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CULTURE AND THE EFFECTIVENESS OF SUPPLIER DIVERSITY PROGRAMS:
A TEST OF PREDICTORS

by

Gwendolyn Whitfield

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Doctor of Philosophy
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Western Michigan University
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CULTURE AND THE EFFECTIVENESS OF SUPPLIER DIVERSITY PROGRAMS: A TEST OF PREDICTORS

Gwendolyn Whitfield, Ph.D.

Western Michigan University, 2003

Increased globalization and diversity has brought with it unique interdependencies. As we experience demographical shifts unlike any other in U.S. history, the growth rate of minority-owned businesses may represent unprecedented opportunity for corporate buyers to partner with minority suppliers. According to the Minority Business Development Agency, the minority population will represent 37.4 percent of the total U.S. population by the year 2020, and will yield purchasing power of \$3 trillion. Moreover, it is estimated that between the years 2000 and 2050 the majority of new business starts will originate in the minority business community (U.S. Small Business Administration 1994). Minority-owned firms grew from 7 percent of all U.S. firms to 15 percent between 1982 and 1997. These changes have implications for the corporate supply chain, and relationships with minority suppliers have become increasingly important.

Supplier diversity is defined as a proactive business process that seeks to provide all suppliers equal access to supply management opportunities (NAPM, InfoEdge 2001). Supplier diversity programs have been used by firms for over 30 years, yet few minority suppliers have found their way into mainstream processes. One research study found major impediments in supplier diversity programs (Dollinger & Dailey 1989). For

example, minority suppliers face higher transaction costs, experience difficulty in dealing with complex bureaucracy, and sometimes had to deal in a hostile environment. Other studies have found major problems with communication (Krause et. al 1999; Kauffman 2001) and commitment (Krause et. al 1999; Carter et. al 1999). Past research has also emphasized the important role of corporate culture for implementing supplier diversity programs (Min 1999; Carter et. al 1999).

This dissertation examines the relationship between corporate culture and supplier diversity effectiveness. The study examines how buyer's attitudes toward diversity influence spending levels with diverse suppliers. The general hypothesis is that organizations that have constructive cultures for diversity will have higher levels of spending in supplier diversity programs. The research was conducted using a sample from 250 buyers within a large U.S. heavy-equipment manufacturing firm. The research involved collecting attitudinal data using an Internet-mediated survey questionnaire. Effectiveness was measured based on total spending with minority suppliers and was collected using semi-structured interviewing and archival research.

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CHAPTER I

OVERVIEW OF THE RESEARCH

Introduction

Globalization and cultural diversity are on the rise. According to the Minority Business Development Agency, the minority population will represent 37.4 percent of the total U.S. population by the year 2020, and will yield purchasing power of \$3 trillion (MBDA 2000). Moreover, it is estimated that between 2000 and 2050 the majority of new business starts will originate in the minority community (U.S. Small Business Administration 1994).

These shifts in U.S. demography will have economic, political and social implications. For corporations in particular, these trends represent significant changes for supply chain management. The field of supply chain management is concerned with how the processes of making, buying and selling goods and services are organized. It is defined as the integration of people, resources and technology from the raw material stage to the end-product for users and represents an intertwined, complex production and distribution network (Leenders et al, 2002).

Firms are also beginning to recognize supply chain management as a viable source of profit, growth and competitive advantage as companies scramble to cut costs and increase customer value (Lancioni 2000, McGinnis 1999). One important aspect of supply chain management is the purchasing function.

Purchasing can be defined as preparing and placing purchase orders for commodities, supplies and services to minimize total cost and maximize value (Cavinato and Kauffman 2000). According to a 1993 study by The Institute for Supply Management, two-thirds of the CEO's and Presidents surveyed felt that the purchasing function was very important to the overall success of the firm (Bales and Fearon 1993). Purchasing has also been linked to playing a role in corporate strategy formulation and implementation (Ellram 1995). Purchasing professionals rely on their relationships with suppliers in order to carry out their purchasing responsibilities and much research has been conducted about the importance of effective buyer/supplier relationships. We are beginning to see the impact of wide-spread demographical shifts on supply chain management and purchasing professional's relationships with minority suppliers. (Purchasing 1995 and 1996).

