some university (2) university graduate (3), and graduate school (4).

Dependent Variables:

StgyTyp: Primary preference for Defender (1), Prospector (2), Analyzer (3), Or Reactor (4) strategy type as identified by the Miles and Snow measure. This is a categorical variable.

Defender: This categorical variable represents organizations, which have narrow product-market domains. Top managers in this type of organization are highly expert in their organization's limited area of operation but do not tend to search outside their domains for new opportunities. As a result of this narrow focus, these organizations seldom need to make major adjustments in their technology, structure or methods of operations. Instead they devote primary attention to improving the efficiency of their existing operations.

Prospector: This categorical variable represents organizations, which almost continually search for market opportunities, and regularly experiment with potential responses to emerging environmental trends. Thus, these organizations often are the creators of change and uncertainty to which their competitors must respond. However, because of their strong concern for product and market innovation, these organizations are not completely efficient.

Analyzer: This categorical variable represents organizations, which operate in two types of product-market domains, one relatively stable, the other changing. In their stable areas, these organizations operate routinely and efficiently through use of formalized structures and processes. In their more turbulent areas, top managers watch their competitors closely for new ideas, and then they rapidly adopt those which appear to be the most promising.

Reactor: This categorical variable represents organizations which, operate in an environment of perceived uncertainty and change but which are unable to respond purposefully. Because this type of organization lacks a consistent strategy-structure relationship, it seldom makes adjustments of any sort until forced to do so by environmental pressures.

Note: the descriptions of the dependent variable are paraphrased from Miles and Snow (1978, p. 29).

Predicted Relationships

If the theories are correct, what then should one expect with regard to the relationships between the independent variables and the dependent variables? One would expect:

Predicted Relationships

	Strategy Choice (Miles and Snow Typology)	Time Orientation-Strength and Order of Importance (Cottle's Circles Test)
1.	Prospector First to seek new products And opportunities Aggressive response to new opportunities	Future Oriented (strongest) Present next Past last
2.	Defender Maintains a "niche" in stable service or product. Concentrates on low price quality, efficiency to hold market.	Past Oriented (strongest) Present Next Future Last
3.	Reactor No consistent behavior regarding strategy. Changes product offering when and where it is forced to. May exhibit actions associated with other strategy types.	No consistent Strength or Order of Time Orientation Falls between Defender and Prospector on most measures.
4.	Analyzer Maintains stable base. Selectively develops new opportunities after competitor identifies them. Combines the Prospector and Defender strategies.	Present Oriented (strongest) Future next Past last

PREDICTED DISTRIBUTION OF SAMPLE POPULATION

Cross-tabulation

Strategy Types (Miles and Snow)

Time Orientation

	Prospector	Analyzer	Reactor	Defender
Past	Few	Some	Some	Many
Present	Some	Many	Many	Few
Future	Many	Some	Some	Few

Nation

	Prospector	Analyzer	Reactor	Defender
(U.S.) Western	Many	Many	Some	Few
Eastern (Japan)	Few	Many	Some	Some
Latin (Brazil)	Few	Many	Many	Few

Time Orientation

Nation

	Past	Present	Future
Western	Less	Less	More
Eastern	More	Less	Less
Latin	Less	More	Less

This line of thinking suggested the following hypotheses:

H1a: Future time orientation will be more highly associated with Prospector strategy choice than with Defender strategy choices.

HO1a: Future time orientation will not differ in association with a Defender strategy choice and a Prospector strategy choice.

H1b: Future time orientation will be more highly associated with a Prospector strategy choice than with an Analyzer strategy choice

HO1b: Future time orientation will not differ in association with an Analyzer strategy choice and a Prospector strategy choice.

H1c: Future time orientation will be more highly associated with Prospector strategy choice than with the Reactor strategy choice.

HO1c: Future time orientation will not differ in association with a Reactor strategy choice and a Prospector strategy choice.

H2a: Past time orientation will be more highly associated with a Defender strategy choice than with the Prospector strategy choice.

HO2a: Past time orientation will not differ in association with a Prospector strategy choice and a Defender strategy choice.

H2b: Past time orientation will be more highly associated with a Defender strategy choice than with an Analyzer strategy choice.

HO2b: Past time orientation will not differ in association with an Analyzer strategy choice and a Defender strategy choice.

H2c: Past time orientation will be more highly associated with a Defender strategy choice than with a Reactor strategy choice.

HO2c: Past time orientation will not differ in association with a Reactor strategy choice and a Defender strategy choice.

H3a: The proportion of U.S. managers with a future time orientation will be higher than the proportion of Brazilian managers with a future time orientation.

HO3a There will be no difference in the proportion of Brazilian managers with a future time orientation and U.S. managers with a future time orientation.

H3b: The proportion of U. S. managers with a future time orientation will be higher than the proportion of Japanese managers with a future time orientation.

HO3b: The will be no difference in the proportion of Japanese managers with a future time orientation and the proportion of U.S. managers with a future time orientation.

H4: The proportion of Brazilian managers with a present time orientation will be greater than the proportion of U.S. managers with a present time orientation.

Ho4: There will be no difference in the proportion of U.S. Managers with a present time orientation and the proportion of Brazilian Managers with a present time orientation.

H5: The proportion of U.S. managers with a preference for a Prospector strategy will be greater than the proportion of Brazilian managers with a preference for a Prospector strategy.

HO5: There will be no difference in the proportion of U.S. managers with a preference for a Prospector strategy and the proportion of Brazilian managers with a preference for a Prospector strategy.

H6: The proportion of Brazilian managers with a preference for an Analyzer strategy will be greater than the proportion of Japanese managers with a preference for an Analyzer strategy.

HO6: There will be no difference in the proportion of Brazilian managers with a preference for an Analyzer strategy and the proportion of Japanese managers with a preference for an Analyzer strategy

Hypotheses H1a, H1b, H1c, H2a, H2b, and H2c were tested in four ways: 1) the Chi-Square test for independence, 2) the Lambda test for association and direction, 3) symmetric Lambda--the Goodman and Kruskal Tau test for significance of the symmetric Lambda is applicable-- 4) Spearman's Rho were derived by assuming that two complete sets of ranks constitute interval scales and applying the Pearson coefficient to them. The primary tests were Chi-Square and Lambda; however, in the event that they provided contradictory results, the

use of Goodman and Kruskal Tau and Spearman's Rho assisted in the analysis. Hypotheses H3 through H6 were tested two ways. First, the means were compared using the Pearson Chi-Square test. Next, the medians were tested using the Kruskal-Wallis test. The reason for this is that in social science research assumptions of each test are typically violated to various extents. Use of both tests increased our confidence in either accepting or rejecting the null hypothesis. When the results were consistent, the researcher was comfortable in the conclusion. When they were not consistent, then the researcher examined the data to understand why (Norusis, 1996, p. 350).

Pre-Test of Questionnaire

A pre-test was conducted, using a sample of 167 adult business students at a private university. Sixteen questionnaires were not useable due to missing data or failure to follow instructions leaving 151 useable. Data were analyzed using frequency distributions, cross-tabulations, and canonical discriminant correlations. SPSS, graduate pack, version 8.0 was used for analysis.

When observing frequency tables and cross-tabulations the variables generally behaved as predicted. For example, 66.2 percent of U.S. managers displayed a future time orientation. Present time orientation accounted for 13.9 percent of U.S. managers. Past time orientation accounted for 19.9 percent of US managers. This was generally consistent with the results of Trompenaars and Cottle's research in terms of preferential ordering of time orientation; however, one would have expected the order of past time orientation and present time

orientation to be reversed based on the literature. The distribution of strategy types was partially as predicted, with Prospectors being most numerous (34.4 percent). However, the large proportion of Defenders (29.8 percent) was not anticipated. The proportion of Analyzers and Reactors (11.9 percent and 23.8 percent, respectively) was not consistent with results expected.

Time orientation was cross-tabulated with strategy type. The $\chi 2$ statistic was used in order to test if the variables are dependent or independent. The null and alternative hypotheses for this were:

Ho: Time orientation and strategy choice are independent.

H1: Time orientation and strategy choice are dependent.

The critical value for $\chi 2$ for 6 degrees of freedom at .01 is 16.812. The computed value for chi-square is 18.846. (Hanke and Reitsch, 1994, p. 991.) The decision rule was that if chi-square is greater than 16.812 then reject the null hypothesis. Therefore, the null hypothesis was rejected. A dependent relationship between the variables was supported. There is a caveat, however. There were two cells (16.7 percent) that had an expected count less than 5. A rule of thumb often used is that each expected frequency in a contingency table must be five or greater for the test to be accurate. The alternative was to reduce the number of cells by making logical combinations of categories. For example, one could combine the Reactor and Analyzer strategy types since they fall in between the polar extremes of Defenders and Prospectors and are somewhat difficult to differentiate as a practical matter. That is Reactors behave in a similar

fashion to Analyzers but for entirely different reasons. This should not be necessary assuming a sufficiently large sample size.

With respect to the Lambda statistic, the results indicate that if one knows the time orientation it is possible to make a better prediction of strategy type than if one does not know time orientation. With strategy type dependent, Lambda equals .091. That is, one may reduce the error in predicting strategy type by about 9 percent by knowing time orientation. Knowing strategy type does not assist one in predicting time orientation, lambda equals 0.0000. The approximate significance was .147. If instead, the Goodman and Kruskal Tau statistic was used, then a small positive relationship between strategy type and time orientation, with approximate significance equal to .005, resulted. There was also a small positive relationship between strategy type and time orientation, with approximate significance equal to .005.

Unfortunately, although the cross-tabulation for time orientation versus strategy type confirmed that 37 of 52 prospectors had a future-time orientation, 30 of 45 defenders also had a future time orientation, and 15 of 18 analyzers had a future-time orientation, as well as 18 of 36 reactors. This may be accounted for by the overwhelming preference of U.S. managers for a future time orientation.

The results of the pre-testing of the questionnaire were partially consistent with previous research reported in the literature; that is, U.S. managers displayed a distinct future time orientation. However, one would have expected present-time orientation to rank second, not past-time orientation. This only partially supported validity as described by Geert Hofstede in his comments on

methodology and triangulation (Hofstede, 1984, pp. 17-38). With respect to reliability, a split-half analysis was conducted. U.S. managers were randomly assigned to Group A and Group B. Frequency tables and cross-tabulations were done. The Mann-Whitney U test was run to determine if the time orientation means and the strategy type means of the two sample populations were equal. The hypotheses were:

$$Ho: \mu A - \mu B = 0$$

$$H1: \mu A - \mu B \neq 0.$$

The decision rule here was if the computed z value is greater than 1.96 or less than -1.96 reject the null hypothesis. The computed z value for strategy type was -1.458; therefore the null hypothesis was not rejected. The populations had the same mean value. The computed z value for time orientation was -.555, therefore the null hypothesis was not rejected. The populations had the same mean value for time orientation. Reliability was supported on the basis of the test.

The standardized canonical discriminant function coefficients supported the belief that time orientation substantially influenced choice of strategy type. Function one accounted for 72.1 percent of variance. Time orientation had the highest canonical discriminant function coefficients in discriminant function one. Time orientation had the second highest coefficient in discriminant function two and the fifth highest coefficient in discriminant function three. This supported the belief that time orientation does influence strategy choice.

This process allows one to use canonical analysis to explore the strength of the influence of time orientation relative to the strength of other variables that

the literature suggests may influence strategy choice, i.e, age, gender, industry type, relative size of the organization in the industry and position in the firm (owner versus manager or supervisor). Results were consistent with the literature that suggests that time orientation should be a primary influence (Barkema and Vermeulen, 1997).

Sample size is important because discriminant analysis is quite sensitive to the ratio of sample size to the number of predictor variables included. A ratio of 20 to 1 is considered desirable. Therefore if three predictor variables were included, then 60 cases would be required. However, since discriminant analysis calls for splitting the sample into two sub-samples (one to estimate the discriminant functions and the other for validation purposes) a larger sample, say 120 cases would be required. The cross tabulation for strategy choice on time orientation produces 12 cells so 60 cases would satisfy the rule of thumb for an expected count of not less than five per cell. A sample size of 120 cases should more than satisfy the need. A sample this large may not be available and adjustment to methodology suggested previously may be required. In such a case a logical combining of categories might reduce the cross-tabulation matrix. Future research considering a larger number of predictor variables will require larger sample size.

In addition to the cross-tabulation and canonical analysis, an exploratory test of partial correlations was run based upon the advice of Babbie.

> Babbie defends this by saying, "I encourage you to use any statistical technique-any measure of association or any test of significance-on any data if it will help you understand your data. If the testing of product-moment

> correlations among nominal variables and the testing of statistical significance in the context of uncontrolled sampling will meet this criterion, then I would encourage such activities. ...Anything goes, if it leads ultimately to the understanding of data and of the social world under study." (Babbie, 1994, p. 440).

The partial correlations were controlled for nation, age, gender, occupation, industry, and firm size based upon predicted influences observed in the literature. The partial correlation coefficients revealed that, in general, the predicted relationships existed and the directions were as predicted.

A future time orientation was positively correlated with the Prospector strategy type and negatively correlated with the Defender strategy type and slightly less negatively correlated with a Reactor strategy type. However, it was not expected that a future time orientation would be more strongly correlated with the Analyzer strategy type than with the Prospector strategy type. A past time orientation was positively correlated with the Reactor strategy type and negatively correlated with a Prospector strategy type as expected. However, it was not expected that past time orientation would be negatively correlated with a Defender strategy type. A present time orientation was positively correlated with a Defender strategy type and negatively correlated with the Prospector strategy type and slightly less negatively correlated with the Reactor strategy type as expected. Unfortunately the correlations were not statistically significant.

The pre-test of the questionnaire makes it reasonable to believe that the proposed approach should yield sufficient useable data to test the propositions with respect to time orientation and strategy choice.

Conclusion

Based upon the literature review and the pre-test of the Questionnaire, it was concluded that research should be conducted using the pre-tested questionnaire with a matched sample of more than 120 business managers. The sample population consisted of managers of retail toy-hobby-gift shops in the United States, Brazil and Japan, obtained through the assistance of a large multi-national distributor of toys, gifts, and hobbies. Triangulation was undertaken by comparing time orientation results of the present study to those of Read (1994) and Hofstede (1997) and Trompenaars and Hampden-Turner (1998).

CHAPTER IV

PRESENTATION AND ANALYSIS OF FINDINGS

The findings and analysis of the research are presented in terms of (1) Sample Composition (2) Non-Response Bias (3) Reliability (4) Frequencies, (5) Association, (6) Correlation, (7) Partial Correlation, (8) Canonical Correlation, (9) Hypothesis Testing, and (10) Triangulation.

Sample Composition

The sample frame consisted of 1382 retail business managers (SIC code 5945), located in the U.S., Brazil and Japan. Questionnaires were distributed to the managers of the retail businesses and collected from the managers with the assistance of a large multinational distributor of toys, gifts and hobbies. One hundred and fifteen (115) questionnaires were returned. Eleven questionnaires were incomplete or illegible, leaving 104 useable questionnaires. There were 43 managers in the U.S. sample, 29 managers in the Brazilian sample and 32 managers in the Japanese sample. The return rate of less than 10 percent was consistent with prior industry surveys (Canamara, 2000). Two rounds of requests were conducted, with 92 useable responses collected in the first round and 12

useable responses collected in the second round. Logistical factors limited additional follow-up measures.

Non-Response Bias

Although previous industry surveys did not find evidence of non-response bias (Canamara, 2000), a test was made. The first round responses and the second round responses were tested to determine if they had the same mean value. Both strategy choice and time orientation were tested, and both the T-test and the Mann-Whitney test were utilized. The decision rule was to reject the null hypothesis if z was greater than 1.96 or less than - 1.96. For the Mann-Whitney on strategy choice the z value was -1.998, significant at .046 so the null hypothesis could be rejected. The T-test was -2.032, significant at .045, confirming rejection of the null hypothesis. This was not a desired result. It indicated the possibility of non-response bias. That is, for strategic choice the late sample was different from the early sample, suggesting that managers who replied late or not at all might be different from managers who responded promptly. For time orientation, the Mann-Whitney result was a z equals -1.056, significant at .291 so the null hypothesis could not be rejected. The T-test result was t equals -1.709, significant at .090 confirming that the null hypothesis could not be rejected. Therefore, the tests of early responses versus late responses for time orientation and strategic choice were not internally consistent, indicating possible non-response bias.

Reliability

Because reliability was an issue, a split-half test was conducted on the data. The cases were randomly assigned to Group A and Group B. The Mann-Whitney U test was conducted as was the T-test. The T test value was - .051, significant at .959, so the null hypothesis could not be rejected. The Mann-Whitney U test result showed z equal to -1.056, significant at .291, confirming failure to reject the null hypothesis. Since there was no statistically significant difference between Group A and Group B , reliability was supported on the basis of the split-half tests.

Frequencies

In the U.S. sample, composed of 43 subjects, about 65 percent of the managers were future oriented, 19 percent were present oriented and 16 percent were past oriented. In the Brazilian sample of 29 subjects, about 17 percent of the managers were future oriented, 55 percent were present oriented and 28 percent were past oriented. In the Japanese sample, composed of 32 subjects, about 44 percent of the managers were future oriented, 25 percent were present oriented and 31 percent were past oriented.

With respect to strategic choice, the Japanese sample of managers was 28 percent Defender, 22 percent Analyzer, 41 percent Prospector and 9 percent Reactor. The U.S. sample of managers with respect to strategic choice was 33 percent Defender, 7 percent Analyzer, 51 percent Prospector and 9 percent

Reactor. The Brazilian sample of managers was 28 percent Defender, 35 percent Analyzer, 14 percent Prospector and 24 percent Reactor. The frequencies in the U.S. sample and Brazilian sample were largely as expected; however, the Japanese frequencies were not as expected. The large number of Japanese managers exhibiting a future time orientation was particularly unexpected.

As Table 2 on page 61 demonstrates, the predicted distributions of the sample population crass-tabulations were largely as predicted. The exceptions are as follows:

1. Cross-tabulation of Miles and Snow Strategy Types and Time Orientation was as predicted except that there were not as many present time oriented managers with a Reactor preference as predicted and there were more present oriented managers with a Defender preference than predicted. Also there were more future time oriented managers with a Defender preference than predicted.

2. Cross-tabulation of Miles and Snow Strategy Types and Nation was largely as predicted. However, there were more U.S. and Brazilian managers with the Defender preference than predicted, more Japanese managers with a Prospector preference than predicted and fewer U.S. Analyzers, and Brazilian Analyzers and Reactors than predicted.

3. Cross-tabulation of Time Orientation and Nation was largely as predicted except that there were fewer Japanese past time oriented managers than predicted and more present and future oriented Japanese managers than predicted.

PREDICTED DISTRIBUTION OF SAMPLE POPULATION
COMPARED TO ACTUAL DISTRIBUTION OF SAMPLE POPULATION

Predicted = Some, Few or Many
Actual = (#)

Cross-tabulation

Strategy Types (Miles and Snow)

		Prospector	Analyzer	Reactor	Defender
T	Past	Few (2)	Some (2)	Some (2)	Many (19)
I	Present	Some (4)	Many (15)	Many (7)	Few (6)
M	Future	Many (33)	Some (3)	Some (5)	Few (6)
E					

Predicted = Some, Few or Many
Actual = (#)

Cross-tabulation

Strategy Types (Miles and Snow)

		Prospector	Analyzer	Reactor	Defender
N A	U.S.	Many (21)	Many (3)	Some (4)	Few (16)
T I	Japan	Few (12)	Some (10)	Some (4)	Many (6)
O N	Brazil	Few (3)	Many (7)	Many (5)	Few (7)

Cross-tabulation

Time Orientation

		Past	Present	Future
N A	U.S.	Less (10)	Less (10)	More (24)
T I	Japan	More (7)	Less (10)	Less (15)
O N	Brazil	Less (6)	More (12)	Less (4)

Predicted = More, Less
Actual = (#)

Association

The Lambda test was applied to test dependence and direction with respect to time orientation and strategy choice with the following results: For the U.S. sample, with strategic choice dependent, the Lambda value was .524, significant at .000. Time orientation was not significant. This was consistent with the predicted relationship and with the Goodman and Kruskal tau, which had a value equal to .428, significant at .000.

For the Japanese sample, with time orientation dependent, the Lambda value was equal to .444, significant at .021. This was not consistent with either the predicted dependent relationship in which strategy choice is dependent or with the results of the Goodman and Kruskal tau, which showed strategic choice dependent with a value equal to .248, significant at .001.

For the Brazilian sample, strategic choice was dependent with a Lambda value equal to .316, significant at .006. This was consistent with the predicted relationship and with the Goodman and Kruskal tau test results, in which the value was equal to .215, significant at .006.

The Brazilian and U.S. sample results were as expected. The Japanese sample result was not as expected. The direction of influence was from strategy to time orientation in the Japanese sample based upon Lambda, but in the predicted direction based upon Goodman and Kruskal tau. The test results were not consistent in the Japanese sample.

Correlation

For time orientation and strategic choice the Spearman Correlations results were as follows: The U.S. sample value was equal to .617, significant at .000, supporting a strong relationship between the variables. For the Japanese sample, the value was equal to .446, significant at .010, also supporting a relationship between the variables. For the Brazilian sample, the value was equal to .443, significant at .019, also supporting a relationship between time orientation and strategic choice. For Consolidated Data, the value was equal to .479, significant at .000, also supporting the relationship between the time orientation and strategic choice.

Partial Correlations

Based upon Babbie (1994) exploratory tests of partial correlations were run. The partial correlations controlled for nation, age, gender, occupation, industry, firm size and education based upon predicted influences observed in the literature. The partial correlation coefficients revealed that the predicted relationship between time orientation and choice of strategy was as expected (.4597, significant at .000).

The Consolidated Data zero order partial correlation coefficient for strategy choice on time orientation was equal to .4847, significant at .000. There were some other correlations that were significant. For example, strategy choice

was negatively correlated with age, the value equal to - .1995, was significant at .042. Cottle did say that age needed to be controlled for because one's sense of time may change with the aging process (Cottle, 1976). Strategy and industry were correlated at .2310, significant at .018. This was consistent with the literature that indicated the need to control for industry in strategic studies. That is a high tech industry may have a different strategy distribution that a low-tech industry. Age and gender were correlated at -.2459, significant at .012 and may have been an artifact of the distribution of management characteristics among toy, gift and hobby retailers. It is less clear why nation and education would be negatively correlated at -.4304, significant at .000. Gender and education were correlated at .2590, significant at .008. This is probably related to the fact the sample population is somewhat older and may reflect past trends for females to receive less education than males. A comparison can be drawn when student samples are examined in future studies. Presumably, the student population will reflect greater educational opportunities for females.

Canonical Correlation

In the Brazilian sample the canonical structure matrix showed that time orientation had the largest absolute correlation (.709) and that Function One explained almost 45 percent of the variance in strategy choice. For the U.S. sample, the canonical structure matrix showed that time orientation had the largest absolute correlation (.795) and that Function One accounted for 79

percent of the variance in strategy choice. The Japanese sample was different. The canonical correlation matrix showed that age had the highest absolute correlation (.627) and Function One accounted for 64 percent of the variance in strategy choice. However, time orientation showed the second highest absolute correlation (.523) and Function Two accounted for an additional 27.8 percent of the variance in strategy choice. For the consolidated data, the canonical correlation matrix showed that time orientation had the highest absolute correlation (.920) and that Function One accounted for 82 percent of the variance in strategy choice. Overall, the canonical correlation analysis results are consistent with the literature that suggests that time orientation should be an important influence (Barkema and Vermeulen, 1997).

Hypothesis Testing

The first hypothesis H1a was that future time orientation would be more highly associated with the Prospector strategy choice than with the Defender strategy choice. Examination of the cross-tabulations suggested support. Among managers with a future time orientation, there were 6 Defenders, 3 Analyzers, 33 Prospectors and 5 Reactors. The null hypothesis H01a was that future time orientation would not differ in association with a Defender strategy choice and with a Prospector strategy choice. The decision rule was to reject the null hypothesis if the calculated t value was greater than the critical value of 3.841, significant at .05. The calculated Chi-Square value of t was 29.813, significant at

.000. Thus the null hypothesis was rejected and support was found for H1a. The Lambda (directional) value was .613. That is, knowing time orientation reduced the error in predicting strategy choice by 61 percent. The Approximate T value was equal to 3.738, significant at .000. Goodman and Kruskal tau value was .426, significant at .000. The Spearman (symmetric) correlation was equal to .653, significant at .000. So the test results were consistent with support for H1a.

The next hypothesis H1b was that future time orientation would be more highly associated with a Prospector strategy choice than with an Analyzer strategy choice. The cross-tabulation for managers with a future time orientation reflected 33 Prospectors and 3 Analyzers. The null hypothesis H01b was that future time orientation would not differ in association with an Analyzer strategy choice and a Prospector strategy choice. The decision rule was to reject the null hypothesis if the calculated value of t was greater than 3.841, significant at .05. The calculated value of t was 29.936, significant at .000, therefore the null hypothesis was rejected and support was found for H1b. Lambda results (directional) were a value of .550. That is, knowing time orientation reduced the error in predicting strategy choice by 55 percent. The Approximate T value was equal to 2.403, significant at .016 with strategy dependent. This was consistent with the Goodman and Kruskal Tau value equal to .457, significant at .000. The Spearman Correlation (symmetric) was equal to .676, significant at .000. Test results were consistent with support for H1b.