Supplier Diversity Overview

The interest in minority suppliers has risen lately partly because diversity is being recognized as a key environmental change of the new century. Workforce as well as business demographics are undergoing dramatic change. For example, from 1987 to 1997 minority businesses grew 168 percent. Currently there are 3.25 million minority owned businesses that generate \$495 billion in sales revenue and employ 4 million people (NAPM InfoEdge 2001). Minority-owned businesses have clearly become a fast-growing segment of the U. S. economy, growing from less than 7 percent of businesses in the U.S. to almost 15 percent by 1997 (U. S. Small Business Administration, 2001). Yet, despite these robust figures and the economic contributions of minority businesses, little

academic research has been conducted about the role of supplier diversity in helping to support the functioning of the enterprise.

Supplier diversity is defined as a proactive business process that seeks to provide all suppliers equal access to supply management opportunities (NAPM, InfoEdge 2001). It promotes supplier participation representative of a diverse business community and encourages economic development. Although supplier diversity programs have been around for over 30 years, few have been fully institutionalized, and many have not succeeded as planned. For example, minority suppliers face higher transaction costs, experience difficulty in dealing with complex bureaucracy, and had to sometimes operate in a hostile environment (Dollinger and Dailey 1989). Other major problems include communication (Krause et. al 1999; Kauffman 2001) and corporate commitment (Krause et. al 1999). As interest in supplier diversity mounts, it brings with it an opportunity to increase the amount of scholarly work.

While researchers have noted the importance of corporate culture for implementing supplier diversity programs (Min 1999; Carter, Auskalnis and Ketchum, 1999), there are no studies about the complexities between culture and supplier diversity. To date, no empirical research has been conducted to establish a relationship between culture and supplier diversity. This dissertation research takes an important step toward establishing the link between a buying firm's culture and the effectiveness of supplier diversity programs of that firm.

Primary Research Questions

There has been a great deal of discussion about diversity and the prolific growth of minority-owned businesses in academic literature and the popular press. Increased workforce and population diversity, and the growth rate of minority-owned businesses has brought with it unique interdependencies among differing cultures, people and social systems. The growth rate of minority-owned businesses may present unprecedented opportunity for firms to use innovative ways of partnering with minority suppliers to access new markets and adapt to a changing external environment.

Supplier diversity was first introduced to U.S. businesses in the early 1970's in response to federal legislation. Although the concept of supplier diversity has existed for over three decades, few minority firms have found their way into the mainstream processes of buying organizations (Dollinger, Enz and Dailey 1991.) Previous studies have identified corporate culture as an important component of supplier diversity, but unfortunately researchers have not conducted any empirical studies that have sought to operationalize culture. This dissertation builds on the findings of previous studies, and seeks to provide insight about how organizational culture affects the level of spending with minority suppliers.

The goal of this dissertation is to investigate the linkage between culture and supplier diversity effectiveness by answering (a) what types of organizational culture exist among buying units (b) is there a relationship between a unit's organizational culture and the level of spending with diverse suppliers and (c) if there is a relationship, what is its nature?

The question of effective supplier diversity initiatives is an important one to consider as demographics shift, minority-owned businesses increase, and the challenge of managing scarce resources in an ever-changing global economy escalates. Studies have shown that supplier diversity may provide unprecedented business opportunities for firms seeking to enter new markets and for economic empowerment of communities. Supplier diversity processes can result in job development and economic growth in declining urban areas, and indirectly they may lead to additional customers for the buying firm (Saddler 1994). Furthermore, as minority businesses are strengthened, neighborhoods and cities improve because minority businesses provide jobs for citizens and economic vitality to the community (Makower 1994). This research makes a scholarly contribution by investigating the theoretical linkage between organizational culture and supplier diversity effectiveness.

The culture of organizations is reflected in shared values and beliefs and guides the behavior of organizational members such as buyers. Culture sets the pattern for activities such as supplier diversity programs and it influences the personal styles exhibited by members. In this research, these culture styles range from cooperative and achievement-oriented to competitive and dependent.

In organizations with constructive cultures, members are encouraged to interact with others and approach tasks in ways they help them meet higher order needs such as satisfaction. In passive-defensive cultures members believe they must interact with others in defensive ways that will not threaten their own security. In aggressive-defensive cultures, members are expected to approach their work in forceful ways to protect their status. The behaviors promoted by defensive cultures are generally less productive than

those being classified as constructive; moreover, they are less likely to be associated with the effective management of diversity (Cooke 1995).

The primary purpose of most supplier diversity programs is to increase the number of diverse suppliers and to improve the amount spent with those suppliers. In order to determine how well a supplier diversity program is performing, it is imperative that one consider the level of spending as one indicator of successful programs. This research defines supplier diversity effectiveness as the level the spending with diverse suppliers. It is recognized that other factors such as development, supplier perception and long-term alliances may influence effectiveness, but this research will focus on level of spending.

Theoretical Framework

The conceptual model in Figure 1 below displays the theoretical framework for this research. This conceptual framework will explain the main things that will be studied, the key constructs, factors and variables, and the presumed relationships among them.

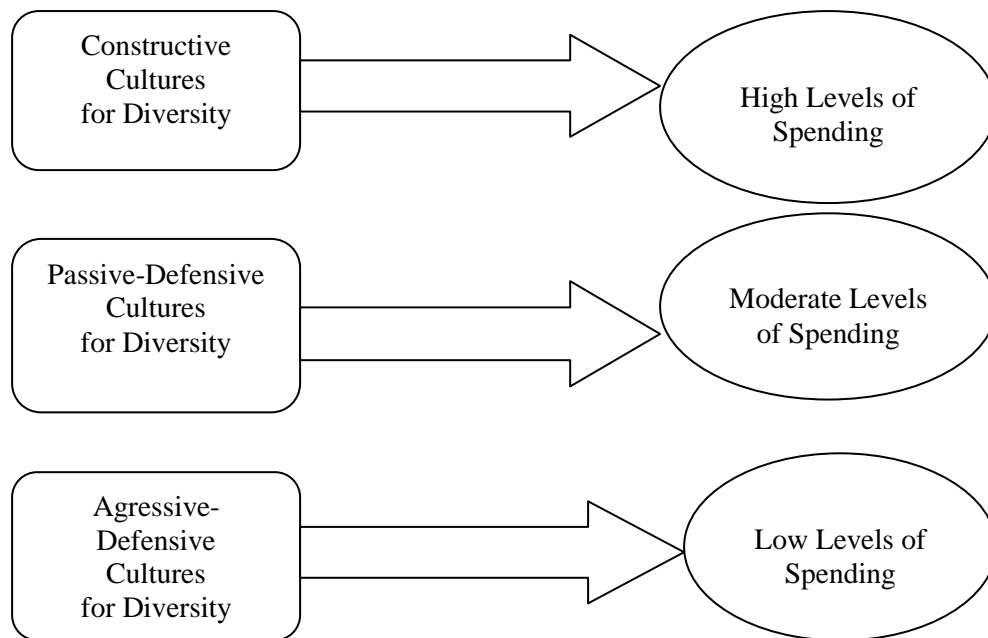


Figure 1. Conceptual Model

This research will test the theory that level of spending is dependent on the culture of the buying unit. Constructive cultures should be related to high levels of spending with diverse suppliers because this type of culture promotes diversity and productive interpersonal relations among people with different backgrounds. When an organization's culture promotes diversity from within, those values will be reflected in the ways in which buyers interact with external stakeholders such as minority suppliers. If buyers work in an environment where all people are made to fit in and are valued, they will reflect those values externally. Likewise, if the internal culture suppresses differences and does not fully collaborate with people of diverse backgrounds as reflected in defensive cultures, that attitude will be reflected in relationships with minority suppliers as well.