Hypothesis H1c was that future time orientation would be more highly associated with Prospector strategy choice than with the Reactor strategy choice.

The cross-tabulation showed that among managers with a future time orientation there were 33 Prospectors and 5 Reactors. The null hypothesis H01c was that future time orientation would not differ in association with a Reactor strategy choice and a Prospector strategy choice. The decision rule was to reject the null hypothesis if calculated t value was greater than the critical value of 3.841, significant at .05. The calculated t value was equal to 12.140, significant at .000. Therefore the null hypothesis was rejected and support was found for H1c. however, the Lambda result was not consistent with the Chi Square result. The Approximate T value was equal to .779, significant at .436. Lambda value was .214. The Goodman and Kruskal Tau test however was consistent; the value was .229, significant at .001. Spearman correlation (symmetric) was equal to -.479, significant at. 000. With only directional Lambda not significant, the rejection of the null hypothesis was generally supported.

Hypothesis H2a was that past time orientation would be more highly associated with a Defender strategy choice than with a Prospector strategy choice. The cross-tabulation showed there are 10 Defenders and there were 2 Prospectors among the managers with a past time orientation. The null hypothesis H02a was that past time orientation would not differ in association with a Prospector strategy choice and a Defender strategy choice. The decision rule was to reject the null hypothesis if the calculated value of t is greater than 3.841, significant at .05. The calculated value was 25.942, significant at .000, therefore the null hypothesis was rejected and H2a was supported. Lambda (directional) results with strategy dependent, had a value of .548. So knowing

time orientation reduced the error in predicting strategy choice by almost 55 percent. Approximate T equaled 4.139, significant at .000. Goodman and Kruskal tau with a value equal to .371, was significant at .000. This was consistent with rejecting the null hypothesis. The Spearman correlation (symmetric) was equal to - .609, significant at .000. Therefore, results of the tests were consistent with support for hypothesis H2a.

Hypothesis H2b was that past time orientation would be more highly associated with a Defender strategy choice than with an Analyzer strategy choice. The cross-tabulation showed there are 18 Defenders and only 2 Analyzers among managers with a past time orientation. The null hypothesis H02b was that past time orientation would not differ in association with an Analyzer strategy choice and a Defender strategy choice. The decision rule was to reject the null hypothesis if the calculated value of t was greater than the critical value of 3.841, significant at .05. The calculated value of t was equal to 11.782, significant at .001, therefore the null hypothesis was rejected and support was found for H2b. Lambda value (directional) was equal to .250. So knowing time orientation could reduce the error in predicting strategy choice by 25 percent. However, the Approximate T equaled .905, significant at .365, so the Lambda result was not consistent with the Chi-Square test result in rejecting the null hypothesis. The Goodman and Kruskal tau was equal to .231, significant at .001. Spearman correlation (symmetric) was - .481 significant at .000. Again, with the exception of directional Lambda, the tests supported rejection of the null hypothesis.

Hypothesis H2c was that past time orientation would be more highly associated with a Defender strategy choice than with a Reactor strategy choice. The cross-tabulation showed there were 19 Defenders and only two Reactors. The null hypothesis H02c was that past time orientation would not differ in association with a Reactor strategy choice and a Defender strategy choice. The decision rule was to reject the null hypothesis if the calculated value of t was greater than 3.841, significant at .05. The calculated value of t was equal to 8.562, significant at .004, therefore the null hypothesis was rejected and support was found for H2c. Lambda results (directional) were unusual in that the value was zero. This can occur due to the way Lambda is calculated, reduction in error when values of one variable are used to predict values of the other. "Even when Lambda is 0, other measures of association may find association of a different kind. No measure of association is sensitive to every type of association imaginable" (Norusis, 1996, p. 373). In the particular case, the Goodman and Kruskal tau value was equal to .190, significant at .001. The Spearman correlation was - .436, significant at .003. Again, with the exception of directional Lambda, the tests were consistent with rejecting the null hypothesis and supporting H2c.

Hypothesis H3a was that the proportion of U.S. managers with a future time orientation would be higher than the proportion of Brazilian managers with a future time orientation. The cross-tabulation showed 24 of 44 U.S. managers with a future time orientation and 4 of 22 Brazilian managers with a future time orientation. The null hypothesis H03a was that there would be no difference in

the proportion of Brazilian managers with a future time orientation and the proportion of U.S. managers with a future time orientation. The Independent Samples Test value was 2.958, significant at .004. The Kruskal-Wallis Chi-Square statistic was 7.820, significant at .005, which confirmed rejection of the null hypothesis. The median test Chi Square value was 7.940, significant at .005, therefore the null hypothesis was rejected and support was found for H3a.

Hypothesis H3b was that the proportion of U.S. managers with a future time orientation would be higher than the proportion of Japanese managers with a future time orientation. The cross-tabulation showed that 24 of 44 U.S. managers were future time oriented and 15 of 32 Japanese managers were future oriented. The null hypothesis H03b was that there would be no difference in the proportion of Japanese mangers with a future time orientation and the proportion of U.S. managers with a future time orientation. The Independent Samples T-Test value was .654, significant at .515, therefore the null hypothesis was not rejected and support was not found for H3b. The Kruskal-Wallis Chi-Square test statistic was .431, significant at .512 confirming the failure to reject the null hypothesis. Therefore, H3b was not supported. The median test could not be performed as not enough valid cases were available.

Hypothesis H4 was that the proportion of Brazilian managers with a present time orientation would be greater than the proportion of U.S. managers with a present time orientation. The cross-tabulation showed 10 of 44 U.S. mangers had a present time orientation and 12 of 22 Brazilian managers were present oriented. The null hypothesis H04 was that the proportion of U.S.

managers with a present time orientation would not differ from the proportion of Brazilian managers with a present time orientation. The Independent Samples T test value was - 2.685, significant at .009. The Kruskal-Wallis Chi-Square value was 6.581, significant at .010. The median test Chi-Square value was 6.682, significant at .010. The calculated value of the Pearson Chi-Square statistic was 6.682, significant at .010. Therefore the null hypothesis was rejected and support was found for H4.

Hypothesis H5 was that the proportion of U.S. managers with a preference for a Prospector strategy would be greater than the proportion of Brazilian managers with a preference for a Prospector strategy. The cross tabulation showed that 21 of 44 U.S. managers had a Prospector preference and that 3 of 22 Brazilian managers had a Prospector preference. The null hypothesis H05 was that there would be no difference in the proportion of U.S. managers with a preference for a Prospector strategy and the proportion of Brazilian managers with a preference for a Prospector strategy. The Independent Samples T-Test value of t was equal to 2.836, significant at .006. The Kruskal-Wallis Chi-Square value was 7.254, significant at .007. The median test Chi-Square was equal to 7.940, significant at .005. Therefore the null hypothesis was rejected and support was found for H5.

Hypothesis H6 was that the proportion of Brazilian managers with a preference for an Analyzer strategy would be greater than the proportion of Japanese managers with a preference for an Analyzer strategy. The cross-tabulation showed that 7 of 22 Brazilian mangers had a preference for the

Analyzer strategy and that 9 of 32 Japanese managers had a preference for the Analyzer strategy. The null hypothesis H06 was that there would be no difference in the proportion of Brazilian managers with a preference for an Analyzer strategy and the proportion of Japanese managers with a preference for an Analyzer strategy. The Independent Samples T-Test value was equal to .287, significant at .775. The Kruskal-Wallis Chi-Square value was equal to .084, significant at .772. The median test Chi-Square value was equal to .085, significant at .770. Therefore the null hypothesis could not be rejected and H6 was not supported.

Triangulation

The Circles test results showed that U.S. managers had a primary preference for a future time orientation, the Japanese managers also had a primary preference for a future time orientation and the Brazilian managers had a preference for a present time orientation. These results were not consistent with predicted results that were based largely upon the work of Hofstede and Reed (1994) as well as Trompenaars and Hampden-Turner (1998).

Hofstede's research showed that Japan was more long-term oriented (80) than Brazil (65) and the U.S. (29) as reported in Reed (1994). Reed's measure of long-term orientation was the marginal propensity to save. This was intended to capture conceptually much of Hofstede's long-term orientation, which focused on thrift, perseverance and a willingness to subordinate oneself for a purpose. Reed's measures for Japan (27.66), Brazil (22.45) and the U.S. (3) were

consistent with Hofstede's in reflecting differences in the magnitude and order of long-term orientation across the three countries.

Both Hofstede and Read conducted their studies more than a decade ago. Cultural values are generally stable over time, so one must be careful in suggesting that Japan's time orientation has converged toward Western time orientation, particularly in so brief a time period. Nevertheless, the result for Japan in the present study was inconsistent with previous studies of Hofstede (1991) and Reed (1994).

Trompenaars and Hampden-Turner (1998) on page 130 showed results of the Circles test for a U.S. sample, which reflected a primary preference for future time orientation, a secondary preference for a present time orientation and a tertiary preference for a past time orientation. For a Japanese sample, future time orientation and present time orientation were almost equal and past time orientation was least preferred. The U.S. results of the present study were consistent with the U.S. sample of Trompenaars and Hampden-Turner (1998). However, study results for Japan were not entirely consistent with the Japanese results from Trompenaars and Hampden-Turner (1998). That is, present time orientation and past time orientation were almost indistinguishable in the Trompenaars and Hampden-Turner (1998) result, but future time orientation was clearly preferred in the present study. Unfortunately, a Brazilian sample of the Cottle Circles Test was not reported in the Trompenaars and Hampden-Turner (1998) study, triangulation with respect to Trompenaars and Hampden-Turner (1998) was not complete.

Nevertheless, to the extent that these separate conceptualizations and measures of time orientation by Hofstede (1997), Reed (1994), Trompenaars and Hampden-Turner (1998) showed distinct time orientation differences among the three countries of interest, the results were consistent with the results of the present study, which also found differences in time orientation across Japanese, Brazilian and U.S. managers. The results of the present study with respect to Japan require further exploration due to inconsistencies in the results versus those of Hofstede (1997), Reed (1994) and to a lesser extent Trompenaars and Hampden-Turner (1998).

Although not hypothesized, the relationship between nation and time orientation was examined. It was necessary to eliminate six cases to reduce the cross-tabulation to a size in which no cells had an expected count of less than five. That is six cases involving subjects from countries other than Japan, Brazil or the U.S. were eliminated. In this analysis the Pearson Chi-Square was equal to 9.274, significant at .055, so rejecting the null hypothesis was not possible at .05. However, the Likelihood Ratio was 9.744, significant at .045. Also, Lambda was .145. Approximate T was 2.042, significant at .041. The Goodman and Kruskal Tau was .056, significant at .029. So analysis supports rejection of the null hypothesis and at least a weak support for the linkage between national culture and time orientation. That is, interpreting the Lambda statistic indicates that one could reduce the error of their prediction of time orientation at the national level by about 14 percent by knowing the nation of origin. In the present context, this of course assumes that the sample of managers of retail gift, toy and

hobby shops have a time orientation that does not differ from the national time orientation of the home country.

Summary

The chapter described the results of a study consisting of a sample of 104 managers of retail businesses from the U.S., Brazil and Japan. Results were described and analyzed in terms of (1) Sample Composition (2) Non Response Bias (3) Reliability (4) Frequencies, (5) Association, (6) Correlation, (7) Partial Correlation (8) Canonical Correlation, (9) Hypothesis Testing, and (10) Triangulation. In general, the results supported the hypothesized relationship between time orientation and strategic choice. Results from the U.S. sample and the Brazilian sample were largely as predicted; however, results from the Japanese sample were partially inconsistent with predicted results.

CHAPTER V

SUMMARY AND CONCLUSIONS

This chapter is divided into two parts. The first summarizes outcomes of the research with respect to the literature, pre-test, predicted relationships, sample composition, frequencies, associations, correlations, partial correlations, cannonical correlations, hypotheses testing, reliability and validity. The second part of the chapter explores the author's conclusions with respect to the goal of the study and outcomes of the tests of the relationship between the independent variable and the dependent variable. In addition, country selection, non-response bias, single variable measures, self-reporting, respondent composition, questionnaire language/ functional equivalence and data collection issues are discussed. Significantly, the implications for future research are addressed. Although this study generally supported the hypothesized influence relationship between managers' time orientation and strategic choice, some unexpected and contradictory findings raised many issues that have implications for future research.

Outcomes

This exploratory research extended the application of work-related culture value theory to the critical domain of strategic choice by managers. The goal of

the study was to increase the understanding of how managers make strategic choices. Specifically, the study, which involved a sample of 104 business managers from the U.S., Japan, and Brazil tested the relationship between the national cultural work-related value of time orientation and strategic choice by managers. The complexity of the constructs involved made cross-cultural research difficult; however, the study has potential value to stakeholders because of the economic, social and political effects of strategy choices.

Literature

There was considerable difference of opinion in the literature regarding the influence of culture. The culture literature extended from the late 1800's to the present (Tylor, 1896, Markoczy, 2000). Despite this long and voluminous literature base there was no commonly agreed upon definition of culture and no commonly accepted culture theory (Wilson, Hoppe, and Sayles, 1996). There was agreement upon at least two dimensions of culture, time orientation and individualism versus collectivism.

Research tells us that time orientation should be a strong influence on managerial behavior (Barkema and Vermeulen, 1997). Various methods were available to measure time orientation. The Circles test by Cottle (1967) had a strong theoretical base; it had been field tested by Fons Trompenaars and Charles Hampden-Turner in a study of more than 8,000 managers across more than 40 countries and had the benefit of measuring differences in time orientation

preferences. Therefore the Circles Test was selected to measure the independent variable, time orientation.

Like culture, strategy has a long and voluminous literature base (Ansoff, 1965; Porter, 1996). Like culture, there was little agreement upon a definition of strategy or a theoretical base for strategy (Mintzberg, 1994). However, the use of typologies to measure strategy has found strong support (Zahra and Pearce, 1990). In particular, the Miles and Snow typology has been extensively studied and tested (Ketchen, Combs, Russell and Shook, 1997). Therefore, it was selected to measure the dependent variable, strategic choice.

Pre-Test

The literature streams of culture and strategy converges in studies such as Schneider and DeMeyer (1991). It was reasonable therefore to test hypothesized relationships between culture and strategy and to use previously developed measures in such studies. However, combining measures may produce unanticipated or undesired interaction. Therefore, a pre-test of the combined measures, i.e. Cottle (1967) and Miles and Snow (1978), was undertaken to test for undesired interaction in combining the two previously tested instruments. The pre-test confirmed that the outcomes were generally consistent with expected results. A split-half test supported reliability. Therefore, the questionnaire combining the Circles Test and the Miles and Snow Typology was established for the research study.

Predicted Relationships

A review of the literature leads one to expect certain relationships exist between future time orientation and a Prospector strategy choice. It was expected that managers with a future time orientation would be more frequently associated with the Prospector strategy choice because Prospectors were first to seek new products and opportunities and were aggressive in response to new opportunities. Hypothesis testing (H1a, H1b, and H1c) supported this association. The only exception was directional Lambda in the case of H1c.

Likewise, it was expected that managers with a past time orientation would be more frequently associated with a Defender strategy choice because Defenders maintained a "niche" in a stable service or product market, holding on to an established market. Hypothesis testing (H2a, H2b, and H2c) supported this association. This with the exception of directional Lambda for H2b and a zero value for directional Lambda for H2c.

It was expected that national cultural differences would exist among managers in their time orientation. That is, the proportion of U.S. managers with a preference for future time orientation would be greater that the proportion of Brazilian managers with a future time orientation. Hypothesis testing of H3a supported this expectation.

It was expected that the proportion of U.S. managers with a future time orientation would be greater than the proportion of Japanese managers with preference for future time orientation. This was not supported; H03b could not be

rejected. In fact, the most unexpected result of the study was the relative preference for future time orientation of Japanese managers.

It was expected that the proportion of Brazilian managers with a preference for present time orientation would be greater than the proportion of U.S. managers with a preference for present time orientation. This was tested as H4 and support was found.

It was expected that the proportion of U.S. managers with a preference for the Prospector strategic choice would be greater that the proportion of Brazilian managers with a preference for the Prospector strategic choice. This was tested as H5 and support was found.

However, it was expected that a lower proportion of Japanese managers would have a preference for the Analyzer strategic choice than the proportion of Brazilian managers with a preference for the Analyzer strategic choice. That is, if Brazilian managers were relatively present time oriented and present time orientation was predicted to be associated with the Analyzer strategy choice, then one would expect Brazilian managers to be relatively more likely to prefer the Analyzer strategic choice. The high relative future time orientation of Japanese managers would presumably not be reflected in a preference for the Analyzer strategic choice, instead would be reflected in a preference for the Prospector strategic choice. This was tested as H6 and support was not found.

There was no statistically significant difference in preference for Analyzer strategic choice between Japanese and Brazilian managers, despite the difference in preference for time orientation between Japanese and Brazilian

managers. Thus, one may not rely solely upon nationality as a predictor of strategic choice. This result was somewhat unexpected because of the fact that nationality of managers was significantly correlated with strategic choice of managers. That is, the Chi-Square value was equal to 15.943 significant at .014. Again, this inconsistency may have been an artifact of the Japanese sample, but future research should re-visit this issue.

Hypothesis tests of H1a, H1b and H1c directly tested the association of future time orientation and strategic choice. H1a and H1b were supported. H1c was supported with the exception of directional Lambda.

H2a, H2b and H2c tested the association of past time orientation and strategic choice. H2a was supported. H2b was supported with the exception of directional Lambda. H2c was supported with the exception of an unusual result for directional Lambda, the value of which was zero. This type of result was addressed in Norusis (1996, p. 373) and was not cause for failure to support H2c.

The hypotheses H1a, H1b, H1c, H2a, H2b and H2c were concerned with the dependent relationship and the direction of the relationship, between time orientation and strategy choice. Taken together the hypotheses supported an influence relationship between national cultural work related value of time orientation and choice of strategy. The inconsistent directional Lambda results in two cases and the zero value in a third case were not explained by examining the data set. Future research using a different narrow matched sample and different occupations may clarify this inconsistency.

Sample Composition

The use of a matched sample process as an alternative to a random sample approach may have provided at least a partial solution to the issue of obtaining useable data; however, one can only be assured *ex post facto* that the sample was appropriately matched. That is, if one desired to have confidence in how well one matched a narrow sample such as U.S. managers of retail toy, gift and hobby shops and Brazilian managers of retail toy, gift, and hobby shops, then one would only have assurance after testing with another matched sample, such as U.S. policemen and Brazilian policemen. In such case, one could test not only for nationality effects but also for occupational effects and their possible interaction. "The quality of matching of narrow samples often can only be proven ex post facto; If the difference we find between cultures in one sample set, are confirmed by those found by others in other matched samples, our matched sample was adequate" (Hofstede, 1984, p. 30). For this reason, future research with a different narrow sample population is required. Such research could serve an additional purpose in terms of triangulation.

Frequencies

In the U.S. sample, composed of 43 subjects, about 65 percent of the managers were future oriented, 19 percent were present oriented and 16 percent were past oriented. In the Brazilian sample of 29 subjects, about 17 percent of

the managers were future oriented, 55 percent were present oriented and 28 percent were past oriented. In the Japanese sample, composed of 32 subjects, about 44 percent of the managers were future oriented, 25 percent were present oriented and 31 percent were past oriented.

With respect to strategy choice, the Japanese sample of managers was 28 percent Defender, 22 percent Analyzer, 41 percent Prospector and 9 percent Reactor. The U.S. sample of managers with respect to strategic choice was 33 percent defender, 7 percent Analyzer, 51 percent Prospector and 9 percent Reactor. The Brazilian sample of managers was 28 percent Defender, 35 percent Analyzer, 14 percent Prospector and 24 percent Reactor. The frequencies in the U.S. sample and Brazilian sample were largely as expected; however, the Japanese frequencies were not as expected. The large number of Japanese managers exhibiting a future time orientation was particularly unexpected.

Association

The Lambda test was applied to test dependence and direction with respect to time orientation and strategic choice. In the U.S. sample, with strategic choice dependent, both the Lambda and the Goodman and Kruskal tau tests supported the predicted association between time orientation and strategic choice.

For the Japanese sample, with time orientation dependent, the Lambda test did not support the predicted association and direction of the relationship

between the variables. The Goodman and Kruskal tau result was consistent with the predicted association. This was one of several instances in which the Japanese sample results differed from predicted results. It was also one of several instances in which the Lambda statistic was not consistent with the Goodman and Kruskal statistic.

For the Brazilian sample, with strategic choice dependent, both the Lambda and the Goodman and Kruskal tau test results, were consistent with the predicted association between time orientation and strategic choice.

The Brazilian and U.S. sample results were as expected. The Japanese sample result was not as expected. The direction of influence was from strategy to time orientation in the Japanese sample based upon Lambda, but in the predicted direction based upon Goodman and Kruskal tau. The test results were not consistent in the Japanese sample.

Correlation

For time orientation and strategic choice, the Spearman Correlations results for the U.S., Japanese and Brazilian samples supported a statistically significant relationship between the variables. For Consolidated Data, the Spearman Correlation value was equal to .479, significant at .000, also supporting the relationship between time orientation and strategic choice.

Partial Correlations

The partial correlation coefficients revealed that the predicted relationship between time orientation and choice of strategy was as expected (.4597, significant at .000). The partial correlations were controlled for nation, age, gender, occupation, industry, firm size and education based upon predicted influences observed in the literature. The Consolidated Data zero order partial correlation coefficient for strategy choice on time orientation was equal to .4847, significant at .000.

There were some other partial correlations that were significant. For example, strategy choice was negatively correlated with age. This was not unexpected. Thomas J. Cottle did say that age needed to be controlled for because one's sense of time may change with the aging process (Cottle, 1976).

Strategy and industry were correlated. This was consistent with the literature that indicated the need to control for industry in strategic studies. That is, a high tech industry may have a different strategy distribution than a low-tech industry (Miles and Snow, 1978, 1994).

Age and gender were negatively correlated. This may have been an artifact of the distribution of management characteristics among toy, gift and hobby retailers. As more females have entered the workplace in recent years the result may be that young females are joining older males in management of these retail businesses, hence the negative correlation.

It was less clear why nation and education would be negatively correlated. One could speculate that for the Japanese sample the older male respondents would be less educated than their younger counterparts who had elected to enter high technology employment. An alternate explanation in the U.S. sample is that U.S. respondents may have exaggerated their educational qualifications, an accusation often made in international circles, or that they reflected the trend to self-employment by second career or down-sized individuals. This does raise questions for future research.

Gender and education were significantly correlated. This was probably related to the fact the sample population was somewhat older and may have reflected past trends for females to receive less education than males.

Canonical Correlation

In the Brazilian sample the canonical structure matrix showed that time orientation had the largest absolute correlation and that Function One explained almost 45 percent of the variance in strategy choice. For the U.S. sample, the canonical structure matrix showed that time orientation had the largest absolute correlation and that Function One accounted for 79 percent of the variance in strategy choice.

The Japanese sample was different. Age had the highest absolute correlation and Function One accounted for 64 percent of the variance in strategy choice. Cottle stated that age was a significant factor in time orientation (Cottle,

1967). Further, age and time orientation were correlated significantly in the sample. Also, time orientation showed the second highest absolute correlation and Function Two accounted for an additional 27.8 percent of the variance in strategy choice in the Japanese sample. Nevertheless, the Japanese sample result differed from that predicted and from the results of both the U.S. and Brazilian samples.

For the consolidated data, the canonical correlation matrix showed that time orientation had the highest absolute correlation and that Function One accounted for 82 percent of the variance in strategy choice. Overall, the canonical correlation analysis results were consistent with the literature that suggested that time orientation should be an important influence (Barkema and Vermeulen, 1997).

Reliability

The literature offers many approaches to testing reliability. These include test-retest, split-half, multiple administrations of parallel tests, or tests of internal consistency, such as coefficient alpha (Cortina, 1973). For the purposes of this study, the split-half methodology was employed. The consolidated data were randomly assigned to Group A and Group B. Then two tests were applied, the T-test and the Mann-Whitney U test. The Mann-Whitney U test result showed z equal to -1.056, significant at .291. The T test value was -.051, significant at .959,

so the null hypothesis could not be rejected. Reliability was supported on the basis of the split-half test process.

Validity

The issue of validity was addressed through the use of triangulation. The Circles test results showed that U.S. managers had a primary preference for a future time orientation, the Japanese managers also had a primary preference for a future time orientation and the Brazilian managers had a preference for a present time orientation. These results were not entirely consistent with predicted results that were based largely upon the work of Hofstede and Reed (1994) as well as Trompenaars and Hampden-Turner (1998).

Hofstede's research showed that Japan was more long-term oriented (80) than Brazil (65) and the U.S. (29) as reported in Reed (1994). Reed's measure of long-term orientation was the marginal propensity to save. This was intended to capture conceptually much of Hofstede's long-term orientation, which focused on thrift, perseverance and a willingness to subordinate oneself for a purpose. Reed's measures for Japan (27.66), Brazil (22.45) and the U.S. (3) were consistent with Hofstede's in reflecting differences in the magnitude and order of long-term orientation across the three countries. That is, time orientation as measured by long-term versus short-term, differed across the three countries, with the U.S. and Japan at opposite poles and Brazil in between.

Both Hofstede and Read conducted their studies more than a decade ago. Cultural values have been considered to be generally stable over time, so one must be careful when suggesting that Japan's time orientation may have converged toward Western time orientation, particularly in so brief a time period. Nevertheless, the result for Japan in the present study was inconsistent with previous studies of Hofstede (1997) and Reed (1994) because of the unexpected future time orientation in the Japanese sample. That is, Japan and the U.S. were not at extremes with Brazil in between. Japan was more closely aligned with the U.S. in terms of future time orientation than was expected.

Trompenaars and Hampden-Turner (1998, p. 130) showed results of the Circles test for a U.S. sample, which reflected a primary preference for future time orientation, a secondary preference for a present time orientation and a tertiary preference for a past time orientation. For a Japanese sample, future time orientation and present time orientation were almost equal and past time orientation was least preferred. The U.S. results of the present study were consistent with the U.S. sample of Trompenaars and Hampden-Turner (1998). However, study results for Japan were not entirely consistent with the Japanese results from Trompenaars and Hampden-Turner (1998). That is, present time orientation and future time orientation were almost indistinguishable in the Trompenaars and Hampden-Turner (1998) result, but future time orientation was clearly preferred in the present study, with past time orientation next and present time orientation least preferred. Unfortunately, a Brazilian sample of the Cottle Circles Test was not reported in the Trompenaars and Hampden-Turner (1998)

study, triangulation with respect to Trompenaars and Hampden-Turner (1998) is not complete.

Nevertheless, to the extent that these separate conceptualizations and measures of time orientation by Hofstede (1997), Reed (1994), Trompenaars and Hampden-Turner (1998) showed distinct time orientation differences among the three counties of interest, the results were consistent with the results of the present study, which also found differences in time orientation among Japanese, Brazilian and U.S. managers. The results of the present study with respect to Japan require further exploration due to inconsistencies in the results versus those of Hofstede (1997), Reed (1994) and to a lesser extent Trompenaars and Hampden-Turner (1998).

Nationality and Time Orientation

As reflected in Table 2 on page 61, the relationship between nation of origin and time orientation was examined. For the purpose of analysis it was necessary to eliminate six cases to reduce the cross-tabulation to a size in which no cells had an expected count of less than five. That is, six cases involving subjects from countries other than Japan, Brazil or the U.S. were eliminated. In this analysis the Pearson Chi-Square was equal to 9.274, significant at .055, so rejecting the null hypothesis was not possible at the .05 level. However, the Likelihood Ratio was 9.744, significant at .045. Also, Lambda was .145. Approximate T was equal to 2.042, significant at .041. The Goodman and

Kruskal Tau was .056, significant at .029. So analysis supports rejection of the null hypothesis and some support for the linkage between national culture and time orientation. That is, interpreting the Lambda statistic indicates that one could reduce the error of their prediction of time orientation by about 14 percent by knowing national origin. In the present context, this of course assumes that the sample of managers of retail gift, toy and hobby shops have a time orientation that does not differ from the national time orientation of the home country. Future matched sample studies in different industries and occupations could assist in confirming this result.

Conclusions

Research Question

The research question was: "Does the national cultural work-related value of time orientation influence managers choice of strategic type?" The answer in one word is "yes"; however, it must remain a qualified "yes." The hypotheses tested supported time orientation as a significant influence upon strategy choice by managers.

However, the study raised many issues that require future exploration. Further, there were significant limitations to the research. The research limitations and some research issues are addressed in the following sections.

Process

Overall, the design of this research was consistent with the Process Model for Cross-cultural Research presented by Cavusgil and Das (1997). The first and most important step in the process was selection of a relevant dependent organizational variable. This was followed by the choice of a theory-driven predictor cultural variable. Based upon a review of the literature, this study was consistent with the process model. That is, a relevant organizational problem was identified and the dependent variable was selected. The independent variable chosen was theory-driven.

The second step in the process involved acquisition and application of substantive knowledge about the conceptual and functional equivalence of the constructs. Cavusgil and Das (1997) suggested use of the literature as well as inter-cultural researcher collaboration. This step was only partially achieved because collaboration was not undertaken, only the literature was relied upon.

The third step involved the creation of an effective and cost-efficient sampling design. Cavusgil and Das (1997) recognized that sampling design involved a trade-off between cost and time considerations on the one hand and problems of randomization and generalizability on the other. The present sample design relied upon Hofstede's suggested use of narrow matched samples in the absence of the ability to conduct a true random study. This clearly limited the ability to generalize from the study.

The fourth step concerned instrument design, and suggested the use of validated scales where they existed. Also, the issue of language equivalency was considered. Instruments existed to measure both time orientation and strategic choice; however, they had never been used jointly. A pre-test of the proposed combined instrument, to rule out undesired interaction, supported use of the combination of the previously developed measures for strategic choice and time orientation. The language equivalency issue was not resolved and remains for future research efforts.

The fifth step concerned concurrency of data collection. Also, emphasis upon the subject dimension was required. The data collection was concurrent. But, the subject dimension turned out to be problematic to the extent that the sample contained both owners and managers. Although testing indicated no significant difference in the responses of owners versus managers, this was potentially troublesome.

The sixth step was data analysis. Although emphasis was placed by Cavusgil and Das (1997) upon the use of ratio and interval scales, factor analysis and multivariate analysis methods, the nature of the independent variable and the dependent variable precluded such approaches. Nevertheless, there was no lack of sufficient data analysis tools. SPSS, version 10.1 was employed in the data analysis, which included Chi-Square, Lambda, Lambda directional, Cannonical Correlation Analysis and tests of means and medians. Therefore, causal relationships were tested, consistent with recommendations in the

literature (Alrick and Settle, 1985 Babbie, 1995; Hair, Anderson, Tatham and Black, 1995; Norusis, 1996).

The seventh step focused on data interpretation. An initial inspection of the data, particularly the frequencies, might have lead one to believe that the interpretation would be straightforward and relatively transparent. This would be a false impression. As Cavusgil and Das (1997) pointed out, any conclusions regarding causality should fulfil Mills threefold criteria of covariation, temporal precedence and the absence of alternative explanation. Here, association and correlation measures addressed the first criteria; however, temporal precedence and alternative explanations remained thorny issues. Other national cultural work-related values, such as uncertainty avoidance, could not be ruled-out as possible alternative explanations. Further, other exogenous influences such as history and geography were not controlled for. At this point, support for causality rested solely upon the fact that the manager's preferences for strategic choice were generally consistent with those predicted by theory in this exploratory study.

Therefore, despite efforts to follow a rigorous process, due to constraints in cost, time and resources, there remained limitations to the study that deserved some elaboration. These limitations were in several domains, specifically, country selection, non-response bias, single variable measures, self-reporting, respondent composition, questionnaire language/ functional equivalence, and data collection.

Country Selection

In retrospect it is clear that the choice of Japan as representative of Eastern cultures was not fortuitous. Cultural convergence due to globalization and technology may have caused Japan to shift toward a more Western or future time orientation. The previous work of Franke, Hofstede and Bond (1991) and Reed (1994) did not alert the researcher to this possibility since their work suggested a long-term time orientation with emphasis on thrift. This would seem to suggest a traditional mind set and consistency with a past time oriented culture. Also, Doob (1971) had suggested that Japan, Korea and China would be past time oriented. Although Trompenaars and Hampden-Turner (1998) suggested that there was some ambiguity in the Circles Test results from Japan -- half of the respondents drew concentric circles -- the relatively greater preference for future time orientation was not predicted. This unexpected result encouraged two lines of reasoning. First, an alternative choice should be made for a representative of Eastern culture. Suitable candidates for future studies are Korea, Taiwan and Indonesia. Second, a broader study should be undertaken in Japan, which will include different industries and provide for qualitative as well as quantitative approaches. The Japanese results clearly call for additional research in that country as well as consideration of alternative country choices for future research. The selection of the U.S. and Brazil appear to be satisfactory and fit the predicted response patterns.

Non-Response Bias

Non-response bias may have been a problem. A test of the early questionnaire returns versus the late returns suggested possible non-response bias. The early responders on strategy choice were statistically different from the late responders. This was troubling because the proportion of Prospectors in the current research was somewhat higher than might be expected. So the issue of non-response bias on strategic choice data is potentially problematic. However, the late responders and early responders on time orientation were not statistically different. Future research should focus upon sample frames in which higher rates of return might result in less potential for non-response bias. If solutions can be found for the economic and logistic limitations of the present study, future research design should consider the techniques described in Dillman (1978) for a mail-out survey. Collaboration with researchers in each country of interest can result in both the reduction of non-response bias through more efficient and effective data collection and increases in functional equivalence. Thus, future research should strive for collaboration among researchers.

Single Variable Measures

Although single measures have been defended, their limitations are understood (Nunnally, 1978). That is, the more complex the construct, the less viable are single measures. Therefore, reliance upon a single measure of time

orientation limits the confidence one may place in the validity of the study. Future studies should consider more than one measure, for example, operationalized measures of Hall's m-time and p-time. Better might be the use of Trompenaars' methods beyond the Circles test that, unfortunately, to this time have not been shared in detail (Hofstede, 1996; Hampden-Turner and Trompenaars, 1997).

The same comment about the limits of single measures applies to the single measure of strategy choice. Just as in the case of time orientation, efforts have been made to develop additional measures for strategy choice. For example, Conant, Mokwa and Varadarajan (1990) proposed a multi-item scale for operationalizing Miles and Snow (1978). Although practical constraints limited the length of questionnaire for this study, future studies should consider multiple measures of constructs. Even the use of an alternative typology is worthy of consideration.

It would be beneficial to measure strategic choice and time orientation in alternative ways and then to compare the results with those of the present study. One would have much greater confidence in the results if there were convergence in outcomes produced from two alternative approaches to the same conceptual issue.

Self-Reporting

Self-reporting has some critics. How does the researcher know that the respondent knows what is meant by a "reactor" for example? Conant, Mokwa

and Varadarajan (1990) state that the self-reporting approach has been acknowledged as an appropriate method to employ when conducting strategy research, i.e., Snow and Hambrick (1980), Harrrigan (1983), Huber and Power (1985), Dess and Davis (1984) and Smith et al. (1986). A detailed discussion of the strengths and limitations of four different approaches to measuring strategic choice found in Snow and Hambrick (1980) supports self-reporting. Still, one would have greater confidence in the results if alternative studies relying on different measurement approaches produced similar outcomes. For example, future research designs might consider objective measures as well as self reporting.

Respondent Composition

Some concern developed with respect to the appropriateness of using a manager as opposed to the owner to complete the questionnaire. Cavusgil and Das (1997) refer to this problem as the "subject dimension." They pointed out that data accuracy is usually the first casualty of subject bias. This raises the question, "Would a manager have or express the same understanding of the firm's strategic choice as the owner?" Since both owners and managers were respondents, a test was made to determine if there was a difference between the strategic choices of managers and the strategic choices of owners who participated in the study. Cross-tabulation suggested no difference. For strategy choice the Kruskal-Wallis Chi Square statistic was not significant (.320) and the

Independent Samples T-Test was not significant (.307). For time orientation the Kruskal-Wallis Chi Square was not significant (.601) and the Independent Samples T-Test was not significant (.665). Therefore, it was concluded that inclusion of owners and managers of the relatively small businesses in the study was not problematic. Nevertheless, one must exercise care in projecting from this study and future studies should pay attention to the suitability of respondents completing the questionnaire.

Questionnaire Language/ Functional Equivalence

Choice of the English language for the questionnaire raised several issues, despite the fact that the researcher was advised that the study managers were primarily retailers in metropolitan areas and were fluent in English (Canamara, 2000). The fact remained that for both the Japanese and the Brazilian managers, English was a second language. Managers or other informants, who were non-native English speakers, although they appeared to have a good command of English, still had their world-view shaped in part by their native language. In this context, it is useful to recall that both Hofstede (1984) and Usunier (1998) commented upon the Whorf-Sapir hypothesis, which stated that the structure of language had a significant influence upon both perception and categorization. In this sense, linguistic ethnocentrism is largely inevitable. Therefore, translation can instill a false sense of security by generating a false verbal equivalence (Usunier, 1998).

In cross-cultural research there have been and always will be issues of equivalence (Usunier, 1998, pp. 106-113). Simply translating, including parallel translation and back translation, does not guarantee solution of the equivalence issue. For example, a bicycle in China is a means of transportation; in the U.S. a bicycle is a recreational device. Simply accurately translating "bicycle" does not solve the functional equivalence issue. A better solution to the language and equivalence issues was suggested by Campbell and Werner (1970), in which collaborators across the relevant cultures jointly developed survey materials (Usunier, 1998).

Future research should address these issues, probably by enlisting the aide of researchers from each country of interest, jointly participating in the development of functionally equivalent instruments, paying attention to the language translation as well. Such an approach, including pre-testing, would be consistent with the advice of Usunier (1998, pp. 49-58).

Data Collection

Because of the methodology used in obtaining the sample data, that is reliance upon an intermediary and having had only one follow-up request made for completion of the surveys, there were legitimate concerns with respect to data collection. Under ideal conditions, one would prefer direct access to respondents and two rounds of follow-up requests for instrument completion. Since the follow-

up request resulted in only twelve questionnaires returned, a third request was not expected to have significantly altered the outcome regarding sample size.

Cavusgil and Das (1997) suggested methods to mitigate these difficulties. These methods included the use of local administrators, concealing the true origin of the research (if ethically permissible), application of multiple measures, and reverse coding of items to counteract response bias from subjects in the data collection process. Future research should consider these issues in research design.

Generalization

Because of the limitations in sample size, industry surveyed, response rate and possible non-response bias, as well as the other research limitations mentioned, one should be cautious in generalizing the results of the study. Miles and Snow studied four different industries in their research because they understood that industry differences might influence outcomes (Miles and Snow, 1978). Therefore, future research should be conducted using larger samples across more countries in more than one industry to sharpen insights into the relationship between time orientation and strategic choice by managers.

Research Implications

The research results imply the need for future research. For example,

the issue of non-response bias calls for additional research. That is, in the present study the late sample for strategic choice was different from the early sample, suggesting that managers who replied late or not at all might be different from managers who responded promptly. While there was no significant difference between early and late responders regarding time orientation, the result for strategic choice considered in light of the less than ten percent response rate indicates a potential problem. This should be addressed in future research.

Use of a narrow matched sample raises the requirement for future research that includes another narrow matched sample drawn from a different industry. This becomes necessary since one only knows *ex post facto* how well one has matched samples through comparison of results from different matched samples (Hofstede, 1984). This is a validity issue.

The study sample frame was 1382 managers of retail toy, gift and hobby shops (SIC 5945). One could argue that since not all firms in SIC 5945 were included in the study sample frame, that this constituted a sample frame error. Sample frame errors may result in systematic differences resulting from differences between the subjects included and those excluded. In future studies care should be taken to be as inclusive as feasible in designing the sample frame to avoid this potential source of error.

Country selection is of concern for at least two reasons. First, studies of 2 or 3 cultures should only be considered pilot studies because there are insufficient cultures to randomize the variance on non-matched cultural variables

and eliminate distracting hypotheses (Cavusgil and Das, 1997). Hofstede (1984) also pointed out the need for a sufficient number of cultures in comparative studies. Yet, Hofstede (1984) and Cavusgil and Das (1997) readily recognized that practical constraints influenced researcher's behaviors and their research options.

The second issue was also apparent in this study, that is, the selection of national cultures presumed to be different along the dimensions of interest. Here, Japan was chosen based upon a review of the literature, yet the choice resulted in outcomes, which were not easily explained. Future studies should incorporate a larger number of cultures. Care should be exercised to include both Japan and at least one additional Eastern culture so that greater understanding of differences in time orientation across cultures may be developed.

The breadth of cultural dimensions considered deserves further consideration. Hofstede's updated questionnaire (VSM 94) includes long-term versus short-term time orientation as well as the previous four well-known culture dimensions. By using this instrument, which has already been tested and validated, one could explore the interaction of the dependent variable with the original four culture dimensions of Hofstede. In addition, one would benefit by measuring time orientation from a different operational viewpoint than the Cottle (1967) approach used in the present research. An added benefit would be the elimination of the single measure problem, at least with respect to time orientation. Since there are significant costs attached to such an approach, the cost factor would need to be considered when planning future research designs.

With respect to the single measure issue, it would appear prudent to pursue development of multi-item measures of strategic choice. This could include either up-dates of earlier efforts such as those of Conant, Mokwa and Varadarajan (1990) or development of new measures of an alternate typology.

The use of students for alternative triangulation should be considered. Hofstede and others have defended the use of students in cross-cultural research. They point out that as long as the samples are matched on other significant variables, the variations noted between the national samples may be attributed to national cultural differences. An excellent example of this is the Michael Hoppe (1990) dissertation. Therefore, it does not matter whether one samples teachers, students or others. Ideally, when one is interested in the behavior of managers specifically then one should sample managers. The future use of adult students of business schools would seem logical for triangulation purposes, particularly where the students are mid-career managers. Therefore, such studies which include mid-career business students from Taiwan, the U.S. and Brazil should be considered.

Summary of the Study

The purpose of this study was to incrementally increase the understanding of the influence of culture upon human behavior. Specifically, the goal was to explore the relationship between managers' national cultural work-related time orientation values and the strategic choices made by managers. The worth of

such knowledge is that it reduces uncertainty in understanding human behavior, particularly with regard to strategic choice. This knowledge is potentially useful to organizational stakeholders because strategic choices have profound effects upon organizational outcomes.

In this study, hypothesized relationships between time orientation and strategic choice were tested. Support was generally found for the hypothesized influence of time orientation upon the strategic choice by managers. Knowing the time orientation increased ones ability to predict strategic choice. Predicted correlations and associations between the dependent variable (strategic choice) and the independent variable (time orientation) were statistically significant for H1a, H1b, H1c, H2a, H2b, and H2c, with the previously noted directional Lambda exceptions.

There were significant differences in time orientation and strategic choice among the managers in the three countries in the study. U.S. managers in this study were relatively more future oriented and they did exhibit a preference for the Prospector strategic choice. Brazilian managers were relatively more present oriented and did exhibit a preference for Analyzer strategic choice. However, Japanese managers were unexpectedly more future oriented than predicted and consequently the preferred strategic choice was not Defender as predicted.

Although it is tempting to conclude, based upon the research, that manager's national cultural work-related value of time orientation influences strategic choice in predictable ways, such a conclusion would be premature because of the many limitations of the research and the unexpected findings in

the Japanese sample. The use of a narrow matched sample, limited sample size, single measures of variables, non-response bias, as well as the data collection method employed severely limited the ability to generalize from the study.

In conclusion, while this exploratory study suggests support for the influence of time orientation upon the strategic choice of managers, the more power that is brought to bear on the problem of understanding the relationship, the greater confidence one may have in gaining real understanding. That is, consistent with the advice of Hofstede (1984), Bhawuk and Triandis (1996), Cavusgil and Das (1997), larger samples across more cultures involving more than one methodology are more likely to produce robust results that are valid, reliable and generalizable.

APPENDIX A

Data -- Consolidated

Frequency Table (Consolidated Data)

TO1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Past	25	24.0	24.0	24.0
	Present	32	30.8	30.8	54.8
	Future	47	45.2	45.2	100.0
	Total	104	100.0	100.0	

STG

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Defender	31	29.8	29.8	29.8
	Analyzer	20	19.2	19.2	49.0
	Prospector	39	37.5	37.5	86.5
	Reactor	14	13.5	13.5	100.0
	Total	104	100.0	100.0	

Nation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	USA	44	42.3	42.3	42.3
	Brazil	22	21.2	21.2	63.5
	Japan	32	30.8	30.8	94.2
	4.00	1	1.0	1.0	95.2
	5.00	2	1.9	1.9	97.1
	6.00	3	2.9	2.9	100.0
	Total	104	100.0	100.0	

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	79	76.0	76.0	76.0
	Female	25	24.0	24.0	100.0
	Total	104	100.0	100.0	

Occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Manager	45	43.3	43.3	43.3
	Owner	42	40.4	40.4	83.7
	Sales	10	9.6	9.6	93.3
	Technical	5	4.8	4.8	98.1
	5.00	2	1.9	1.9	100.0
	Total	104	100.0	100.0	

Industry

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Retail	69	66.3	66.3	66.3
	Manufacturing	21	20.2	20.2	86.5
	Wholesale	11	10.6	10.6	97.1
	Service	3	2.9	2.9	100.0
	Total	104	100.0	100.0	

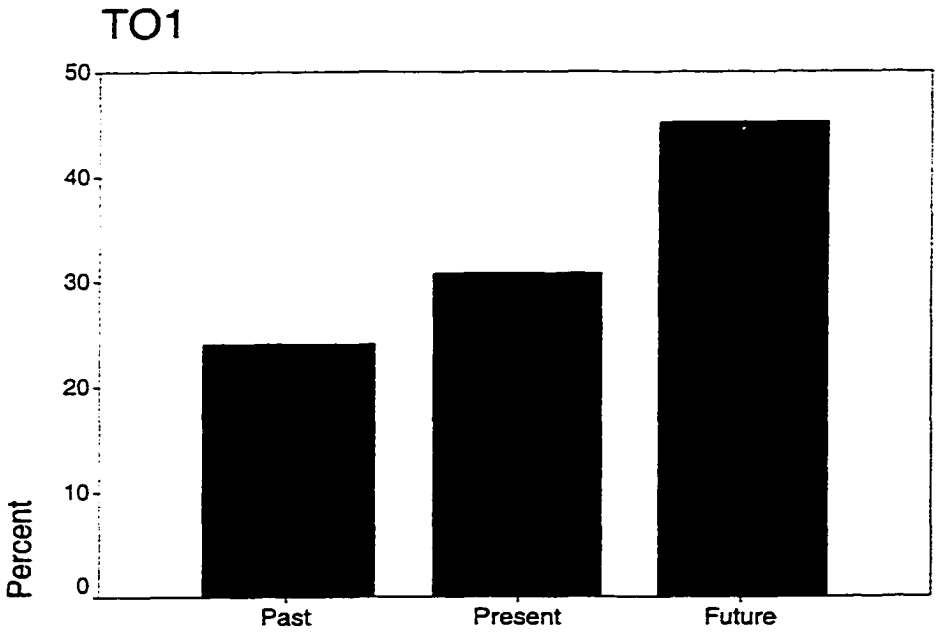
Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	HighSchool	46	44.2	44.2	44.2
	College	25	24.0	24.0	68.3
	CollegeGrad	19	18.3	18.3	86.5
	GraduateSchool	14	13.5	13.5	100.0
	Total	104	100.0	100.0	

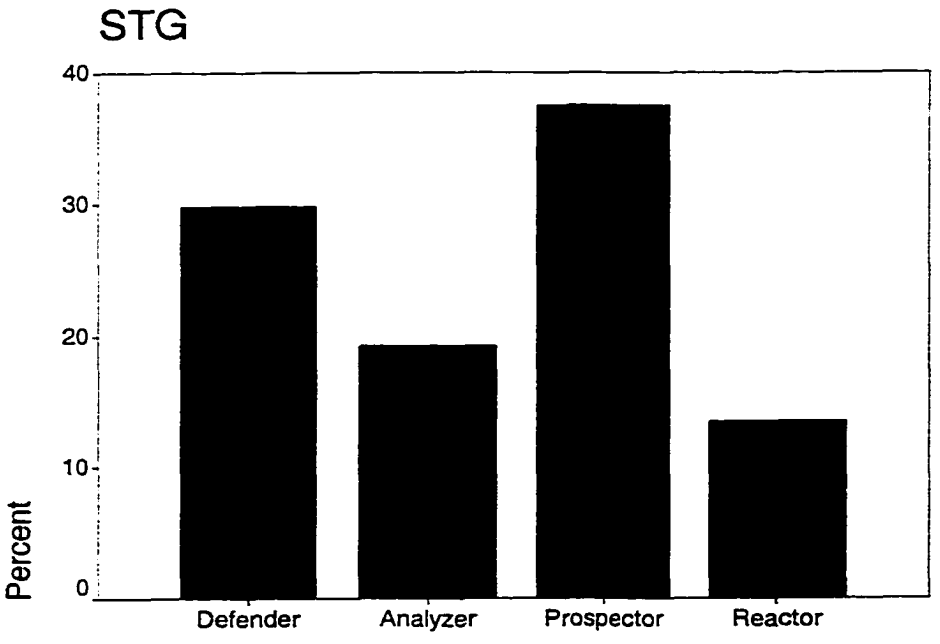
Age (C)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	21 to 30	4	3.8	3.8	3.8
	31 to 40	19	18.3	18.3	22.1
	41 to 50	35	33.7	33.7	55.8
	51 to 60	23	22.1	22.1	77.9
	Over 60	23	22.1	22.1	100.0
	Total	104	100.0	100.0	