Research Methodology

The research questions were examined using a combination of techniques. A survey designed to assess organizational cultures for diversity was used as well as archival research and informal interviews. This integration of research techniques within a single project has the potential to open up opportunities in all phases of the design, data collection and analysis processes (Sieber 1992).

The survey measurement instrument, Organizational Cultures for Diversity Inventory (Cooke 1989), is designed to determine an organization's culture for diversity in terms of the behaviors and norms that are expected of members. The inventory presents a list of statements that describe some of the behaviors and 'personal styles' that might be expected or implicitly required of organizational members. Some of the behavioral norms measured by the inventory promote diversity and productive interpersonal relationships among people with different backgrounds. Other culture norms that are measured are dysfunctional and lead to suppression of differences and personal initiative.

In the Table 1 below, the Organizational Cultures for Diversity Inventory (OCDI) measures 12 specific cultural norms or normative beliefs that are clustered into three general types of cultures: Constructive, Aggressive-Defensive, and Passive-Defensive.

| | | | |
|----------|------------------------|-------------------|----------------------|
| CULTURE: | Constructive | Passive-Defensive | Aggressive-Defensive |
| STYLE: | Achievement | Approval | Perfectionist |
| | Self-Actualizing | Conventional | Competitive |
| | Humanistic/Encouraging | Dependent | Power |
| | Affiliative | Avoidance | Oppositional |

Table 1. Types of Cultures

As a part of organizational culture, behavioral expectations are considered to be shared and enduring in nature. The expectations held in common by the members of a group or organization determines the ways in which all members of the organization are expected to approach their work and interact with others (Homans 1974). These behavioral norms are typically considered an important part of groups or organizational culture because they reflect the basic assumptions and values held in common by members (Homans 1974; Martin & Schiel 1983; Schein 1985).

At the individual level, the strength of normative beliefs for these styles is demonstrated by self-reporting the extent to which the behaviors associated with each style is expected. At the level of shared behavioral expectations, the strength of the norms is represented not only by members' reports of the extent to which the behaviors are required (based on aggregated responses), but also by the extent to which respondents agree about these expectations. In organizations where there is a great deal of consensus along these measures, these shared behavioral norms demonstrate a strong organizational

culture and a defined pattern of underlying values and ways of seeing things (Sathe 1985; Kilmann et al. 1986; Cooke & Rousseau, 1988).

The effectiveness of supplier diversity was measured using archival methods and was based on the amount of spending and the percentage of spending with diverse suppliers. The idea underlying this research is that units that have constructive cultures will value individual differences and consequently have effective supplier diversity programs. On the other hand, defensive cultures suppress differences and don't value diversity.

The informal interviews and archival research revealed that it was possible for the 23 individual buying units within the firm to have different levels of spending with diverse suppliers. As shown in Table 2, the units have minority-spending ranging from less than one percent to twenty-two percent.

| UNIT | MINORITY SPENDING (Percentage of Total) | LEVEL (For Comparison) |
|------|--|---------------------------|
| 2 | 22% | High |
| 4 | 4.5% | High |
| 5 | 3.6% | High |
| 1 | 3.4% | High |
| 2 | 3.0% | Moderate |
| 8 | 2.00 | Moderate |
| 7 | 2.5% | Moderate |
| 3 | 2.5% | Moderate |
| 6 | 2.3% | Moderate |
| 9 | .6% | Low |
| 11 | .9% | Low |
| 10 | 1.4% | Low |

Table 2. Unit Levels of Spending

In an effort to distinguish variation in minority spending, the units were placed in categories for the purpose of comparison. Eleven out of the twelve units had spending levels under 5 percent. The unit with 22 percent spending could be considered an outlier. The cut off points were determined by grouping numbers that were as close together as possible.

Units with 3.4-22% minority spend were considered to have high spending levels. Units with spend from 2-3.3% were considered to have moderate spending levels, and units with less than 2% were considered to have low levels of spending in supplier diversity. A sample of three to five units at each spending level was targeted. There were 23 units overall. Table 2 identifies the twelve units that comprise the sample. This includes three units with high spending levels, five units with moderate and three with low.

Scope of the Dissertation

The concepts in Figure 1 are not all inclusive. All of the relevant factors and linkages that influence effective supplier diversity programs have not been identified. This dissertation will investigate the presence of a relationship between cultures for diversity in a multi-unit organization and the levels of supplier diversity spending within those units. This dissertation will not investigate other factors such as buyer's personal bias that may influence supplier diversity effectiveness beyond culture.

Contribution of the Research

Although there are issues that this dissertation will not examine, what this research does investigate is important for several reasons. First, the proliferation of minority business growth and population increases has created new challenges and opportunities for competing and managing resources. Second, little academic research had been conducted in this area and the need for understanding supplier diversity is important because of the new competitive landscape within which firms operate. Third, while culture has been casually linked to supplier diversity, it has not been empirically tested. This dissertation will take a critical step towards investigating the theoretical linkages between a firm's culture and the success of supplier diversity programs. The primary purpose is to uncover the cultural reality of each unit in the firm, determine the effectiveness of their supplier diversity program and analyze the relationship between organizational culture and supplier diversity effectiveness.

CHAPTER II

LITERATURE REVIEW

Introduction

This research spans a number of different areas that are both distinct and interrelated. Literature reviews were conducted in purchasing, supply management, minority businesses, supplier diversity and organizational culture. The reviews revealed a number of interesting trends and environmental factors that present challenges and opportunities for firms seeking competitive advantage.

Purchasing and Supply Chain Management

Today, a typical manufacturing firm procures thousands of products from hundreds of suppliers, resulting in a complex procurement process. Purchasing, as a business function, has a significant impact on many key components of a firm's operations such as acquisitions, raw materials, invoicing and logistics. The purchasing function helps to create a competitive advantage by developing successful relationships with suppliers and internal clients. These strategic relationships help improve new product development, speed up market cycle times, drive out costs from both the firm and their suppliers' operations, and achieve strategic financial results (Wisner and Tan 2000).

A buyer is a purchasing professional who understands the industry in which he competes and manages resources and relationships to achieve organizational goals such as getting the right products at the right time for the right prices. Buyers achieve these outcomes through effective negotiations and contracting, practices which have evolved dramatically over the last 90 years.

It is difficult to establish, with complete accuracy the first occurrence of commercial negotiations, however, early negotiations can probably be traced back to transactions along the Chinese trading route. By the 1920's, the principal function of purchasing was to buy for less, with the initial first cost being the primary function for many firms (Cavinato 2000). The oil shock of the 1970's, however, resulted in significant changes in the development of supply chain planning and shifted the focus from buying for less to the total cost of ownership (Cavinato 2000).

Many firms reacted to this shift with a short-term focus in order to ensure cost, reliability and continuity, resulting in win/lose negotiations with suppliers. Soon, however, buyers realized that more cooperation and collaboration was needed to achieve continuous improvements. The need for total cost to market improvements and responsiveness to markets, and the need for increased levels of integration and collaboration among suppliers and purchasing firms, gave rise to the term "strategic purchasing". Today many say that purchasing has evolved into supply chain management, which implies a broader range of responsibility as well as many layers of negotiation.

For the purposes of this dissertation, supply chain management has been defined as the integration of supply chain activities to achieve sustainable competitive advantage (Handfield and Nichols 1999). It integrates several key functions including purchasing. While the concept of supply chain management may still be evolving, the term was initially coined to describe the integration of logistics and physical distribution functions used in wholesaling and retailing to reduce delivery lead times. A widely accepted approach to supply chain management is an integrated one whereby within firm and between firm integration is emphasized in order to provide value to the end user.

Manufacturers and service providers are now using the term to describe integration efforts and collaboration between buyers and suppliers. Overall, however, it can be said that the goals of integrating supply chain activities are to reduce cost and to improve quality and delivery timing, which requires good relationships with suppliers.

The concept of the supply chain management appeared in literature only as recently as the 1980's. However, the assumptions that support the concept can be traced back to the 1960's when the flow of materials began receiving a lot of attention. Researchers and practitioners recognized the linkages that exist in the supply of materials and the flow of information. They began to consider all members in this chain as critically important. The short-term objective of supply chain management is concentrated primarily on increasing productivity and reducing inventory and cycle times. The long-term goals are more strategic in nature and include customer satisfaction, increased market share and profits.