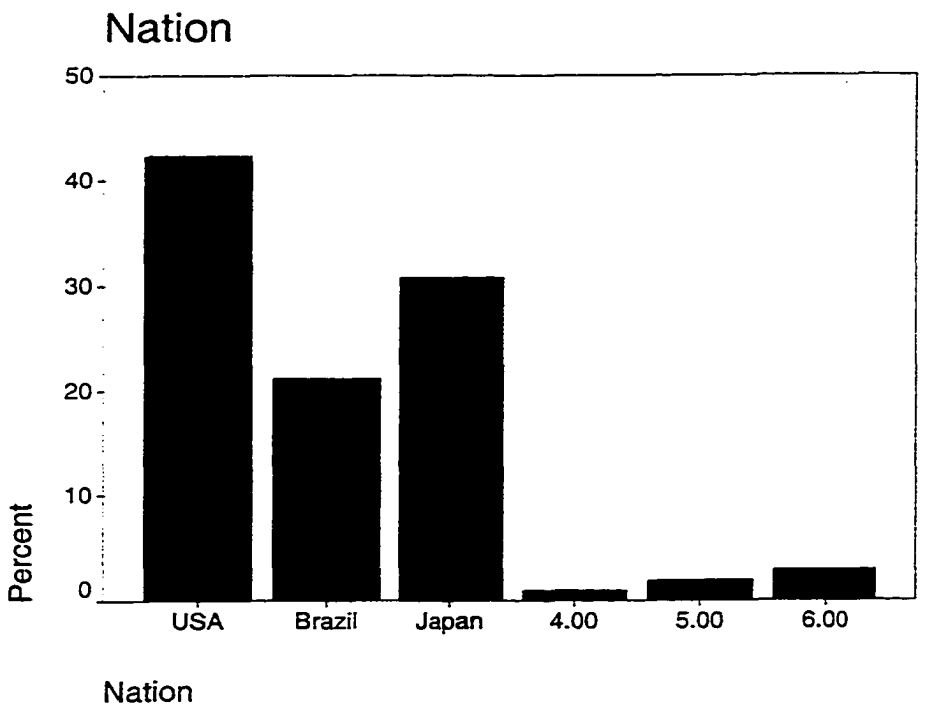
Bar Chart (Consolidated Data)

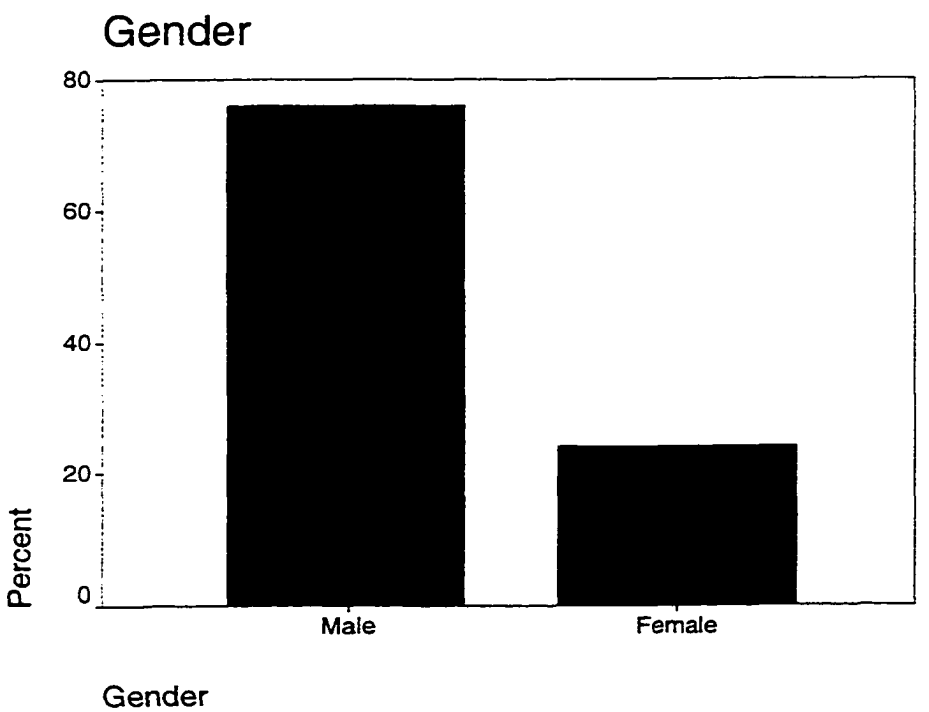


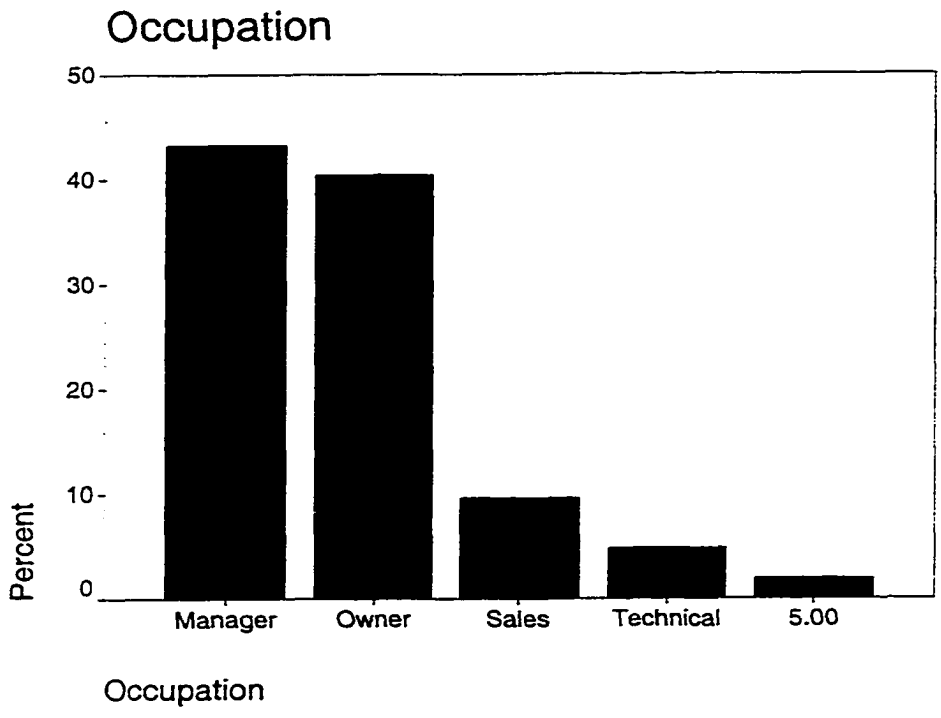
TO1

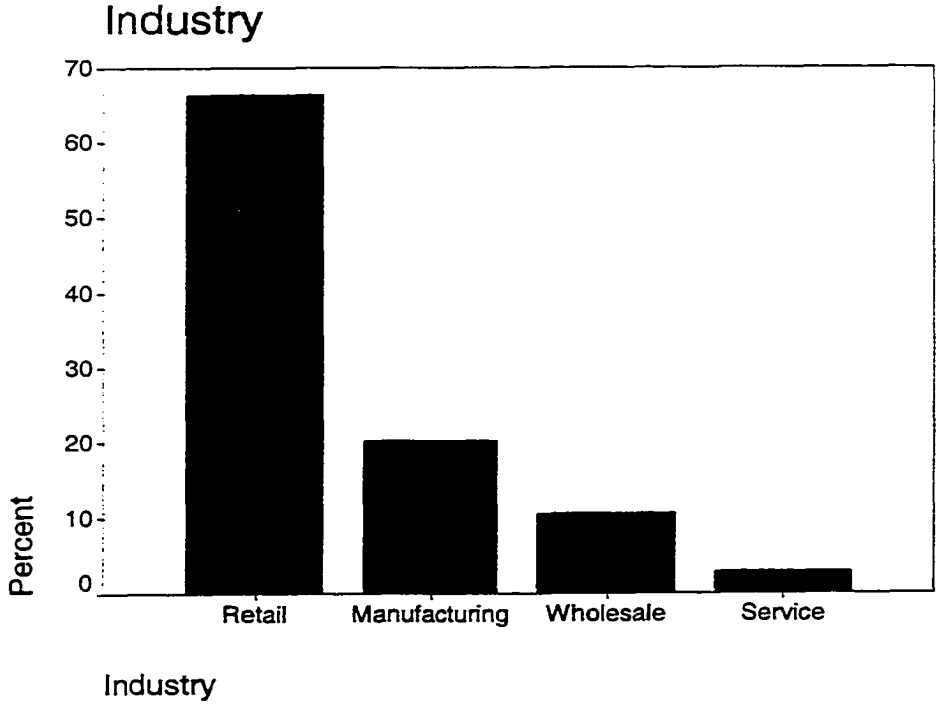


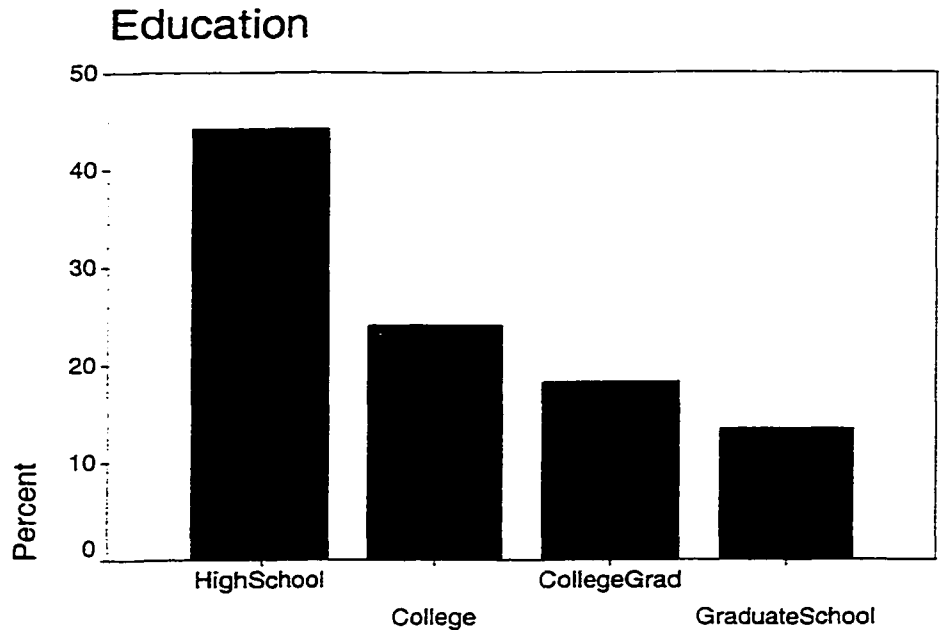
STG

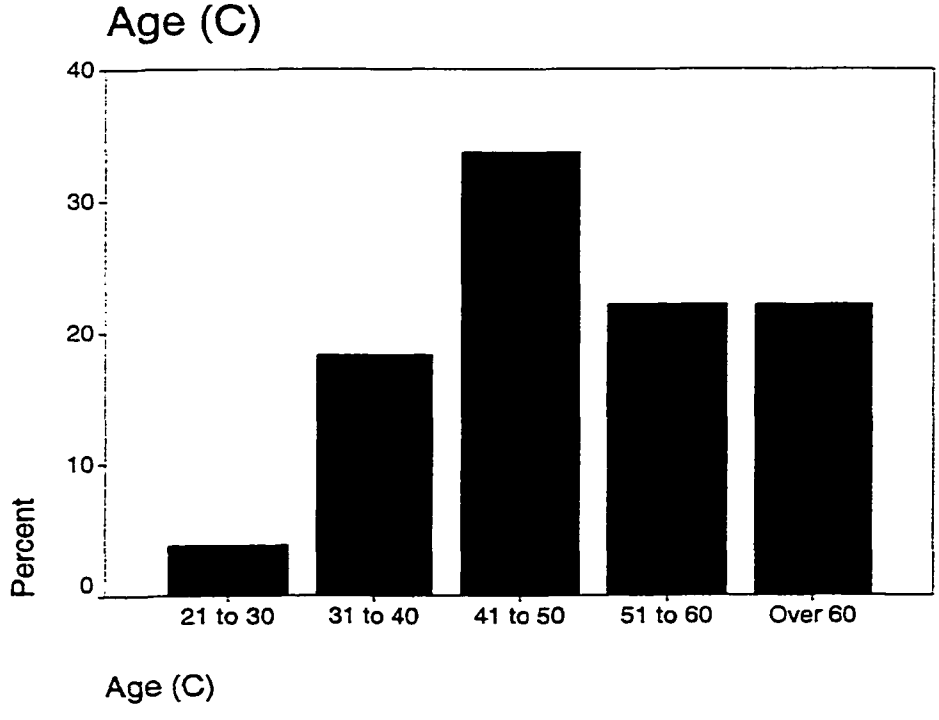












Consolidated Data
Crosstabulation, Chi-Squre, and Lambda

TO1 * STG Crosstabulation

Count

		STG				
		Defender	Analyzer	Prospector	Reactor	Total
TO1	Past	19	2	2	2	25
	Present	6	15	4	7	32
	Future	6	3	33	5	47
Total		31	20	39	14	104

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	69.240[a]	6	.000
Likelihood Ratio	65.219	6	.000
Linear-by-Linear Association	24.199	1	.000
N of Valid Cases	104		

a. 3 cells (25.0%) have expected count less than 5. The minimum expected count is 3.37.

Directional Measures

			Value	Asymp. Std. Error[a]
Nominal by Nominal	Lambda	Symmetric	.451	.078
		TO1 Dependent	.474	.094
		STG Dependent	.431	.073
	Goodman and Kruskal tau	TO1 Dependent	.340	.073
		STG Dependent	.271	.061

Directional Measures

			Approx. T[b]	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	4.753	.000
		TO1 Dependent	3.898	.000
		STG Dependent	4.914	.000
	Goodman and Kruskal tau	TO1 Dependent		.000[c]
		STG Dependent		.000[c]

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on chi-square approximation

Symmetric Measures

		Value	Asymp. Std. Error[a]
Interval by Interval	Pearson's R	.485	.088
Ordinal by Ordinal	Spearman Correlation	.479	.092
N of Valid Cases		104	

Symmetric Measures

		Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	5.597	.000[c]
Ordinal by Ordinal	Spearman Correlation	5.505	.000[c]
N of Valid Cases			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Kruskal-Wallis Test (Consolidated Data)

Ranks

	STG	N	Mean Rank
TO1	Defender	31	31.68
	Analyzer	20	44.58
	Prospector	39	73.46
	Reactor	14	51.54
	Total	104	

Test Statistics[a,b]

	TO1
Chi-Square	40.469
df	3
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: STG

Median Test (Consolidated Data)

Frequencies

		STG			
		Defender	Analyzer	Prospector	Reactor
TO1	> Median	6	3	33	5
	<= Median	25	17	6	9

Test Statistics[b]

	TO1
N	104
Median	2.0000
Chi-Square	40.695[a]
df	3
Asymp. Sig.	.000

a. 0 cells (.0%) have expected frequencies less than 5.

b. Grouping Variable: STG

Discriminant Analysis (Consolidated Data)

Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
TO1	.612	21.135	3	100	.000
Nation	.981	.653	3	100	.583
Gender	.987	.432	3	100	.730
Occupation	.988	.399	3	100	.754
Industry	.938	2.197	3	100	.093
Ind Size	.978	.757	3	100	.521
Education	.912	3.223	3	100	.026
Age (C)	.961	1.360	3	100	.259

Box's Test of Equality of Covariance Matrices

Log Determinants

STG	Rank	Log Determinant
Defender	8	-4.541
Analyzer	8	-9.576
Prospector	8	-3.794
Reactor	8	-7.027
Pooled within-groups	8	-3.929

Test Results

Box's M		160.778
F	Approx.	1.222
	df1	108
	df2	8794.330
	Sig.	.060

Tests null hypothesis of equal population covariance matrices.

Summary of Canonical Discriminant Functions

Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.747[a]	82.0	82.0	.654
2	.102[a]	11.2	93.2	.305
3	.062[a]	6.8	100.0	.241

a. First 3 canonical discriminant functions were used in the analysis.

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1 through 3	.489	69.379	24	.000
2 through 3	.854	15.263	14	.360
3	.942	5.813	6	.444

Standardized Canonical Discriminant Function Coefficients

	Function		
	1	2	3
TO1	.947	-.244	.223
Nation	.146	-.016	-.056
Gender	.082	-.018	.281
Occupation	.294	-.003	.254
Industry	.215	-.116	-.776
Ind Size	.154	.452	.126
Education	.116	.993	-.060
Age (C)	-.060	-.094	.502

Structure Matrix

	Function		
	1	2	3
TO1	.920*	-.108	.081
Education	.163	.867*	-.035
Nation	.019	-.435*	.007
Gender	.041	.271*	.262
Ind Size	.156	.209*	.032
Industry	.200	-.022	-.764*
Age (C)	-.185	-.147	.460*
Occupation	.089	.024	.312*

*. Largest absolute correlation between each variable and any discriminant function

Variables ordered by absolute size of correlation within function.

Canonical Discriminant Function Coefficients

	Function		
	1	2	3
TO1	1.474	-.381	.347
Nation	.123	-.014	-.047
Gender	.189	-.040	.650
Occupation	.312	-.004	.270
Industry	.273	-.147	-.986
Ind Size	.238	.697	.195
Education	.110	.945	-.057
Age (C)	-.053	-.083	.444
(Constant)	-5.167	-1.713	-2.697

Unstandardized coefficients

Classification Statistics (Consolidated Data)

Classification Function Coefficients

	STG			
	Defender	Analyzer	Prospector	Reactor
TO1	5.087	6.481	8.158	6.656
Nation	3.692	3.775	3.941	3.858
Gender	6.413	6.729	6.835	6.248
Occupation	2.923	3.202	3.572	3.095
Industry	2.246	2.318	2.775	3.206
Ind Size	5.704	5.334	6.094	5.446
Education	3.761	3.040	3.843	3.379
Age (C)	4.233	4.371	4.158	3.959
(Constant)	-35.866	-38.247	-46.186	-38.389

Fisher's linear discriminant functions

Partial Correlation Coefficients (Zero Order)

--- PARTIAL CORRELATION COEFFICIENTS ---

Zero Order Partials

	VAR00001	VAR00004	VAR00005	VAR00013	VAR00007	VAR00008	VAR00009	VAR00010	VAR00011
VAR00001	1.0000 (0) P= .	.4847 (102) P= .000	-.0171 (102) P= .863	-.1995 (102) P= .042	-.0081 (102) P= .935	-.0770 (102) P= .437	.1200 (102) P= .225	.0950 (102) P= .337	.1638 (102) P= .097
VAR00004	.4847 (102) P= .000	1.0000 (0) P= .	.0563 (102) P= .570	-.1671 (102) P= .090	-.0356 (102) P= .720	.0156 (102) P= .875	.2310 (102) P= .018	.0781 (102) P= .430	.0226 (102) P= .820
VAR00005	-.0171 (102) P= .863	.0563 (102) P= .570	1.0000 (0) P= .	-.0017 (102) P= .987	-.2459 (102) P= .012	.0654 (102) P= .510	-.1327 (102) P= .179	-.0788 (102) P= .427	-.4304 (102) P= .000
VAR00013	-.1995 (102) P= .042	-.1671 (102) P= .090	-.0017 (102) P= .987	1.0000 (0) P= .	-.0019 (102) P= .985	.0520 (102) P= .600	-.0213 (102) P= .830	-.0920 (102) P= .353	-.0820 (102) P= .408
VAR00007	-.0081 (102) P= .935	-.0356 (102) P= .720	-.2459 (102) P= .012	-.0019 (102) P= .985	1.0000 (0) P= .	-.1075 (102) P= .277	.0141 (102) P= .887	.2590 (102) P= .008	.1827 (102) P= .063
VAR00008	-.0770 (102) P= .437	.0156 (102) P= .875	.0654 (102) P= .510	.0520 (102) P= .600	-.1075 (102) P= .277	1.0000 (0) P= .	-.1496 (102) P= .130	-.1100 (102) P= .266	.0402 (102) P= .685
VAR00009	.1200 (102) P= .225	.2310 (102) P= .018	-.1327 (102) P= .179	-.0213 (102) P= .830	.0141 (102) P= .887	-.1496 (102) P= .130	1.0000 (0) P= .	.1689 (102) P= .087	.0504 (102) P= .612
VAR00010	.0950 (102) P= .337	.0781 (102) P= .430	-.0788 (102) P= .427	-.0920 (102) P= .353	.2590 (102) P= .008	-.1100 (102) P= .266	.1689 (102) P= .087	1.0000 (0) P= .	-.1788 (102) P= .069
VAR00011	.1638 (102) P= .097	.0226 (102) P= .820	-.4304 (102) P= .000	-.0820 (102) P= .408	.1827 (102) P= .063	.0402 (102) P= .685	.0504 (102) P= .612	-.1788 (102) P= .069	1.0000 (0) P= .

(Coefficient / (D.F.) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

Partial Correlation Coefficients

- - - P A R T I A L C O R R E L A T I O N C O E F F I C I E N T

Controlling for.. VAR00005 VAR00013 VAR00007 VAR00008 VAR00009
VAR00011

	VAR00001	VAR00004
VAR00001	1.0000 (0) P= .	.4597 (95) P= .000
VAR00004	.4597 (95) P= .000	1.0000 (0) P= .

(Coefficient / (D.F.) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

APPENDIX B

Data -- U.S. SAMPLE

Frequency Table (U.S. Sample)

TO1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Past	7	16.3	16.3	16.3
	Present	8	18.6	18.6	34.9
	Future	28	65.1	65.1	100.0
	Total	43	100.0	100.0	

STG

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Defender	14	32.6	32.6	32.6
	Analyzer	3	7.0	7.0	39.5
	Prospector	22	51.2	51.2	90.7
	Reactor	4	9.3	9.3	100.0
	Total	43	100.0	100.0	

Nation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	USA	39	90.7	90.7	90.7
	Japan	2	4.7	4.7	95.3
	4.00	1	2.3	2.3	97.7
	6.00	1	2.3	2.3	100.0
	Total	43	100.0	100.0	

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	28	65.1	65.1	65.1
	Female	15	34.9	34.9	100.0
	Total	43	100.0	100.0	

Frequency Table (U.S. Sample)

TO1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Past	7	16.3	16.3	16.3
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	Reactor	4	9.3	9.3	100.0
	Total	43	100.0	100.0	

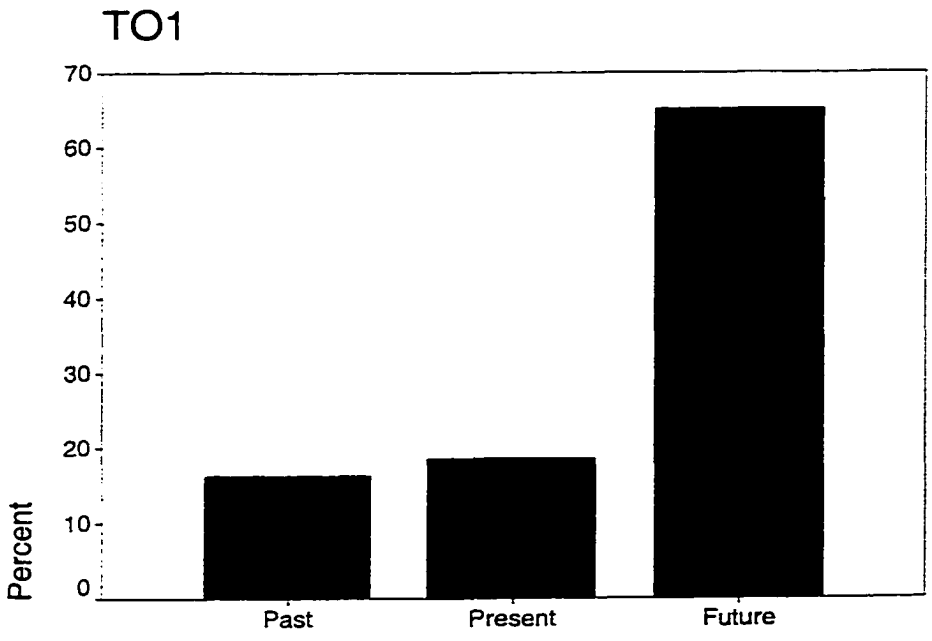
Nation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	USA	39	90.7	90.7	90.7
	Japan	2	4.7	4.7	95.3
	4.00	1	2.3	2.3	97.7
	6.00	1	2.3	2.3	100.0
	Total	43	100.0	100.0	

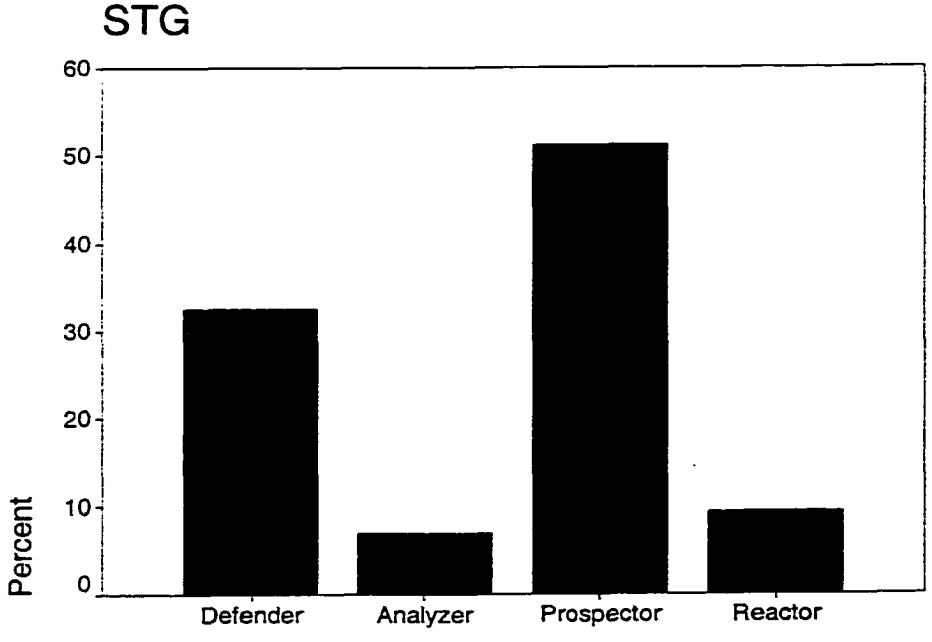
Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	28	65.1	65.1	65.1
	Female	15	34.9	34.9	100.0
	Total	43	100.0	100.0	