Purchasing is a critical link in the chain because it connects the sources of supply with the organization. For example, if suppliers are involved early in production design, manufacturers can select the best and most economical components, materials and technologies from alternatives (Burt and Soukup 1985). Further, supplier involvement in product design and continuous improvement activities can have a positive impact on competitive advantage and firm performance (McGinnis and Vallopra 1999; Vonderembse and Tracey 1999).

The term “supply chain management” is a new management philosophy that fully enables firms to compete in an evolving landscape. The intensity of global competition and the gaining popularity of the Internet as a business tool has created a competitive environment dominated by low cost, high quality products and services in a highly innovation competitive environment. Manufacturers have had to incorporate supplier strengths and technologies in new product development into their processes (Morgan and Monczka 1995). Hence, supply chain management has been adopted to conceptualize the focus on integrating and partnering with suppliers, and integrating the logistics and transportation functions to effectively manage the supply chain.

A great deal of the recent literature on supply chain management focuses on integration processes and supplier alliances to create customer satisfaction and realize business goals (Carter 2000). The increased need for supplier integration and partnering has important implications for supplier diversity since it is estimated that the majority of new business starts will originate in the minority community. It will become increasing

important for firms to develop partnerships with a diverse base of suppliers in order to compete in the newly emerging landscape.

Minority Business in the U.S.

The force of minority businesses has changed dramatically in the last 20 years. Minorities owned fewer than 7 percent of all firms in the U.S. in 1982, but by 1997 this number soared to 15 percent. Minorities owned more than 3 million businesses in 1997 and generated more than \$591 billion in revenues. Of that 15 percent, 5.8 percent were owned by Hispanics, 4.4 percent by Asians, 4.0 percent by Blacks and 0.9 percent by Native Americans. Of minority owned businesses, 39.5 percent were Hispanic-owned, 30 percent were Asian-owned, 27.1 percent Black-owned, and 6.5 percent American Indian-owned. What has led to this prolific business growth? In part, it can be explained by recent demographical trends.

As the 2000 census figures in Table 3, page 18, indicate, minorities comprised 30% of the U.S. population. During the later part of the last century, many Asians and Hispanics immigrated to the U.S., and some apparently brought an entrepreneurial spirit along. Table 3.0 shows that in 1997, about 15 percent of the firms in the U.S. were owned by minority business owners. This is up from just seven percent in 1982.

Like other businesses, minority-owned businesses produce goods and services, make innovative contributions, create jobs, provide wages and contribute to the support of government through taxes. These are important businesses activities that contribute to the health of the American economy.

| Race/Ethnic Group | Population | Population Percent |
|-------------------|-------------|--------------------|
| All U.S. | 281,421,906 | 100.0 |
| Non-Minority | 194,552,774 | 69.1 |
| All Minorities | 86,869,132 | 30.9 |
| Black | 34,658,190 | 12.3 |
| Hispanic | 35,305,818 | 12.5 |
| Native American | 02,475,956 | 0.9 |
| Asian | 10,641,833 | 3.78 |

Table 3. Minority Population, 2000¹

| | FIRMS BY NUMBER | FIRMS BY PERCENT |
|-----------------------|-----------------|------------------|
| Total U.S. Firms | 20,821,934 | 100.0 |
| Non-minority Owned | 17,782,901 | 85.40 |
| All Minority-Owned | 3,039,033 | 14.60 |
| Black-Owned | 823,499 | 3.96 |
| Hispanic-Owned | 1,199,896 | 5.76 |
| Native-American-Owned | 197,300 | 0.94 |
| Asian-Owned | 912,959 | 4.38 |

Table 4. Firms by Race and Ethnic Origin, 1997 ²

Minority-owned firms were represented well in many industries in 1997 as displayed in Table 5. At the national level, the largest proportion of businesses was in the services industry (42.7 percent). Following the service industry is retail trade (14.0), construction (11.2 percent), and finance and insurance (10.8). Hispanic-owned businesses were distributed similarly to the average business distribution. Black-owned businesses were more heavily concentrated in the transportation, communications, public utilities

¹ The percentages may not sum to 100 because some people classify themselves as bi-racial (US Dept. of Commerce, Bureau of Census, Population Data 2000).