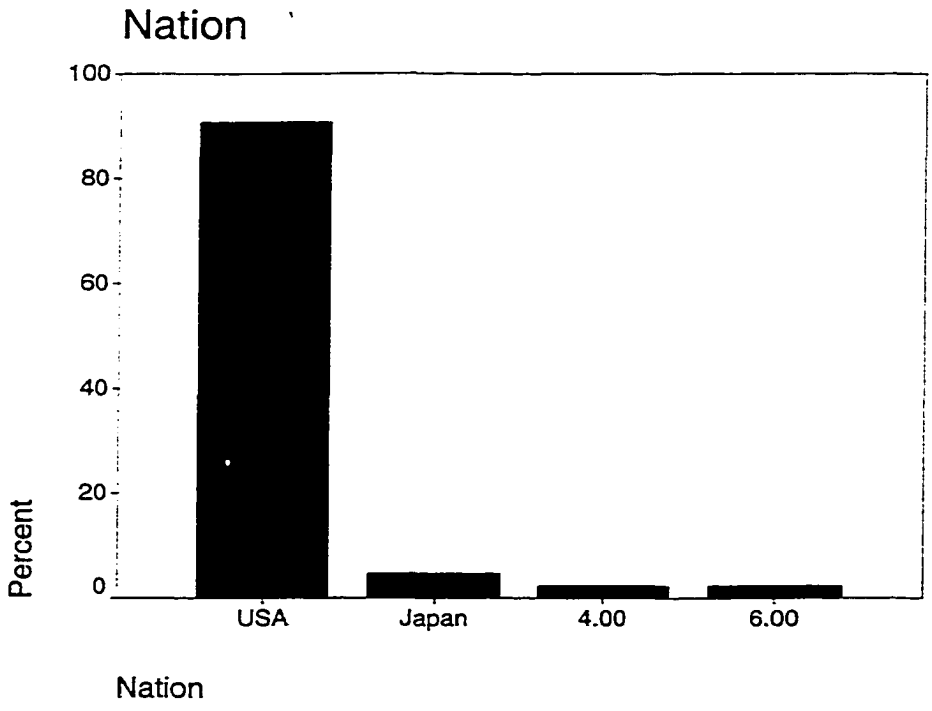
Bar Chart (U.S. Business Sample)

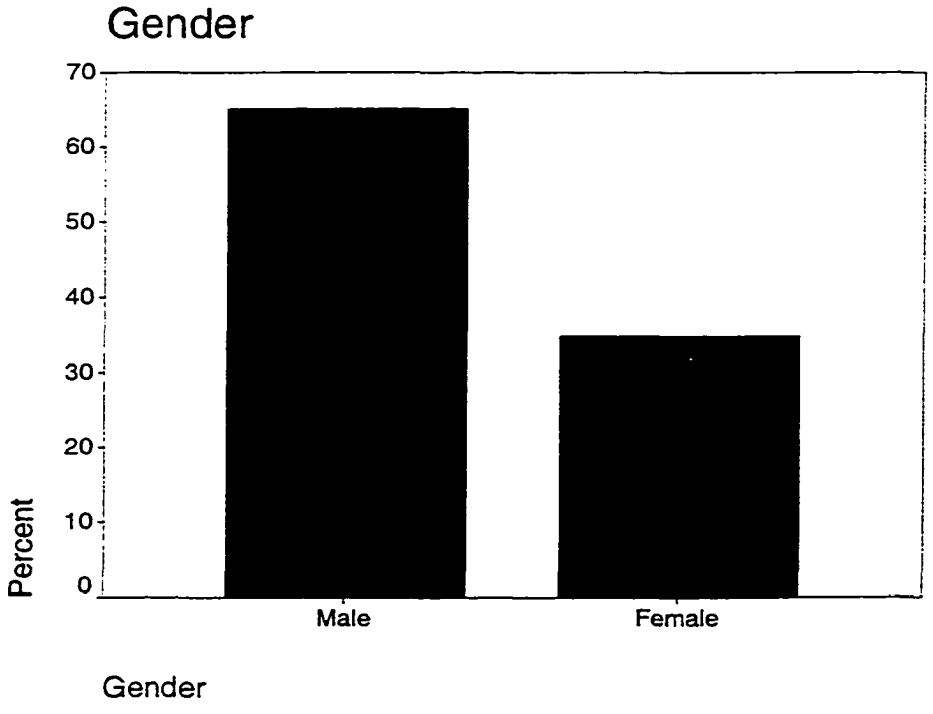


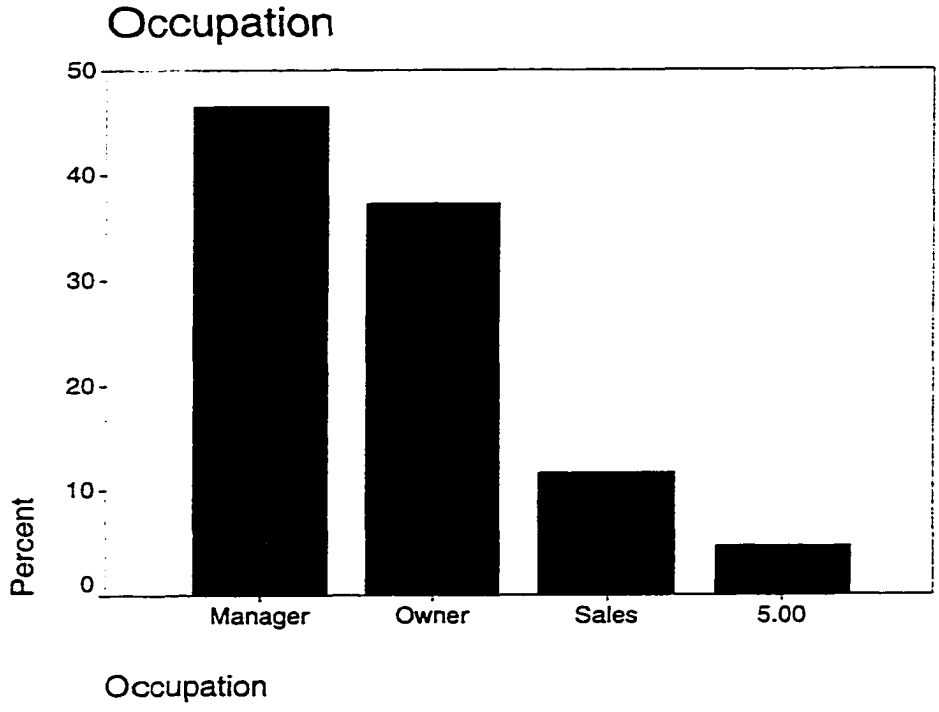
TO1

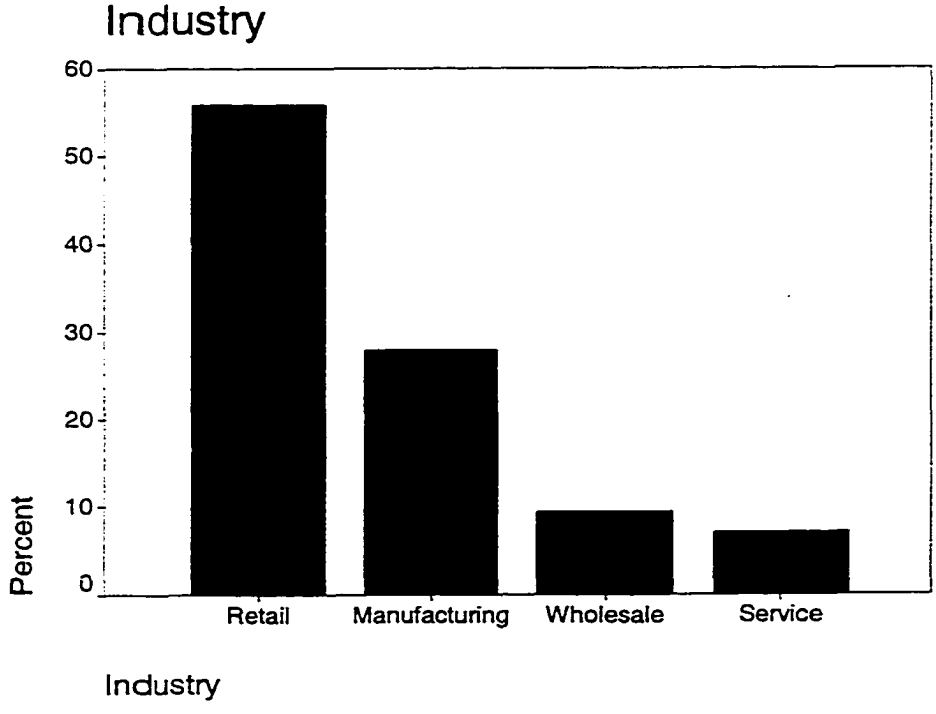


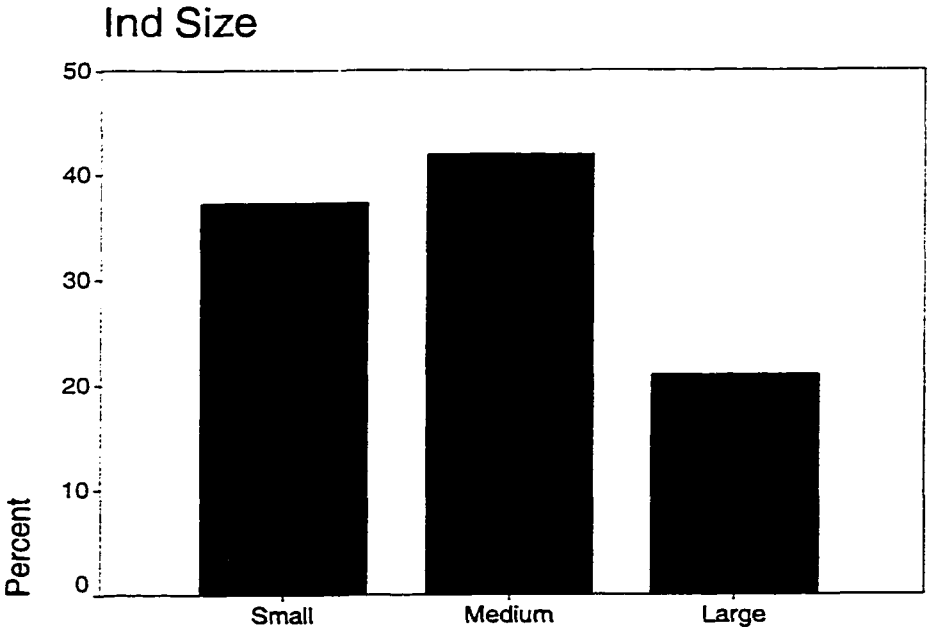
STG

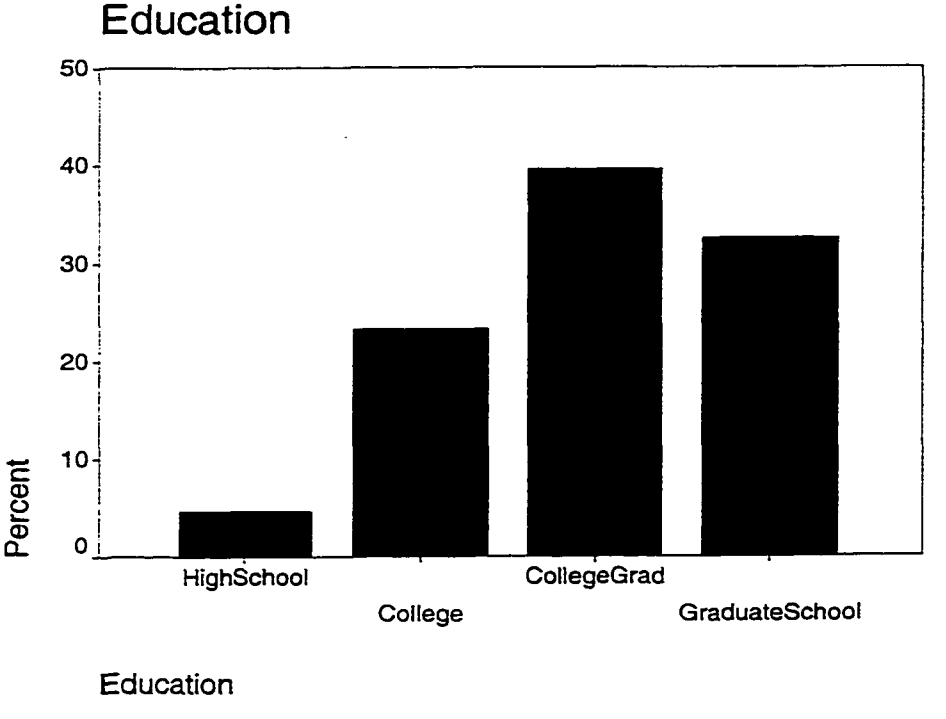


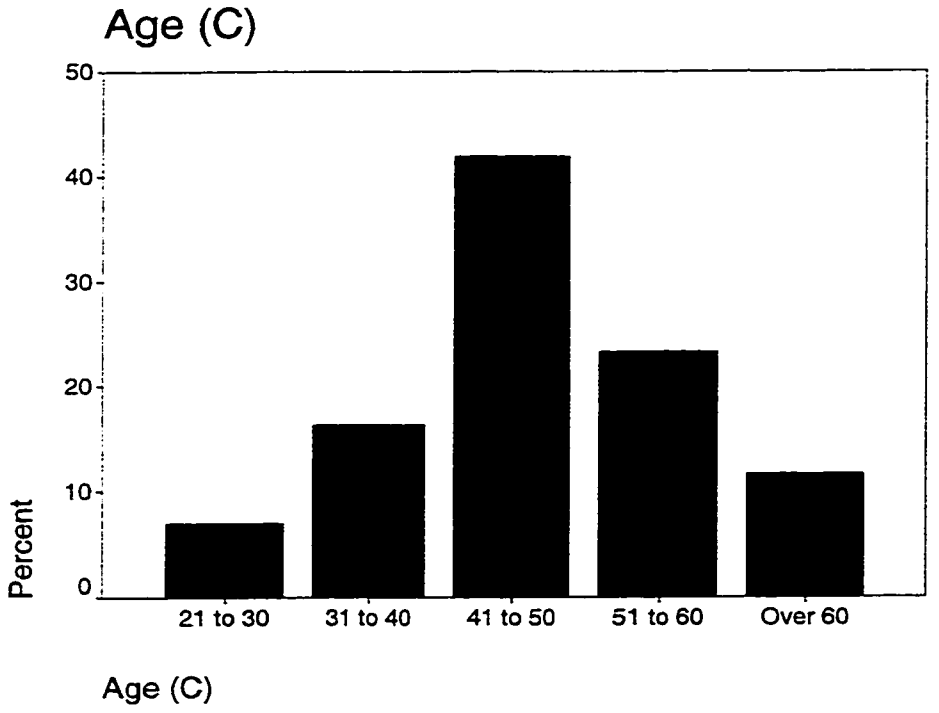












U.S. Sample
Crosstabulations, Chi-Square, and Lambda

TO1 * STG Crosstabulation

Count

		STG				Total
		Defender	Analyzer	Prospector	Reactor	
TO1	Past	7				7
	Present	4	2		2	8
	Future	3	1	22	2	28
Total		14	3	22	4	43

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	34.005[a]	6	.000
Likelihood Ratio	38.013	6	.000
Linear-by-Linear Association	18.144	1	.000
N of Valid Cases	43		

a. 10 cells (83.3%) have expected count less than 5.

Directional Measures

			Value	Asymp. Std. Error[a]
Nominal by Nominal	Lambda	Symmetric	.444	.128
		TO1 Dependent	.333	.224
		STG Dependent	.524	.109
	Goodman and Kruskal tau	TO1 Dependent	.456	.088
		STG Dependent	.428	.087

Directional Measures

			Approx. T[b]	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	2.665	.008
		TO1 Dependent	1.234	.217
		STG Dependent	3.845	.000
	Goodman and Kruskal tau	TO1 Dependent		.000[c]
		STG Dependent		.000[c]

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on chi-square approximation

Symmetric Measures

		Value	Asymp. Std. Error[a]
Interval by Interval	Pearson's R	.657	.105
Ordinal by Ordinal	Spearman Correlation	.617	.138
N of Valid Cases		43	

Symmetric Measures

		Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	5.584	.000[c]
Ordinal by Ordinal	Spearman Correlation	5.021	.000[c]
N of Valid Cases			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Kruskal-Wallis Test

Ranks

	STG	N	Mean Rank
TO1	Defender	14	11.61
	Analyzer	3	17.50
	Prospector	22	29.50
	Reactor	4	20.50
	Total	43	

Test Statistics[a,b]

	TO1
Chi-Square	25.061
df	3
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: STG

Median Test

Frequencies

		STG			
		Defender	Analyzer	Prospector	Reactor
TO1	> Median	0	0	0	0
	<= Median	14	3	22	4

Test Statistics[b,c]

	TO1
N	43
Median	3.0000[a]

a. All values are less than or equal to the median. Median Test cannot be performed.

b. Grouping Variable: STG

c. There are not enough valid cases to perform the Median Test for TO1 * STG (Defender, Reactor). No statistics are computed.

Summary of Canonical Discriminant Functions (U.S. Sample)

Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	2.116[a]	79.2	79.2	.824
2	.402[a]	15.1	94.3	.536
3	.152[a]	5.7	100.0	.363

a. First 3 canonical discriminant functions were used in the analysis.

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1 through 3	.199	58.186	24	.000
2 through 3	.619	17.265	14	.242
3	.868	5.093	6	.532

Standardized Canonical Discriminant Function Coefficients

	Function		
	1	2	3
TO1	1.040	-.407	.165
Nation	.163	.130	-.169
Gender	.222	.094	.552
Occupation	.471	.660	-.105
Industry	.206	-.485	.352
Ind Size	.051	.986	-.300
Education	.236	.026	.456
Age (C)	.232	-.205	-.857

Structure Matrix

	Function		
	1	2	3
TO1	.795*	-.159	.111
Nation	.195*	.118	-.165
Ind Size	.236	.458*	.165
Occupation	.181	.413*	-.268
Industry	.087	-.256*	.208
Age (C)	.069	-.247	-.674*
Gender	.020	.244	.404*
Education	.021	-.084	.223*

*. Largest absolute correlation between each variable and any discriminant function

Canonical Discriminant Function Coefficients

	Function		
	1	2	3
TO1	2.003	-.784	.317
Nation	-.171	.137	-.177
Gender	-.454	.192	1.129
Occupation	-.492	.689	-.110
Industry	-.222	-.521	.378
Ind Size	.071	1.385	-.422
Education	-.262	.029	.505
Age (C)	-.220	-.194	-.812
(Constant)	-8.899	-.665	.117

Unstandardized coefficients

Functions at Group Centroids

	Function		
STG	1	2	3
Defender	-1.790	.357	-8.540E-02
Analyzer	-.708	-2.020	-.511
Prospector	1.279	.147	-7.748E-02
Reactor	-.236	-.545	1.108

Unstandardized canonical discriminant functions evaluated at group means

Chi-Square Test (U.S. Business Sample)

Frequencies

TO1

	Observed N	Expected N	Residual
Past	7	14.3	-7.3
Present	8	14.3	-6.3
Future	28	14.3	13.7
Total	43		

STG

	Observed N	Expected N	Residual
Defender	14	10.8	3.3
Analyzer	3	10.8	-7.8
Prospector	22	10.8	11.3
Reactor	4	10.8	-6.8
Total	43		

Test Statistics

	TO1	STG
Chi-Square[a,b]	19.581	22.581
df	2	3
Asymp. Sig.	.000	.000

a. 0 cells (.0%) have expected frequencies less than 5.

b. 0 cells (.0%) have expected frequencies less than 5.

APPENDIX C

Data -- Brazilian Sample

Frequency Table (Brazilian Sample)

TO1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Past	8	27.6	27.6	27.6
	Present	16	55.2	55.2	82.8
	Future	5	17.2	17.2	100.0
	Total	29	100.0	100.0	

STG

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Defender	8	27.6	27.6	27.6
	Analyzer	10	34.5	34.5	62.1
	Prospector	4	13.8	13.8	75.9
	Reactor	7	24.1	24.1	100.0
	Total	29	100.0	100.0	

Nation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	USA	2	6.9	6.9	6.9
	Brazil	22	75.9	75.9	82.8
	Japan	4	13.8	13.8	96.6
	5.00	1	3.4	3.4	100.0
	Total	29	100.0	100.0	

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	24	82.8	82.8	82.8
	Female	5	17.2	17.2	100.0
	Total	29	100.0	100.0	

Occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Manager	8	27.6	27.6	27.6
	Owner	16	55.2	55.2	82.8
	Sales	3	10.3	10.3	93.1
	Technical	2	6.9	6.9	100.0
	Total	29	100.0	100.0	

Industry

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Retail	23	79.3	79.3	79.3
	Manufacturing	4	13.8	13.8	93.1
	Wholesale	2	6.9	6.9	100.0
	Total	29	100.0	100.0	

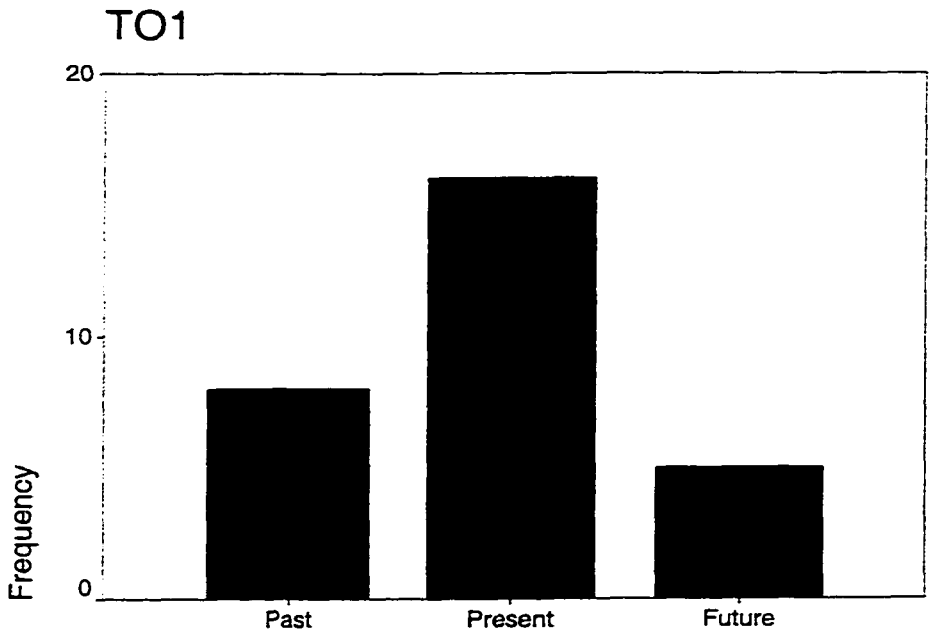
Ind Size

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Small	6	20.7	20.7	20.7
	Medium	19	65.5	65.5	86.2
	Large	4	13.8	13.8	100.0
	Total	29	100.0	100.0	

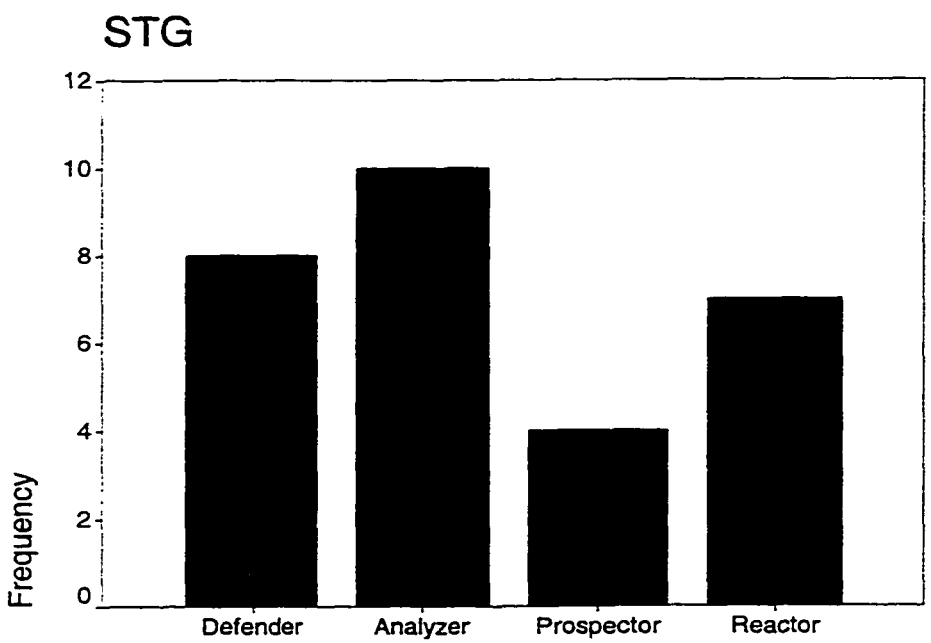
Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	HighSchool	18	62.1	62.1	62.1
	College	10	34.5	34.5	96.6
	CollegeGrad	1	3.4	3.4	100.0
	Total	29	100.0	100.0	

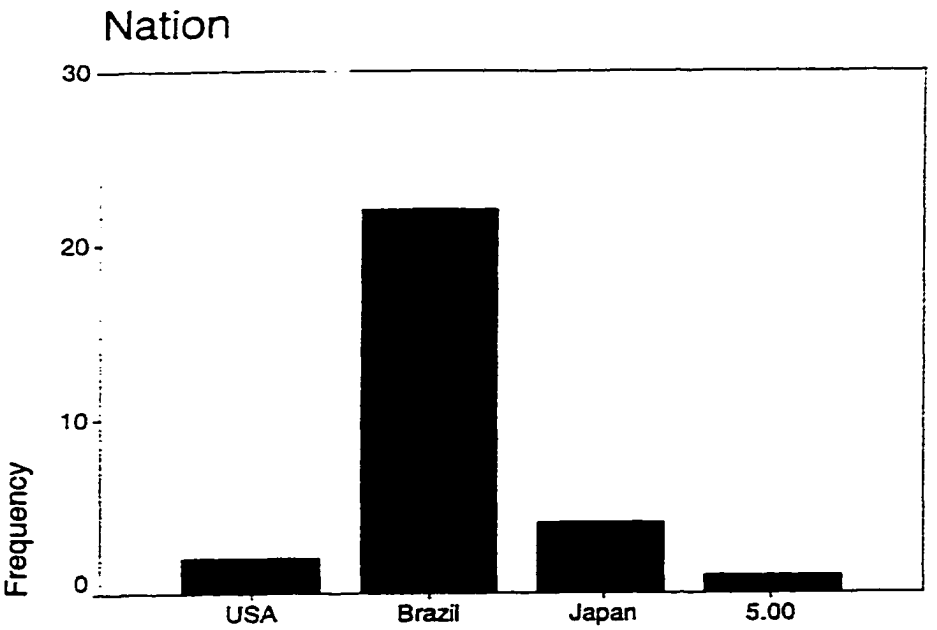
Bar Chart (Brazilian Sample)

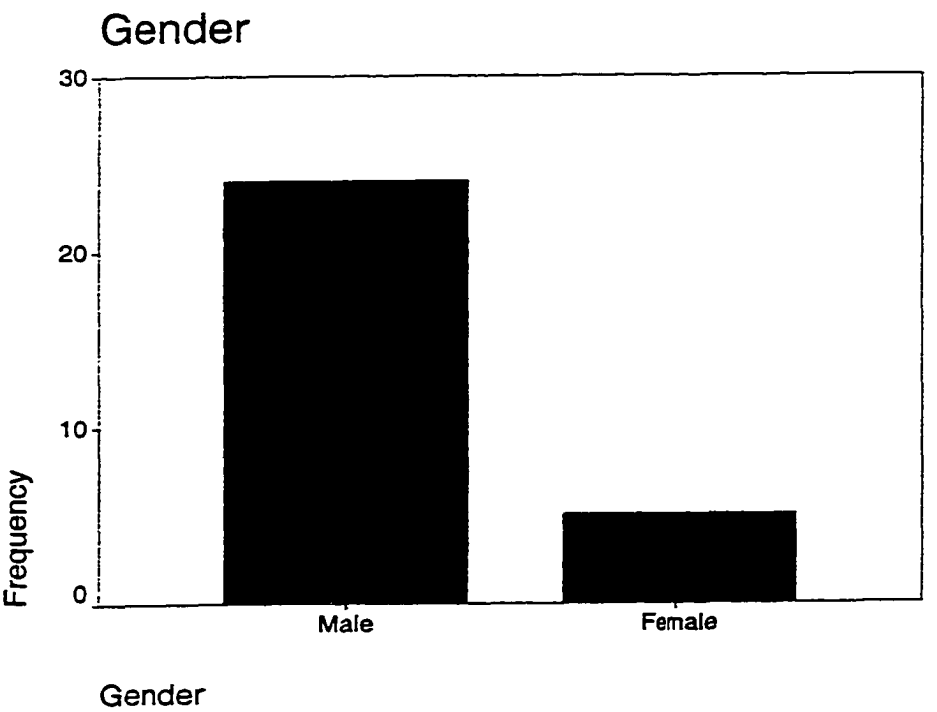


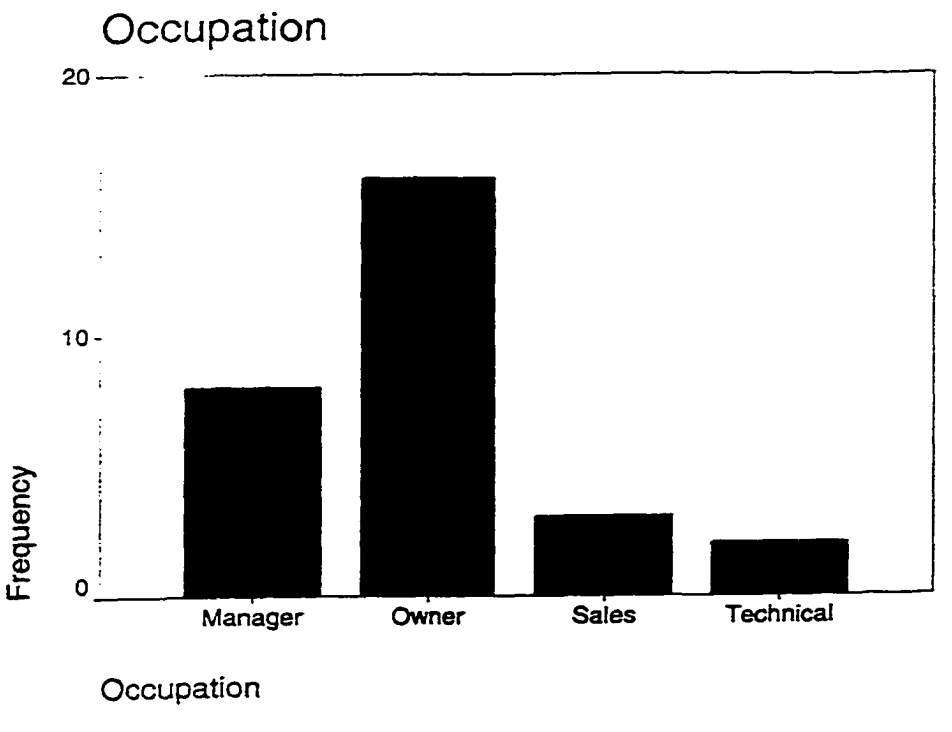
TO1

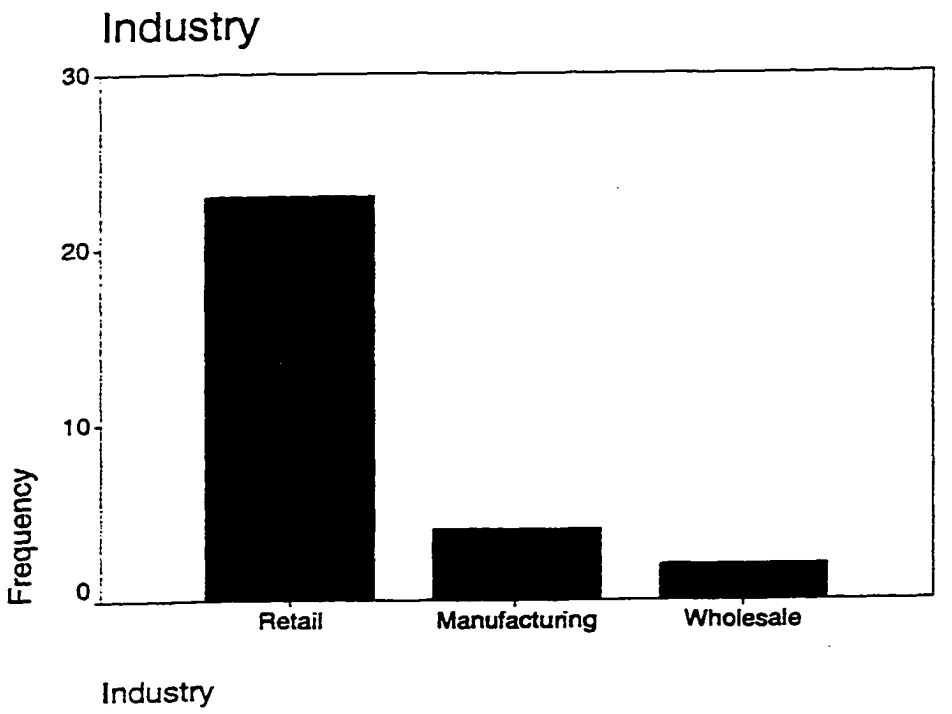


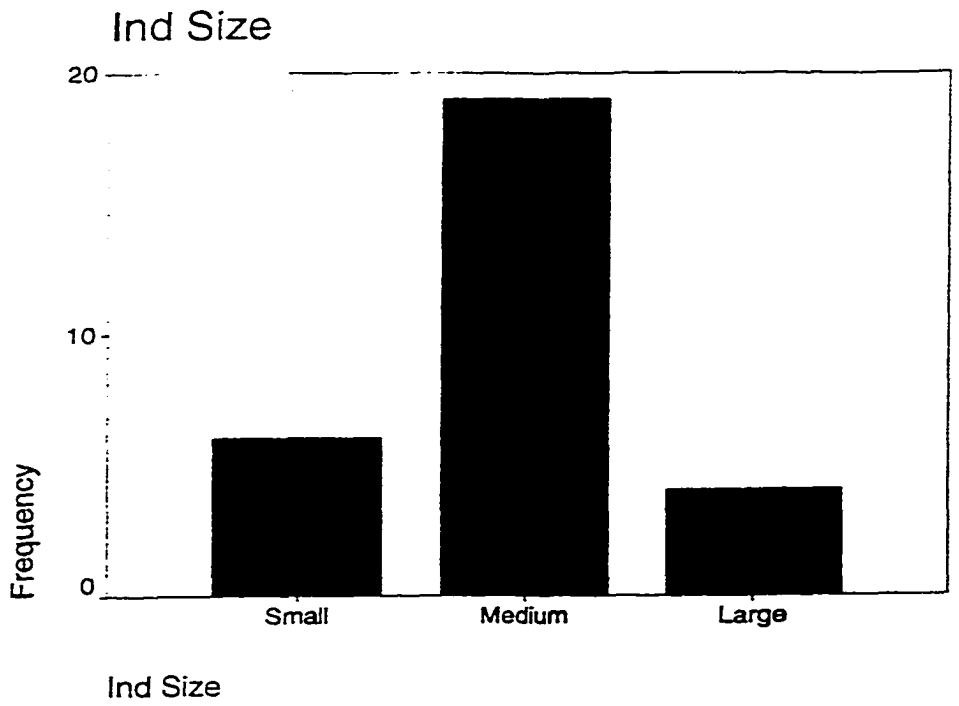
STG

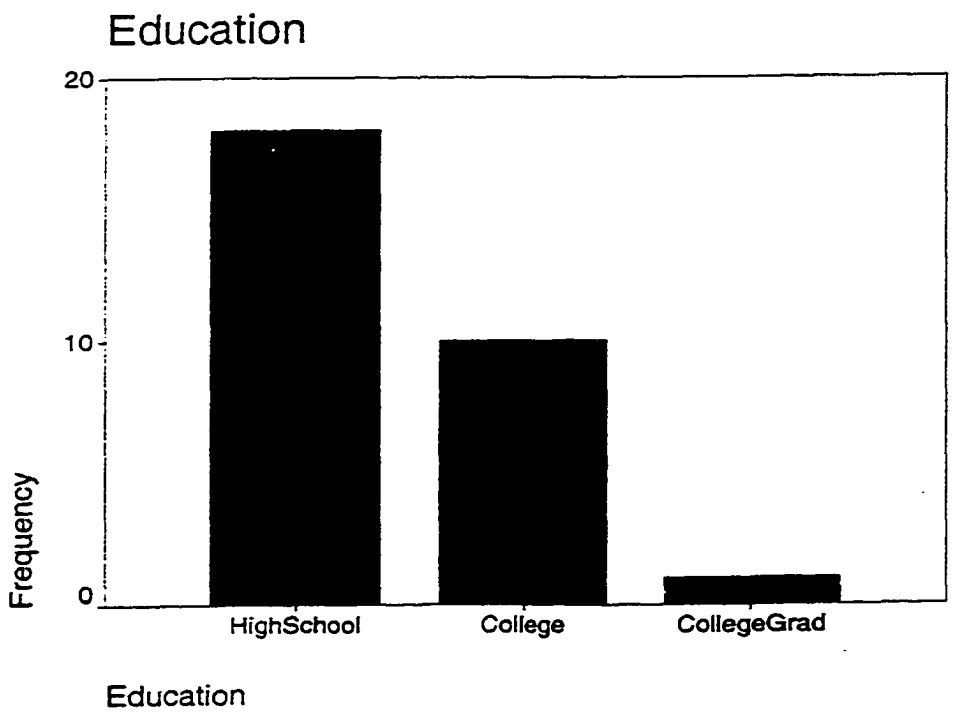


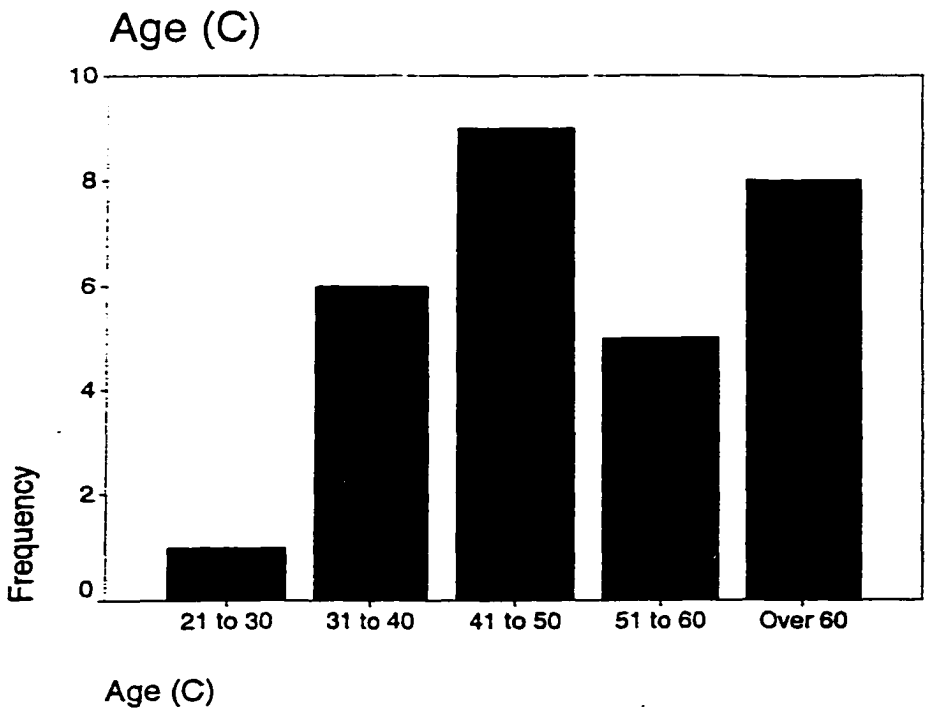












Brazilian Sample
Crosstabulations, Chi-Square, and Lambda

TO1 * STG Crosstabulation

Count

		STG				
		Defender	Analyzer	Prospector	Reactor	Total
TO1	Past	6		1	1	8
	Present	2	8	1	5	16
	Future		2	2	1	5
Total		8	10	4	7	29

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.118[a]	6	.009
Likelihood Ratio	18.743	6	.005
Linear-by-Linear Association	3.897	1	.048
N of Valid Cases	29		

a. 11 cells (91.7%) have expected count less than 5. The minimum expected count is .69.

Directional Measures

			Value	Asymp. Std. Error[a]
Nominal by Nominal	Lambda	Symmetric	.344	.133
		TO1 Dependent	.385	.200
		STG Dependent	.316	.107
	Goodman and Kruskal tau	TO1 Dependent	.308	.131
		STG Dependent	.215	.081

Directional Measures

			Approx. T[b]	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	2.208	.027
		TO1 Dependent	1.570	.116
		STG Dependent	2.750	.006
	Goodman and Kruskal tau	TO1 Dependent		.008[c]
		STG Dependent		.006[c]

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on chi-square approximation

Symmetric Measures

		Value	Asymp. Std. Error[a]
Interval by Interval	Pearson's R	.373	.157
Ordinal by Ordinal	Spearman Correlation	.433	.172
N of Valid Cases		29	

Symmetric Measures

		Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	2.089	.046[c]
Ordinal by Ordinal	Spearman Correlation	2.493	.019[c]
N of Valid Cases			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Correlations (Brazilian Sample)

Correlations

		TO1	STG
TO1	Pearson Correlation	1.000	.373*
	Sig. (2-tailed)	.	.046
	N	29	29
STG	Pearson Correlation	.373*	1.000
	Sig. (2-tailed)	.046	.
	N	29	29

*. Correlation is significant at the 0.05 level (2-tailed).

Nonparametric Correlations

Correlations

			TO1	STG
Kendall's tau_b	TO1	Correlation Coefficient	1.000	.385*
		Sig. (2-tailed)	.	.020
		N	29	29
	STG	Correlation Coefficient	.385*	1.000
		Sig. (2-tailed)	.020	.
		N	29	29
Spearman's rho	TO1	Correlation Coefficient	1.000	.433*
		Sig. (2-tailed)	.	.019
		N	29	29
	STG	Correlation Coefficient	.433*	1.000
		Sig. (2-tailed)	.019	.
		N	29	29

*. Correlation is significant at the .05 level (2-tailed).

Kruskal-Wallis Test (Brazilian Sample)

Ranks

	STG	N	Mean Rank
TO1	Defender	8	7.50
	Analyzer	10	18.60
	Prospector	4	18.75
	Reactor	7	16.29
	Total	29	

Test Statistics[a,b]

	TO1
Chi-Square	11.067
df	3
Asymp. Sig.	.011

a. Kruskal Wallis Test

b. Grouping Variable: STG

Median Test

Frequencies

		STG			
		Defender	Analyzer	Prospector	Reactor
TO1	> Median	0	2	2	1
	<= Median	8	8	2	6

Test Statistics[b]

	TO1
N	29
Median	2.0000
Chi-Square	4.771[a]
df	3
Asymp. Sig.	.189

a. 5 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is .7.

b. Grouping Variable: STG

Summary of Canonical Discriminant Functions (Brazilian Sample)

Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	1.059[a]	44.8	44.8	.717
2	.914[a]	38.6	83.4	.691
3	.393[a]	16.6	100.0	.531

a. First 3 canonical discriminant functions were used in the analysis.

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1 through 3	.182	37.464	24	.039
2 through 3	.375	21.577	14	.088
3	.718	7.297	6	.294

Standardized Canonical Discriminant Function Coefficients

	Function		
	1	2	3
TO1	.966	-.166	-.114
Nation	.645	.702	.194
Gender	.200	-.180	.656
Occupation	.026	.126	.134
Industry	-.185	.912	-.044
Ind Size	-.143	.726	.249
Education	-.517	-.100	-.239
Age (C)	.162	-.115	.686

Structure Matrix

	Function		
	1	2	3
TO1	.709*	-.180	-.376
Industry	-.016	.501*	-.232
Nation	.318	.374*	.047
Gender	-.007	-.122	.588*
Age (C)	.029	-.166	.574*
Ind Size	-.145	.247	.341*
Education	-.161	-.212	-.241*
Occupation	.003	.075	.127*

*. Largest absolute correlation between each variable and any discriminant function

Partial Correlation Coefficients
(Zero Order)

--- P A R T I A L   C O R R E L A T I O N   C O E F F I C I E N T S ---

Zero Order Partials

	VAR00001	VAR00004	VAR00005	VAR00013	VAR00007	VAR00008	VAR00006	VAR00009	VAR00010	VAR00011
VAR00001	1.0000 (0) P= .	.3731 (27) P= .046	-.0360 (27) P= .853	-.0724 (27) P= .709	-.2046 (27) P= .287	-.0067 (27) P= .973	-.0372 (27) P= .848	.0742 (27) P= .702	-.1973 (27) P= .305	.0225 (27) P= .908
VAR00004	.3731 (27) P= .046	1.0000 (0) P= .	.2761 (27) P= .147	-.2960 (27) P= .119	-.3028 (27) P= .110	-.0249 (27) P= .898	-.3274 (27) P= .083	.2770 (27) P= .146	-.1217 (27) P= .529	-.0626 (27) P= .747
VAR00005	-.0360 (27) P= .853	.2761 (27) P= .147	1.0000 (0) P= .	-.1343 (27) P= .487	.0180 (27) P= .926	.0105 (27) P= .957	-.0979 (27) P= .614	-.0322 (27) P= .868	-.1402 (27) P= .468	.1709 (27) P= .376
VAR00013	-.0724 (27) P= .709	-.2960 (27) P= .119	-.1343 (27) P= .487	1.0000 (0) P= .	-.0185 (27) P= .924	.2308 (27) P= .228	.8510 (27) P= .000	-.0790 (27) P= .684	-.0548 (27) P= .778	-.0715 (27) P= .712
VAR00007	-.2046 (27) P= .287	-.3028 (27) P= .110	.0180 (27) P= .926	-.0185 (27) P= .924	1.0000 (0) P= .	-.2063 (27) P= .283	.0908 (27) P= .639	-.2167 (27) P= .259	.2105 (27) P= .273	-.0113 (27) P= .954
VAR00008	-.0067 (27) P= .973	-.0249 (27) P= .898	.0105 (27) P= .957	.2308 (27) P= .228	-.2063 (27) P= .283	1.0000 (0) P= .	.1755 (27) P= .362	-.0531 (27) P= .784	.0681 (27) P= .726	.0316 (27) P= .871
VAR00006	-.0372 (27) P= .848	-.3274 (27) P= .083	-.0979 (27) P= .614	.8510 (27) P= .000	.0908 (27) P= .639	.1755 (27) P= .362	1.0000 (0) P= .	.0474 (27) P= .807	-.0118 (27) P= .952	-.1150 (27) P= .552
VAR00009	.0742 (27) P= .702	.2770 (27) P= .146	-.0322 (27) P= .868	-.0790 (27) P= .684	-.2167 (27) P= .259	-.0531 (27) P= .784	.0474 (27) P= .807	1.0000 (0) P= .	-.2491 (27) P= .192	-.2456 (27) P= .199
VAR00010	-.1973 (27) P= .305	-.1217 (27) P= .529	-.1402 (27) P= .468	-.0548 (27) P= .778	.2105 (27) P= .273	.0681 (27) P= .726	-.0118 (27) P= .952	-.2491 (27) P= .192	1.0000 (0) P= .	-.2301 (27) P= .230
VAR00011	.0225 (27) P= .908	-.0626 (27) P= .747	.1709 (27) P= .376	-.0715 (27) P= .712	-.0113 (27) P= .954	.0316 (27) P= .871	-.1150 (27) P= .552	-.2456 (27) P= .199	-.2301 (27) P= .230	1.0000 (0) P= .

(Coefficient / (D.F.) / 2-tailed Significance)

- - - P A R T I A L C O R R E L A T I O N C O E F F I C I E N T S - - -

Controlling for.. VAR00005 VAR00013 VAR00007 VAR00008 VAR00006 VAR00009
VAR00010 VAR00011

	VAR00001	VAR00004
VAR00001	1.0000	.3923
	(0)	(19)
	P= .	P= .079
VAR00004	.3923	1.0000
	(19)	(0)
	P= .079	P= .