² The percentages may not sum to 100 because Hispanics may be of any race and may be double counted. (US Dept of Commerce, Bureau of Census, 1997).

and service sectors. A good proportion of the Native-American-owned firms were concentrated in agricultural, construction and manufacturing industries. Asian-owned firms tended to have greater than average proportions in the retail, wholesale and services industries.

| Major Industry | Total | Black | Hispanic | Native America | Asian |
|----------------|-------|-------|----------|----------------|-------|
| All | 100.0 | 3.95 | 5.76 | 0.95 | 4.38 |
| Agriculture | 2.38 | 1.51 | 3.34 | 4.53 | 1.42 |
| Mining | 0.61 | 0.03 | 0.16 | 0.48 | 0.07 |
| Construction | 11.21 | 6.86 | 12.72 | 13.91 | 3.04 |
| Manufacturing | 3.31 | 1.27 | 2.13 | 3.40 | 2.55 |
| Transportation | 4.42 | 8.69 | 7.05 | 3.19 | 4.11 |
| Wholesale | 3.83 | .99 | 2.62 | 2.21 | 5.52 |
| Retail | 13.87 | 10.63 | 12.92 | 7.49 | 21.43 |
| Finance | 10.75 | 4.61 | 4.72 | 2.34 | 7.53 |
| Services | 42.70 | 53.14 | 41.71 | 17.31 | 44.47 |
| Unclassified | 7.11 | 12.28 | 12.66 | 45.23 | 9.91 |

Table 5. Minority-Owned Firms by Industry, 1997.

The number of minority-owned businesses has grown dramatically since 1982, as shown in Table 6. Minority-owned firms increased at rates from three to seven times those of non-minority owned firms, by 55 percent from 1982 to 1987, 68 percent between 1987 and 1992 and 30 percent from 1992 to 1997. One reason for the growth in minority-owned firms is the rate of minority population growth. In addition, the minimal growth

rates of non-minority owned firms match the low growth rates of the non-minority population.

| FIRMS | GROWTH RATES (Percent) | | |
|-----------------------|------------------------|-----------|-----------|
| | 1982-1987 | 1987-1992 | 1992-1997 |
| All U.S. Firms | 14 | 26 | 7 |
| Non-minority Owned | 11 | 22 | 4 |
| All Minority-Owned | 55 | 68 | 30 |
| Black-Owned | 38 | 46 | 26 |
| Hispanic-Owned | 73 | 76 | 30 |
| Native American-Owned | 46 | 310 | 84 |
| Asian-Owned | 72 | 46 | 30 |

Table 6. Growth in Number of Minority-Owned Firms, 1982-1997.³

Table 6 also shows the rapid business growth that occurred across minority groups. Black-owned businesses increased their numbers by 38 percent from 1982 to 1987, by 46 percent from 1987 to 1992, and by an additional 26 percent from 1997-1992. The 15-year growth rates for Hispanic-owned businesses were 73 percent, 76 percent and 30 percent. Asian-owned businesses increased by 72 percent, 46 percent and 30 percent over the same three periods. The most noticeable percentage increases were in Native American-owned businesses, which grew at about nine times the rate of U.S. firms overall. It is estimated that these businesses grew 47 percent from 1982 to 1987, 310 percent from 1987 to 1992, and 84 percent from 1992 to 1997.

³ Source: U.S. Small Business Administration, Office of Advocacy, based on data from U.S Dept. of Commerce, Survey of Minority-Owned Business Enterprises.

The prolific growth in Native American-Owned firms appears to reflect strong growth from a comparatively small base of firms. The growth may be attributable, in part, to specific government policies supporting business growth. The 1988 Indian Gaming Regulatory Act made it possible for federally recognized tribes to legally run casinos on Indian lands.