(Coefficient / (D.F.) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

APPENDIX D

Data -- Japanese Sample

Frequencies (Japanese Sample)

TO1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Past	10	31.3	31.3	31.3
	Present	8	25.0	25.0	56.3
	Future	14	43.8	43.8	100.0
	Total	32	100.0	100.0	

STG

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Defender	9	28.1	28.1	28.1
	Analyzer	7	21.9	21.9	50.0
	Prospector	13	40.6	40.6	90.6
	Reactor	3	9.4	9.4	100.0
	Total	32	100.0	100.0	

Nation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	USA	3	9.4	9.4	9.4
	Japan	26	81.3	81.3	90.6
	5.00	1	3.1	3.1	93.8
	6.00	2	6.3	6.3	100.0
	Total	32	100.0	100.0	

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	27	84.4	84.4	84.4
	Female	5	15.6	15.6	100.0
	Total	32	100.0	100.0	

Occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Manager	17	53.1	53.1	53.1
	Owner	10	31.3	31.3	84.4
	Sales	2	6.3	6.3	90.6
	Technical	3	9.4	9.4	100.0
	Total	32	100.0	100.0	

Industry

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Retail	22	68.8	68.8	68.8
	Manufacturing	5	15.6	15.6	84.4
	Wholesale	5	15.6	15.6	100.0
	Total	32	100.0	100.0	

Ind Size

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Small	5	15.6	15.6	15.6
	Medium	23	71.9	71.9	87.5
	Large	4	12.5	12.5	100.0
	Total	32	100.0	100.0	

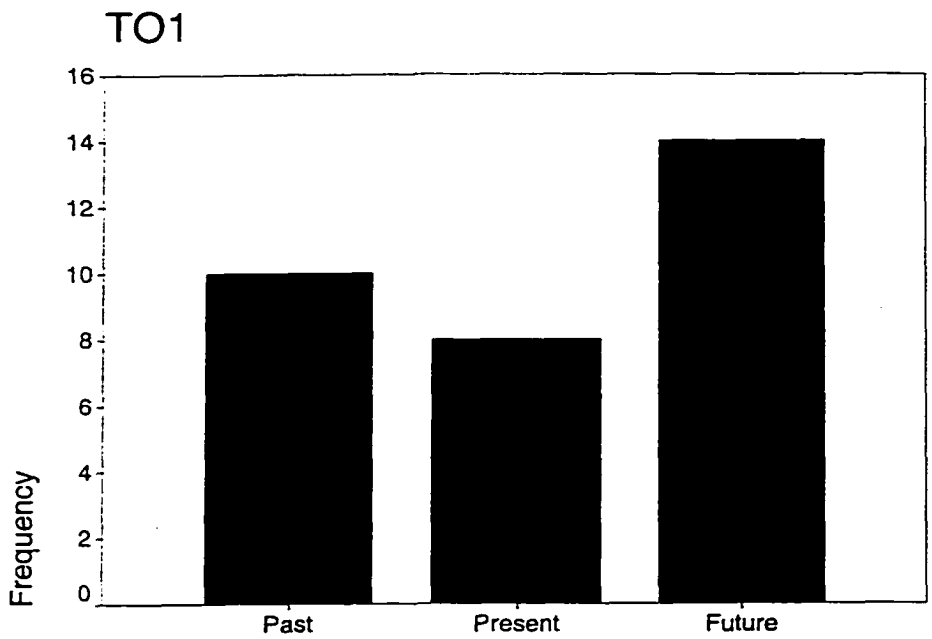
Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	HighSchool	26	81.3	81.3	81.3
	College	5	15.6	15.6	96.9
	CollegeGrad	1	3.1	3.1	100.0
	Total	32	100.0	100.0	

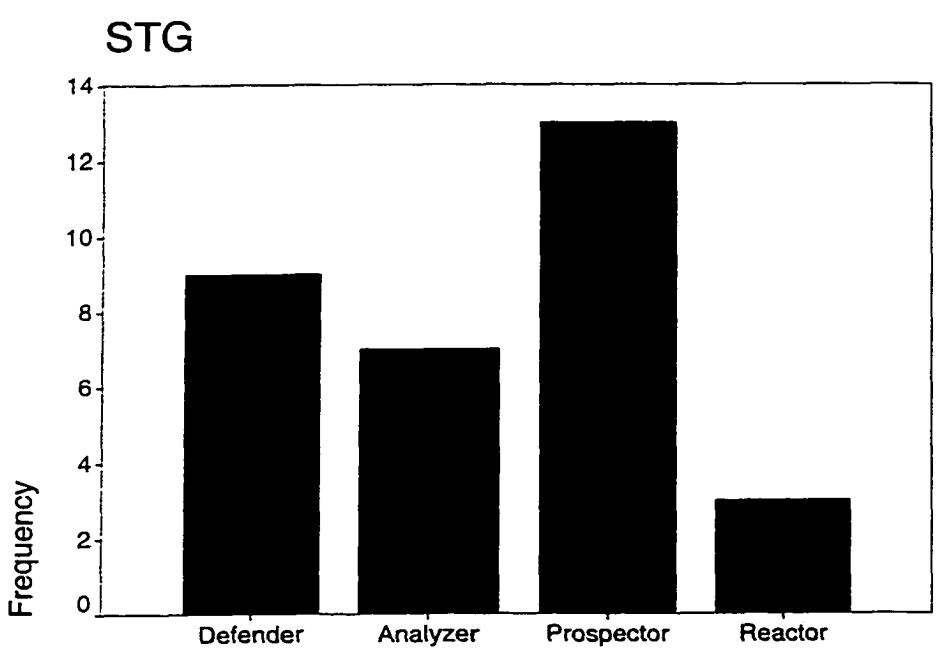
Age (C)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	31 to 40	6	18.8	18.8	18.8
	41 to 50	8	25.0	25.0	43.8
	51 to 60	8	25.0	25.0	68.8
	Over 60	10	31.3	31.3	100.0
	Total	32	100.0	100.0	

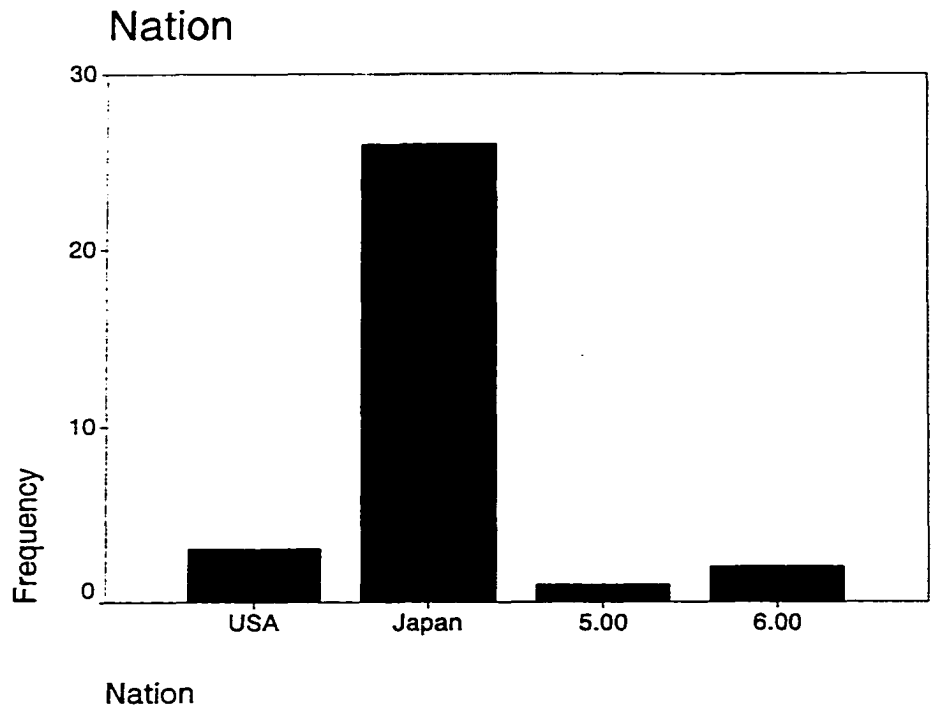
Bar Chart (Japanese Sample)

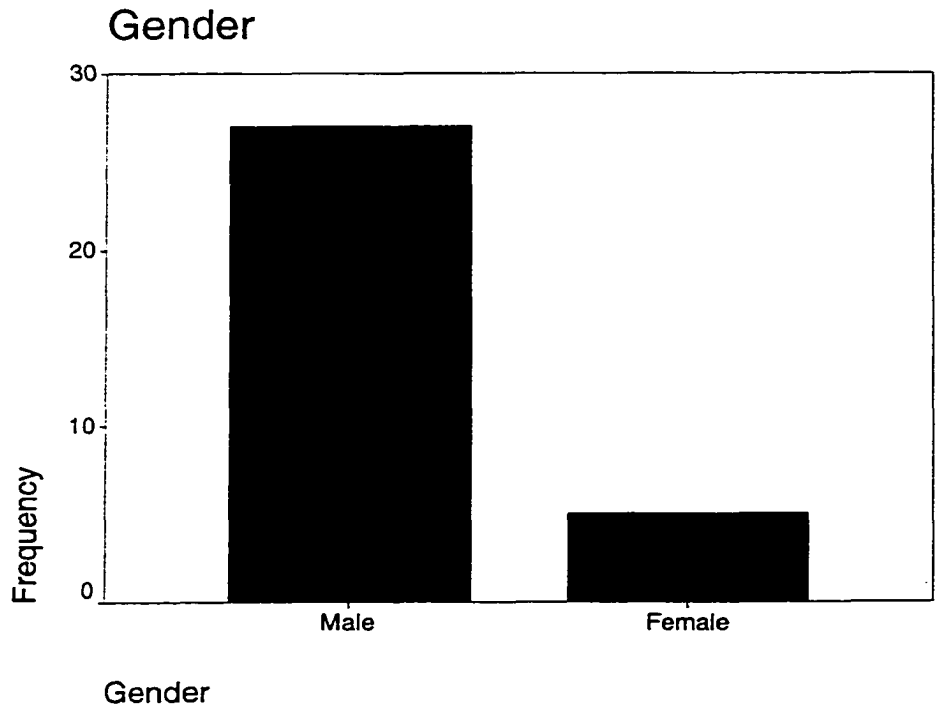


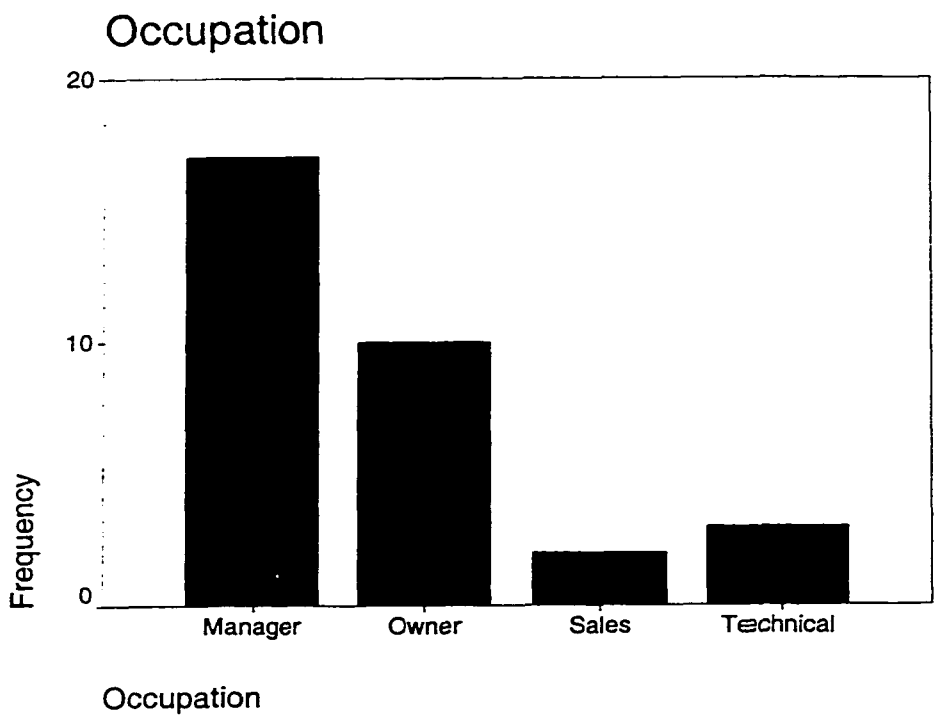
TO1

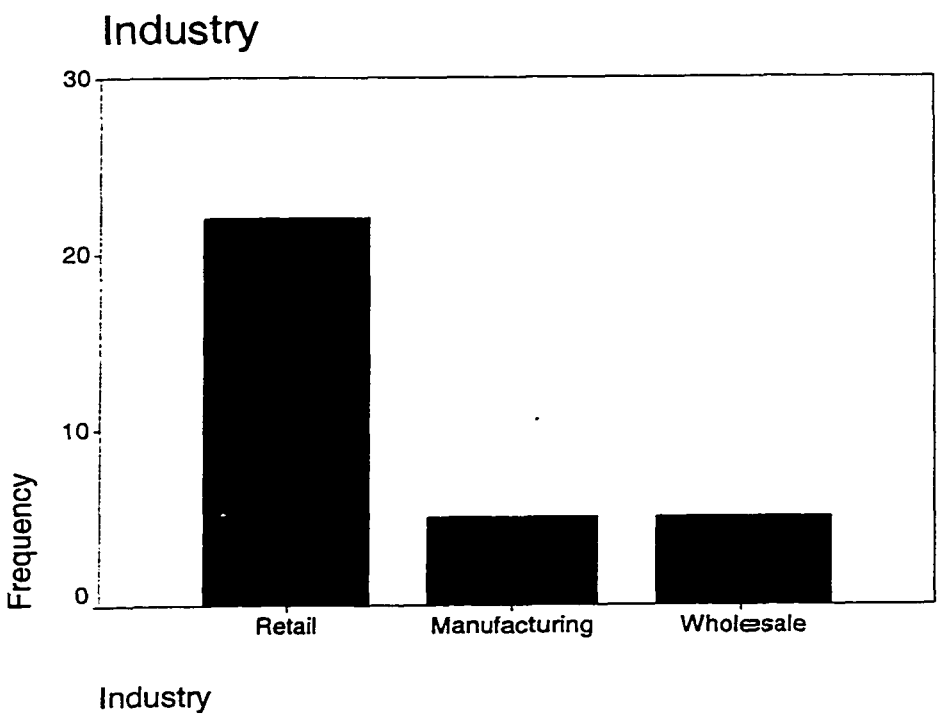


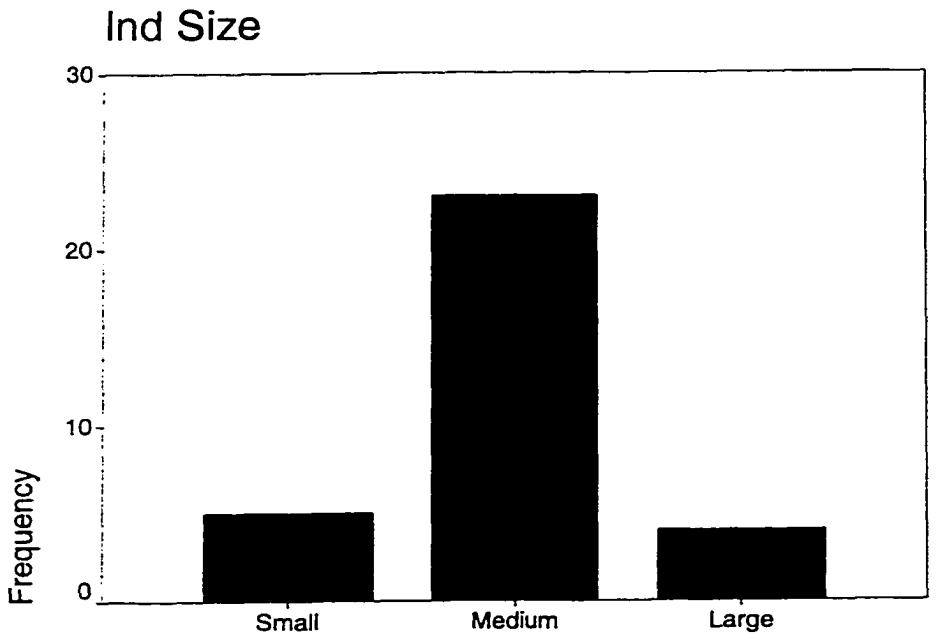
STG

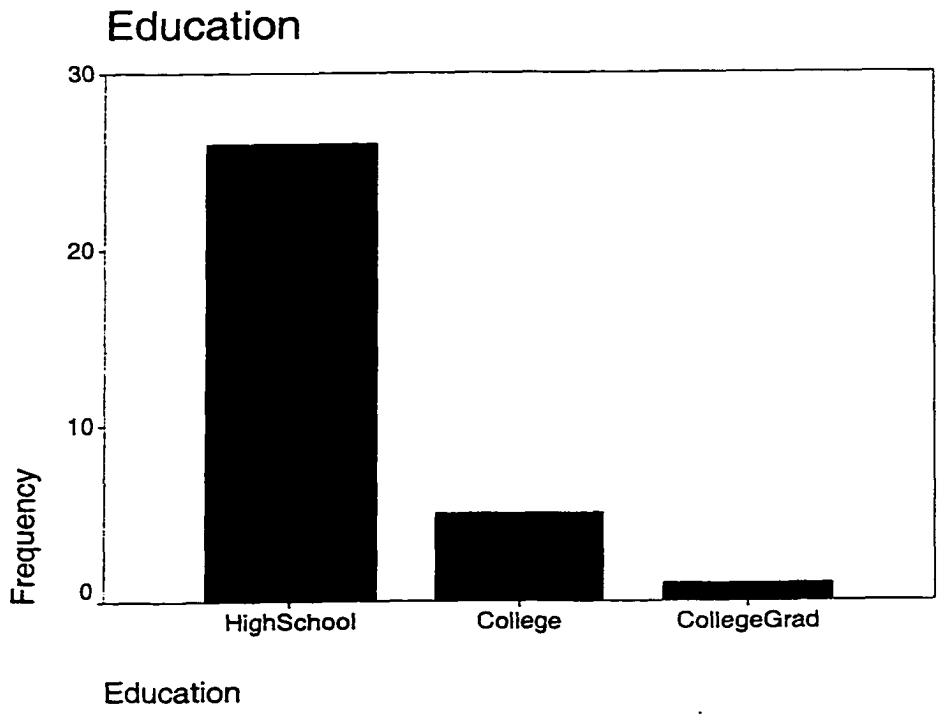


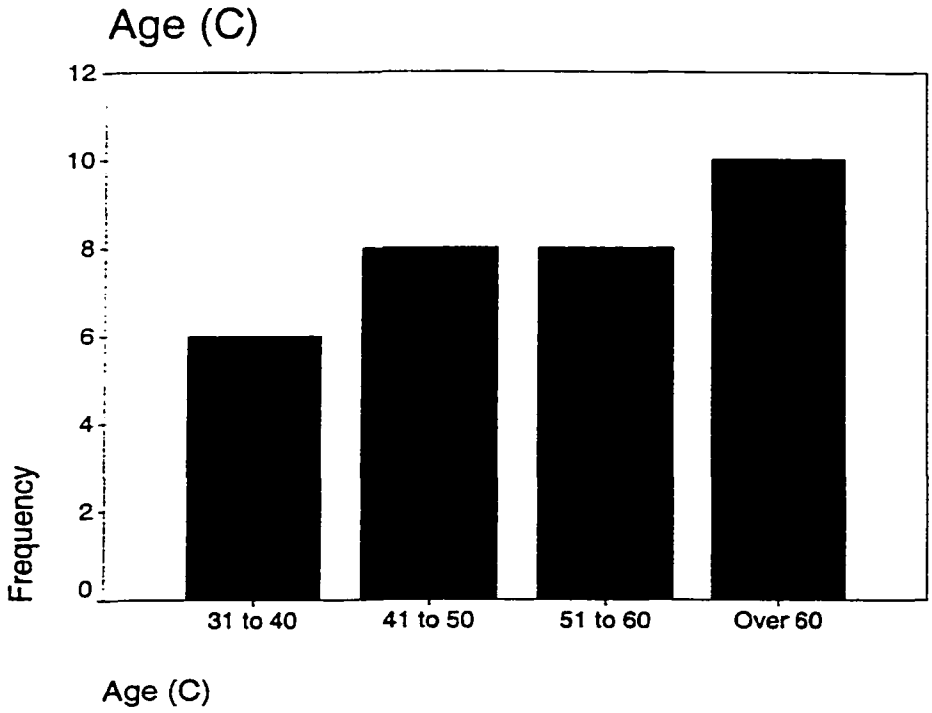












Correlations (Japanese Sample)

Correlations

		TO1	STG
TO1	Pearson Correlation	1.000	.436*
	Sig. (2-tailed)	.	.013
	N	32	32
STG	Pearson Correlation	.436*	1.000
	Sig. (2-tailed)	.013	.
	N	32	32

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

			TO1	STG
Kendall's tau_b	TO1	Correlation Coefficient	1.000	.426**
		Sig. (2-tailed)	.	.007
		N	32	32
	STG	Correlation Coefficient	.426**	1.000
		Sig. (2-tailed)	.007	.
		N	32	32
Spearman's rho	TO1	Correlation Coefficient	1.000	.446*
		Sig. (2-tailed)	.	.010
		N	32	32
	STG	Correlation Coefficient	.446*	1.000
		Sig. (2-tailed)	.010	.
		N	32	32

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

Chi-Square Test (Japanese Sample)

TO1

	Observed N	Expected N	Residual
Past	10	10.7	-.7
Present	8	10.7	-2.7
Future	14	10.7	3.3
Total	32		

STG

	Observed N	Expected N	Residual
Defender	9	8.0	1.0
Analyzer	7	8.0	-1.0
Prospector	13	8.0	5.0
Reactor	3	8.0	-5.0
Total	32		

Test Statistics

	TO1	STG
Chi-Square[a,b]	1.750	6.500
df	2	3
Asymp. Sig.	.417	.090

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 10.7.

b. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 8.0.

Kruskal-Wallis Test (Japanese Sample)

Ranks

	STG	N	Mean Rank
TO1	Defender	9	12.17
	Analyzer	7	11.93
	Prospector	13	21.42
	Reactor	3	18.83
	Total	32	

Test Statistics[a,b]

	TO1
Chi-Square	8.438
df	3
Asymp. Sig.	.038

a. Kruskal Wallis Test

b. Grouping Variable: STG

Median Test

Frequencies

		STG			
		Defender	Analyzer	Prospector	Reactor
TO1	> Median	3	0	9	2
	<= Median	6	7	4	1

Test Statistics[b]

	TO1
N	32
Median	2.0000
Chi-Square	9.911[a]
df	3
Asymp. Sig.	.019

a. 5 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 1.3.

b. Grouping Variable: STG

Crosstabulation, Chi-Square, and Lambda (Japanese Sample)

TO1 * STG Crosstabulation

Count

		STG				
		Defender	Analyzer	Prospector	Reactor	Total
TO1	Past	6	2	1	1	10
	Present		5	3		8
	Future	3		9	2	14
Total		9	7	13	3	32

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.571[a]	6	.002
Likelihood Ratio	24.392	6	.000
Linear-by-Linear Association	5.899	1	.015
N of Valid Cases	32		

a. 11 cells (91.7%) have expected count less than 5. The minimum expected count is .75.

Directional Measures

			Value	Asymp. Std. Error[a]
Nominal by Nominal	Lambda	Symmetric	.405	.152
		TO1 Dependent	.444	.155
		STG Dependent	.368	.162
	Goodman and Kruskal tau	TO1 Dependent	.316	.103
		STG Dependent	.248	.092

Directional Measures

			Approx. T[b]	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	2.262	.024
		TO1 Dependent	2.309	.021
		STG Dependent	1.907	.056
	Goodman and Kruskal tau	TO1 Dependent		.003[c]
		STG Dependent		.001[c]

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on chi-square approximation

Symmetric Measures

		Value	Asymp. Std. Error[a]
Interval by Interval	Pearson's R	.436	.180
Ordinal by Ordinal	Spearman Correlation	.446	.178
N of Valid Cases		32	

Symmetric Measures

		Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	2.655	.013[c]
Ordinal by Ordinal	Spearman Correlation	2.731	.010[c]
N of Valid Cases			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Summary of Canonical Discriminant Functions (Japanese Sample)

Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	1.086[a]	64.1	64.1	.721
2	.470[a]	27.8	91.9	.566
3	.138[a]	8.1	100.0	.348

a. First 3 canonical discriminant functions were used in the analysis.

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1 through 3	.287	31.247	24	.147
2 through 3	.598	12.869	14	.537
3	.879	3.230	6	.780

Standardized Canonical Discriminant Function Coefficients

	Function		
	1	2	3
TO1	-.507	.717	.156
Nation	.674	-.079	.404
Gender	-.356	-.226	.114
Occupation	.031	-.037	-.133
Industry	-.179	.697	-.404
Ind Size	-.032	-.353	.455
Education	-.075	.397	.722
Age (C)	.913	.567	.108

Structure Matrix

	Function		
	1	2	3
Age (C)	.627*	.380	.027
TO1	-.469	.523*	.106
Industry	-.148	.403*	-.367
Occupation	-.043	-.275*	-.035
Education	-.022	.125	.832*
Gender	-.164	-.061	.267*
Ind Size	-.186	-.151	.261*
Nation	.147	-.027	.194*

*. Largest absolute correlation between each variable and any discriminant function

Partial Correlation Coefficients (Zero Order)

--- P A R T I A L   C O R R E L A T I O N   C O E F F I C I E N T S ---

Zero Order Partials

	VAR00001	VAR00004	VAR00005	VAR00013	VAR00007	VAR00008	VAR00009	VAR00010	VAR00011
VAR00001	1.0000 (0) P= .	.4362 (30) P= .013	.2038 (30) P= .263	-.3557 (30) P= .046	-.0628 (30) P= .733	-.1885 (30) P= .302	.0547 (30) P= .766	-.1292 (30) P= .481	-.0660 (30) P= .719
VAR00004	.4362 (30) P= .013	1.0000 (0) P= .	-.1430 (30) P= .435	-.2273 (30) P= .211	.0383 (30) P= .835	-.0738 (30) P= .688	.3105 (30) P= .084	.0188 (30) P= .919	-.0782 (30) P= .671
VAR00005	.2038 (30) P= .263	-.1430 (30) P= .435	1.0000 (0) P= .	-.3135 (30) P= .081	-.1934 (30) P= .289	-.1429 (30) P= .435	-.0380 (30) P= .836	-.2833 (30) P= .116	-.0904 (30) P= .623
VAR00013	-.3557 (30) P= .046	-.2273 (30) P= .211	-.3135 (30) P= .081	1.0000 (0) P= .	.1220 (30) P= .506	-.0845 (30) P= .645	-.0497 (30) P= .787	-.1238 (30) P= .499	.1284 (30) P= .484
VAR00007	-.0628 (30) P= .733	.0383 (30) P= .835	-.1934 (30) P= .289	.1220 (30) P= .506	1.0000 (0) P= .	.2196 (30) P= .227	-.0395 (30) P= .830	.0254 (30) P= .890	.3396 (30) P= .057
VAR00008	-.1885 (30) P= .302	-.0738 (30) P= .688	-.1429 (30) P= .435	-.0845 (30) P= .645	.2196 (30) P= .227	1.0000 (0) P= .	-.2556 (30) P= .158	-.0802 (30) P= .663	.1350 (30) P= .461
VAR00009	.0547 (30) P= .766	.3105 (30) P= .084	-.0380 (30) P= .836	-.0497 (30) P= .787	-.0395 (30) P= .830	-.2556 (30) P= .158	1.0000 (0) P= .	.3520 (30) P= .048	-.1969 (30) P= .280
VAR00010	-.1292 (30) P= .481	.0188 (30) P= .919	-.2833 (30) P= .116	-.1238 (30) P= .499	.0254 (30) P= .890	-.0802 (30) P= .663	.3520 (30) P= .048	1.0000 (0) P= .	.1489 (30) P= .416
VAR00011	-.0660 (30) P= .719	-.0782 (30) P= .671	-.0904 (30) P= .623	.1284 (30) P= .484	.3396 (30) P= .057	.1350 (30) P= .461	-.1969 (30) P= .280	.1489 (30) P= .416	1.0000 (0) P= .

(Coefficient / (D.F.) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - - P A R T I A L C O R R E L A T I O N C O E F F I C I E N T S

Controlling for.. VAR00005 VAR00013 VAR00007 VAR00008 VAR00009
VAR00011

	VAR00001	VAR00004
VAR00001	1.0000	.3994
	(0)	(23)
	P= .	P= .048
VAR00004	.3994	1.0000
	(23)	(0)
	P= .048	P= .

(Coefficient / (D.F.) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

APPENDIX E

Test for Differences: Managers Versus Owners

NPar Tests (Are Owners and Managers the Same?)

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
STG	87	2.3793	1.0592	1.00	4.00
Occupation	87	1.4828	.5026	1.00	2.00

Kruskal-Wallis Test

Ranks

	Occupation	N	Mean Rank
STG	Manager	45	41.51
	Owner	42	46.67
	Total	87	

Test Statistics[a,b]

	STG
Chi-Square	.988
df	1
Asymp. Sig.	.320

a. Kruskal Wallis Test

b. Grouping Variable: Occupation

Median Test

Frequencies

		Occupation	
		Manager	Owner
STG	> Median	6	7
	<= Median	39	35

Test Statistics[a]

		STG
N		87
Median		3.0000
Chi-Square		.190
df		1
Asymp. Sig.		.663
Yates' Continuity Correction	Chi-Square	.018
	df	1
	Asymp. Sig.	.893

a. Grouping Variable: Occupation

T-Test (Are Owners and Managers the Same?)

Group Statistics

	Occupation	N	Mean	Std. Deviation	Std. Error Mean
STG	Manager	45	2.2667	1.0954	.1633
	Owner	42	2.5000	1.0181	.1571

Independent Samples Test

		Levene's Test for Equality of Variances	
		F	Sig.
STG	Equal variances assumed	1.018	.316
	Equal variances not assumed		

Independent Samples Test

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
STG	Equal variances assumed	-1.027	85	.307	-.2333
	Equal variances not assumed	-1.030	84.999	.306	-.2333

Independent Samples Test

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
STG	Equal variances assumed	.2272	-.6850	.2184
	Equal variances not assumed	.2266	-.6839	.2172

NPar Tests (Owners vs. Managers/ Are they the Same?)

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
TO1	87	2.2529	.7956	1.00	3.00
Occupation	87	1.4828	.5026	1.00	2.00

Kruskal-Wallis Test

Ranks

	Occupation	N	Mean Rank
TO1	Manager	45	45.27
	Owner	42	42.64
	Total	87	

Test Statistics[a,b]

	TO1
Chi-Square	.274
df	1
Asymp. Sig.	.601

a. Kruskal Wallis Test

b. Grouping Variable: Occupation

Median Test

Frequencies

		Occupation	
		Manager	Owner
TO1	> Median	23	18
	<= Median	22	24

Test Statistics[a]

		TO1
N		87
Median		2.0000
Chi-Square		.594
df		1
Asymp. Sig.		.441
Yates' Continuity Correction	Chi-Square	.309
	df	1
	Asymp. Sig.	.578

a. Grouping Variable: Occupation

T-Test (Owners vs. Managers)

Group Statistics

	Occupation	N	Mean	Std. Deviation	Std. Error Mean
TO1	Manager	45	2.2889	.8153	.1215
	Owner	42	2.2143	.7820	.1207

Independent Samples Test

		Levene's Test for Equality of Variances	
		F	Sig.
TO1	Equal variances assumed	.459	.500
	Equal variances not assumed		

Independent Samples Test

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
TO1	Equal variances assumed	.435	85	.665	7.460E-02
	Equal variances not assumed	.436	84.933	.664	7.460E-02

Independent Samples Test

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
TO1	Equal variances assumed	.1715	-.2664	.4156
	Equal variances not assumed	.1713	-.2659	.4151

Crosstabs (Managers vs. Owners Test for Differences in Strategy)

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Occupation * STG	87	100.0%	0	.0%	87	100.0%

Occupation * STG Crosstabulation

Count

		STG				Total
		Defender	Analyzer	Prospector	Reactor	
Occupation	Manager	16	7	16	6	45
	Owner	9	10	16	7	42
Total		25	17	32	13	87

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.466[a]	3	.482
Likelihood Ratio	2.492	3	.477
Linear-by-Linear Association	1.054	1	.305
N of Valid Cases	87		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.28.

Directional Measures

			Value	Asymp. Std. Error[a]
Nominal by Nominal	Lambda	Symmetric	.041	.079
		Occupation Dependent	.095	.124
		STG Dependent	.000	.103
	Goodman and Kruskal tau	Occupation Dependent	.028	.035
		STG Dependent	.010	.013

APPENDIX F

Test for Non-Response Bias

T-Test (Non Response Bias Test)

Group Statistics

	Date Recd	N	Mean	Std. Deviation	Std. Error Mean
STG	First Round	92	2.2717	1.0494	.1094
	Follow Up	12	2.9167	.9003	.2599

Independent Samples Test

		Levene's Test for Equality of Variances	
		F	Sig.
STG	Equal variances assumed	4.378	.039
	Equal variances not assumed		

Independent Samples Test

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
STG	Equal variances assumed	.3175	-1.2746	-1.52E-02
	Equal variances not assumed	.2820	-1.2453	-4.45E-02

Independent Samples Test

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
STG	Equal variances assumed	-2.032	102	.045	-.6449
	Equal variances not assumed	-2.287	15.186	.037	-.6449

T-Test (Non Response Bias Test)

Group Statistics

	Date Recd	N	Mean	Std. Deviation	Std. Error Mean
TO1	First Round	92	2.1630	.8157	8.505E-02
	Follow Up	12	2.5833	.6686	.1930

Independent Samples Test

		Levene's Test for Equality of Variances	
		F	Sig.
TO1	Equal variances assumed	1.664	.200
	Equal variances not assumed		

Independent Samples Test

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
TO1	Equal variances assumed	-1.709	102	.090	-.4203
	Equal variances not assumed	-1.993	15.616	.064	-.4203

Independent Samples Test

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
TO1	Equal variances assumed	.2459	-.9080	6.745E-02
	Equal variances not assumed	.2109	-.8683	2.770E-02

NPar Tests (Non Response Bias Test)

Mann-Whitney Test

Ranks

	Date Recd	N	Mean Rank	Sum of Ranks
TO1	First Round	92	50.81	4674.50
	Follow Up	12	65.46	785.50
	Total	104		

Test Statistics[a]

	TO1
Mann-Whitney U	396.500
Wilcoxon W	4674.500
Z	-1.701
Asymp. Sig. (2-tailed)	.089

a. Grouping Variable: Date Recd

NPar Tests (Non Response Bias Test)

Mann-Whitney Test

Ranks

	Date Recd	N	Mean Rank	Sum of Ranks
STG	First Round	92	50.46	4642.50
	Follow Up	12	68.13	817.50
	Total	104		

Test Statistics[a]

	STG
Mann-Whitney U	364.500
Wilcoxon W	4642.500
Z	-1.998
Asymp. Sig. (2-tailed)	.046

a. Grouping Variable: Date Recd

APPENDIX G

Test for Nation Versus Time Orientation

Crosstabs (Nation vs. Time Orientation)

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
TO1 * Nation	98	100.0%	0	.0%	98	100.0%

TO1 * Nation Crosstabulation

Count

		Nation			
		USA	Brazil	Japan	Total
TO1	Past	10	6	7	23
	Present	10	12	10	32
	Future	24	4	15	43
Total		44	22	32	98

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.274[a]	4	.055
Likelihood Ratio	9.744	4	.045
Linear-by-Linear Association	.265	1	.607
N of Valid Cases	98		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.16.

Directional Measures

			Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	.092	.069	1.281	.200
		TO1 Dependent	.145	.067	2.042	.041
		Nation Dependent	.037	.085	.427	.670
	Goodman and Kruskal tau	TO1 Dependent	.056	.032		.029[c]
		Nation Dependent	.042	.026		.085[c]

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on chi-square approximation

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	-.052	.103	-.513	.609[c]
Ordinal by Ordinal	Spearman Correlation	-.070	.104	-.688	.493[c]
N of Valid Cases		98			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

APPENDIX H

Split Half Test for Consolidated Data

T-Test (Split Half Test -Consolidated Data)

Group Statistics

	Split Half	N	Mean	Std. Deviation	Std. Error Mean
TO1	First Half	53	2.2075	.8171	.1122
	Second Half	51	2.2157	.8078	.1131

Independent Samples Test

		Levene's Test for Equality of Variances	
		F	Sig.
TO1	Equal variances assumed	.019	.890
	Equal variances not assumed		

Independent Samples Test

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
TO1	Equal variances assumed	-.051	102	.959	-8.1391E-03
	Equal variances not assumed	-.051	101.923	.959	-8.1391E-03

Independent Samples Test

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
TO1	Equal variances assumed	.1594	-.3243	.3080
	Equal variances not assumed	.1593	-.3242	.3079

NPar Tests (Split Half Test Consolidated Data)

Mann-Whitney Test

Ranks

	Split Half	N	Mean Rank	Sum of Ranks
TO1	First Half	53	52.40	2777.00
	Second Half	51	52.61	2683.00
	Total	104		

Test Statistics[a]

	TO1
Mann-Whitney U	1346.000
Wilcoxon W	2777.000
Z	-.038
Asymp. Sig. (2-tailed)	.969

a. Grouping Variable: Split Half

APPENDIX I

Hypothesis Testing

Crosstabs (H1a Consolidated Data)

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
STG * Future Orientation	70	100.0%	0	.0%	70	100.0%

STG * Future Orientation Crosstabulation

Count

		Future Orientation		
		Not Future Orientede	Future Oriented	Total
STG	Defender	25	6	31
	Prospector	6	33	39
Total		31	39	70

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	29.813[b]	1	.000		
Continuity Correction[a]	27.226	1	.000		
Likelihood Ratio	32.175	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	29.387	1	.000		
N of Valid Cases	70				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 13.73.

Directional Measures

			Approx. T[b]	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	3.975	.000
		STG Dependent	3.738	.000
		Future Orientation Dependent	3.738	.000
	Goodman and Kruskal tau	STG Dependent		.000[c]
		Future Orientation Dependent		.000[c]

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on chi-square approximation

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.653	.091	7.102	.000[c]
Ordinal by Ordinal	Spearman Correlation	.653	.091	7.102	.000[c]
N of Valid Cases		70			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Crosstabs (H1b, Consolidated Data)

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
TO1 * STG	59	100.0%	0	.0%	59	100.0%

TO1 * STG Crosstabulation

Count

		STG		
		Analyzer	Prospector	Total
TO1	Not future	17	6	23
	Future	3	33	36
Total		20	39	59

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	26.936[b]	1	.000		
Continuity Correction[a]	24.088	1	.000		
Likelihood Ratio	28.508	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	26.479	1	.000		
N of Valid Cases	59				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.80.

Directional Measures

			Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	.581	.136	3.068	.002
		TO1 Dependent	.609	.122	3.428	.001
		STG Dependent	.550	.161	2.403	.016
	Goodman and Kruskal tau	TO1 Dependent	.457	.131		.000[c]
		STG Dependent	.457	.133		.000[c]

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on chi-square approximation

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.676	.098	6.920	.000[c]
Ordinal by Ordinal	Spearman Correlation	.676	.098	6.920	.000[c]
N of Valid Cases		59			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Crosstabs (H1c Consolidated Data)

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
TO1 * STG	53	100.0%	0	.0%	53	100.0%

TO1 * STG Crosstabulation

Count

		STG		
		Prospector	Reactor	Total
TO1	Not Future	6	9	15
	Future	33	5	38
Total		39	14	53

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	12.140[b]	1	.000		
Continuity Correction[a]	9.850	1	.002		
Likelihood Ratio	11.417	1	.001		
Fisher's Exact Test				.001	.001
Linear-by-Linear Association	11.911	1	.001		
N of Valid Cases	53				

a. Computed only for a 2x2 table

b. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 3.96.

Directional Measures

			Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	.241	.212	1.031	.302
		TO1 Dependent	.267	.214	1.081	.280
		STG Dependent	.214	.245	.779	.436
	Goodman and Kruskal tau	TO1 Dependent	.229	.128		.001[c]
		STG Dependent	.229	.128		.001[c]

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on chi-square approximation

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	-.479	.135	-3.893	.000[c]
Ordinal by Ordinal	Spearman Correlation	-.479	.135	-3.893	.000[c]
N of Valid Cases		53			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Crosstabs (H2a- Consolidated Data)

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
STG * Past Time Orientation	70	100.0%	0	.0%	70	100.0%

STG * Past Time Orientation Crosstabulation

Count

		Past Time Orientation		
		Not Past Oriented	Past Oriented	Total
STG	Defender	12	19	31
	Prospector	37	2	39
Total		49	21	70

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	25.942[b]	1	.000		
Continuity Correction[a]	23.336	1	.000		
Likelihood Ratio	28.363	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	25.571	1	.000		
N of Valid Cases	70				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.30.

Directional Measures

			Approx. T[b]	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	2.654	.008
		STG Dependent	4.139	.000
		Past Time Orientation Dependent	1.272	.203
	Goodman and Kruskal tau	STG Dependent		.000[c]
		Past Time Orientation Dependent		.000[c]

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on chi-square approximation

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	-.609	.088	-6.328	.000[c]
Ordinal by Ordinal	Spearman Correlation	-.609	.088	-6.328	.000[c]
N of Valid Cases		70			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Crosstabs (H2b Consolidated Data)

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
STG * TO1	51	100.0%	0	.0%	51	100.0%

STG * TO1 Crosstabulation

Count

		TO1		
		Not Past Oriented	Past	Total
STG	Defender	13	18	31
	Analyzer	18	2	20
Total		31	20	51

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	11.782[b]	1	.001		
Continuity Correction[a]	9.852	1	.002		
Likelihood Ratio	13.141	1	.000		
Fisher's Exact Test				.001	.001
Linear-by-Linear Association	11.551	1	.001		
N of Valid Cases	51				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.84.

Directional Measures

			Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	.250	.213	1.078	.281
		STG Dependent	.250	.241	.905	.365
		TO1 Dependent	.250	.241	.905	.365
	Goodman and Kruskal tau	STG Dependent	.231	.102		.001[c]
		TO1 Dependent	.231	.102		.001[c]

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on chi-square approximation

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	-.481	.108	-3.837	.000[c]
Ordinal by Ordinal	Spearman Correlation	-.481	.108	-3.837	.000[c]
N of Valid Cases		51			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Crosstabs (H2c Consolidated Data)

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
STG * TO1	45	100.0%	0	.0%	45	100.0%

STG * TO1 Crosstabulation

Count

		TO1		
		Not Past	Past	Total
STG	Defender	12	19	31
	Reactor	12	2	14
Total		24	21	45

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	8.562[b]	1	.003		
Continuity Correction[a]	6.777	1	.009		
Likelihood Ratio	9.319	1	.002		
Fisher's Exact Test				.004	.004
Linear-by-Linear Association	8.371	1	.004		
N of Valid Cases	45				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.53.

Directional Measures

			Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	.200	.143	1.280	.201
		STG Dependent	.000	.000	.[c]	.[c]
		TO1 Dependent	.333	.216	1.280	.201
	Goodman and Kruskal tau	STG Dependent	.190	.105		.004[d]
		TO1 Dependent	.190	.103		.004[d]

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Cannot be computed because the asymptotic standard error equals zero.

d. Based on chi-square approximation

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	-.436	.121	-3.179	.003[c]
Ordinal by Ordinal	Spearman Correlation	-.436	.121	-3.179	.003[c]
N of Valid Cases		45			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

T-Test (H3a U.S. Managers vs. Brazilian Managers Future Time Orientation)

Group Statistics

	Nation	N	Mean	Std. Deviation	Std. Error Mean
TO1	USA	44	1.6364	1.5111	.2278
	Brazil	22	.5455	1.1843	.2525

Independent Samples Test

		Levene's Test for Equality of Variances	
		F	Sig.
TO1	Equal variances assumed	26.089	.000
	Equal variances not assumed		

Independent Samples Test

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
TO1	Equal variances assumed	2.958	64	. .004	1.0909
	Equal variances not assumed	3.208	52.207	.002	1.0909

Independent Samples Test

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
TO1	Equal variances assumed	.3687	.3542	1.8276
	Equal variances not assumed	.3401	.4086	1.7732

NPar Tests (H3a U.S. vs. Brazilian Managers on Future Time Orientation)

Kruskal-Wallis Test

Ranks

	Nation	N	Mean Rank
TO1	USA	44	37.50
	Brazil	22	25.50
	Total	66	

Test Statistics[a,b]

	TO1
Chi-Square	7.820
df	1
Asymp. Sig.	.005

a. Kruskal Wallis Test

b. Grouping Variable: Nation

Median Test

Frequencies

		Nation	
		USA	Brazil
TO1	> Median	24	4
	<= Median	20	18

Test Statistics[a]

		TO1
N		66
Median		.0000
Chi-Square		7.940
df		1
Asymp. Sig.		.005
Yates' Continuity Correction	Chi-Square	6.521
	df	1
	Asymp. Sig.	.011

a. Grouping Variable: Nation

T-Test (H3b, U.S. vs. Japanese Managers on Future Time Orientation)

Group Statistics

	Nation	N	Mean	Std. Deviation	Std. Error Mean
TO1	USA	44	1.6364	1.5111	.2278
	Japan	32	1.4063	1.5210	.2689

Independent Samples Test

		Levene's Test for Equality of Variances	
		F	Sig.
TO1	Equal variances assumed	.054	.817
	Equal variances not assumed		

Independent Samples Test

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
TO1	Equal variances assumed	.654	74	.515	.2301
	Equal variances not assumed	.653	66.700	.516	.2301

Independent Samples Test

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
TO1	Equal variances assumed	.3520	-.4713	.9316
	Equal variances not assumed	.3524	-.4734	.9336

NPar Tests H3b, U.S. vs. Japanese Managers on Future Time Orientation)

Kruskal-Wallis Test

Ranks

	Nation	N	Mean Rank
TO1	USA	44	39.73
	Japan	32	36.81
	Total	76	

Test Statistics[a,b]

	TO1
Chi-Square	.431
df	1
Asymp. Sig.	.512

a. Kruskal Wallis Test

b. Grouping Variable: Nation

Median Test

Frequencies

		Nation		
		USA	Brazil	Japan
TO1	> Median	0	0	0
	<= Median	44	0	32

Test Statistics[b,c]

	TO1
N	76
Median	3.0000[a]

a. All values are less than or equal to the median. Median Test cannot be performed.

b. Grouping Variable: Nation

c. There are not enough valid cases to perform the Median Test for TO1 * Nation

NPar Tests (H4, U.S. vs. Brazilian Managers on Present Time Orientation)

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
TO1	66	.6667	.9500	.00	2.00
Nation	66	1.3333	.4750	1.00	2.00

Kruskal-Wallis Test

Ranks

	Nation	N	Mean Rank
TO1	USA	44	30.00
	Brazil	22	40.50
	Total	66	

Test Statistics[a,b]

	TO1
Chi-Square	6.581
df	1
Asymp. Sig.	.010

a. Kruskal Wallis Test

b. Grouping Variable: Nation

Median Test

Frequencies

		Nation	
		USA	Brazil
TO1	> Median	10	12
	<= Median	34	10

Test Statistics[a]

		TO1
N		66
Median		.0000
Chi-Square		6.682
df		1
Asymp. Sig.		.010
Yates' Continuity Correction	Chi-Square	5.327
	df	1
	Asymp. Sig.	.021

a. Grouping Variable: Nation

Crosstabs (H5, U.S. vs. Brazil Prospector Strategy Choice)

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
STG * Nation	104	100.0%	0	.0%	104	100.0%

STG * Nation Crosstabulation

Count

		Nation						Total
		USA	Brazil	Japan	4.00	5.00	6.00	
STG	Not Prospector	23	19	20		2	1	65
	Prospector	21	3	12	1		2	39
Total		44	22	32	1	2	3	104

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.265[a]	5	.046
Likelihood Ratio	13.014	5	.023
Linear-by-Linear Association	.116	1	.733
N of Valid Cases	104		

a. 6 cells (50.0%) have expected count less than 5. The minimum expected count is .38.

Directional Measures

			Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	.020	.020	1.005	.315
		STG Dependent	.051	.050	1.005	.315
		Nation Dependent	.000	.000	.[c]	
	Goodman and Kruskal tau	STG Dependent	.108	.045		.048
		Nation Dependent	.029	.019		.01[d]

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Cannot be computed because the asymptotic standard error equals zero.

d. Based on chi-square approximation

NPar Tests (U.S. vs. Brazil Prospector Strategy)

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
STG	104	1.1250	1.4594	.00	3.00
Nation	104	2.0769	1.1881	1.00	6.00

Mann-Whitney Test

Ranks

	Nation	N	Mean Rank	Sum of Ranks
STG	USA	44	37.25	1639.00
	Brazil	22	26.00	572.00
	Total	66		

Test Statistics[a]

	STG
Mann-Whitney U	319.000
Wilcoxon W	572.000
Z	-2.693
Asymp. Sig. (2-tailed)	.007

a. Grouping Variable: Nation

NPar Tests (H6, Brazil vs. Japan on Analyzer Strategy Choice)

Kruskal-Wallis Test

Ranks

	Nation	N	Mean Rank
STG	Brazil	22	28.09
	Japan	32	27.09
	Total	54	

Test Statistics[a,b]

	STG
Chi-Square	.084
df	1
Asymp. Sig.	.772

a. Kruskal Wallis Test

b. Grouping Variable: Nation

Median Test

Frequencies

		Nation	
		Brazil	Japan
STG	> Median	7	9
	<= Median	15	23

Test Statistics[a]

		STG
N		54
Median		.0000
Chi-Square		.085
df		1
Asymp. Sig.		.770
Yates' Continuity Correction	Chi-Square	.000
	df	1
	Asymp. Sig.	.991

a. Grouping Variable: Nation

Independent Samples Test

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
STG	Equal variances assumed	.287	52	.775	7.386E-02
	Equal variances not assumed	.284	44.002	.777	7.386E-02

Independent Samples Test

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
STG	Equal variances assumed	.2575	-.4429	.5907
	Equal variances not assumed	.2596	-.4494	.5971

APPENDIX J

Questionnaire

Questionnaire

Part One:

We are interested in your perceptions of your division or firm strategy as a whole. Note that each strategic type described below is a legitimate strategy. None is inherently "good" or "bad." Please circle the strategy type most like your firm or division.

1. This type of company locates and maintains a 'niche' in a relatively stable product or service area. Generally, the company is not at the forefront of new product or market development, but concentrates instead on a limited range of products or services--doing the best job possible through quality, superior service, low prices, and so forth.

2. This type of company makes relatively frequent changes in, and additions to, its range of products. By responding rapidly to early signals of market needs or opportunities this company tries to be 'first in' in new product or service and market areas--although it may not maintain market strength in all of the areas it enters.

3. This type of company maintains a stable, limited line of products or services and simultaneously moves to follow a selected, promising set of new product developments in other areas. This company is seldom 'first in' with new products or services, but instead may be 'second in' with a more cost effective or better conceived product or service.

4. This type of company does not appear to have a consistent product-market orientation. Unlike competitors, it is not aggressive in maintaining established products or services and markets, nor is it willing to take many risks. This company changes its product or service offering when and where it is forced to by environmental pressures.

Part Two:

Think of the past, present, and future as being in the shape of circles. Now arrange these circles in any way you want that best shows how you feel about the relationship of the past, the present, and the future. You may use circles of different size. When you have finished, label each circle to show which one is the past, which one the present, and which one the future.

Part Three:

Please provide the following demographic information. No information will be used to identify individuals. The data is for research purposes only.

1. **Age**: (Please check appropriate block)

   _____ 20 to 29 _____ 30 to 39

   _____40 to 49 _____ 50 to 59

   _____ 60 and above

2. **Occupation**: _____ (i.e., Manager, Supervisor, CEO)

3. **Gender**: Male_____ Female _____

4. **Education**: (Check Highest Level Completed).

   High School _____ Some College _____

   College Graduate_____ Graduate School _____

5. **Industry**:_____ (i.e., Retail Automobiles, Insurance, Hospital, Government etc.)

6. **Relative Size of Organization**:

   Large_____ Medium _____ Small _____

7. **Nationality**: _____

8. Nation where you attended elementary school if different from #7.

   _____

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