In the black community, business growth exceeded population growth over the three periods listed. The growth in Black-owned businesses may reflect increased opportunity, greater equality, better education, and government policies and laws. Activism for greater equality in government contracting processes, and the civil rights movement pushed African Americans toward greater equality in business opportunities and resulted in the creation of supplier diversity programs to facilitate relationships between minority-owned firms and larger corporations.

Minorities made up about 30.9 percent of the total U.S. population in 2000 but owned just 15 percent of all businesses in the U.S. in 1997. Blacks and Hispanics were underrepresented in the minority business population: Hispanic Americans accounted for 12.5 percent of the population in 2000, but owned only 5.8 percent of the U.S. firms in 1997 while Blacks, comprised 12.3 percent of the U.S. population but only 4 percent of business owners. On the contrary, Asians and American Indians had business representation equal to or greater than their population numbers. American Indians and Alaska Natives constitute 0.9 percent of the population and 0.9 percent of businesses, while Asian and Pacific Islanders constitute 3.6 percent of the population and 4.4 percent of businesses.

Clearly minority-owned businesses have become a fast growing segment of the U.S. economy. The minority-owned business population grew dramatically since the 1980's, more than doubling their share of U.S. firms. The fast growth rate of Hispanic-owned businesses corresponds with the fast growth of that population, and growth in both is expected to continue. The significant growth rate of Native American-owned businesses may be the result of a low initial rate of business ownership and or strong governmental support. Despite the strong growth rates for Hispanic and Native American business owners, blacks remain the least represented in the U.S. business sector as reflected in the number of black-owned businesses, the dollar value of Black-owned business receipts per Black population and survival rates of new businesses owned by Blacks when compared with other business groups (U.S. Small Business Administration, 2001)

Supplier Diversity

As a strategy to attract a diverse supplier base and possibly gain additional market share, many buying firms have established supplier diversity programs. A supplier diversity program is a proactive business process that seeks to provide suppliers equal access to supply management opportunities (NAPM, InfoEdge 2001). It promotes supplier participation representative of the diverse business community and encourages economic development. For example, firms with supplier diversity programs develop and implement processes aimed to seek out diverse suppliers. The purpose of these programs

may include developing new suppliers, strengthening the minority business community and or corporate social responsibility.

But despite their salutary goals, not all supplier diversity initiatives have succeeded as planned. The small amount of research conducted on supplier diversity has focused mainly on problems and secondarily on best practices (Giunipero, 1980; Dollinger and Dailey 1989; Dollinger, Enz and Dailey 1991; Krause, Ragatz and Hughley 1999). The trade literature in periodicals such as Purchasing Magazine has also centered primarily on the problems in supplier diversity (Purchasing 1994).

A study conducted by Dollinger and Dailey in 1989 found there were major impediments to successful transactions between large corporations and minority suppliers and that there were many differences between minority suppliers and non-minority suppliers. For example, minority suppliers do not face the same conditions and transaction costs as non-minority suppliers and corporate purchasing personnel. Transaction costs are the administrative costs of doing business (opportunity costs, small numbers, business uncertainty, negative atmosphere, etc.). Additionally, the study found that minority suppliers experienced difficulty in dealing with the complex bureaucratic nature of large purchasing units and sometimes have to deal in a hostile and unfriendly environment.

Minority suppliers also have to contend with insuring the survival of their businesses and maintaining quality performance. Dollinger and Dailey's study also found that many minority suppliers experienced difficulty marketing their businesses to the purchasing firm and had problems sending and receiving critical business information. In

addition, the study revealed that minority suppliers tended to favor multiple criteria for evaluation at higher rates than did buyers. In other words, minority suppliers wanted to be evaluated in several areas as opposed to a single area. Buyers were also less enthusiastic about corporate programs aimed at identifying, developing and training minority suppliers than were the buyer's managers and other senior-level personnel. These findings confirmed results from an earlier study that compared differences between minority and non-minority suppliers (Giunipero 1980).

Early on, the problems that were identified were lack of minority vendors to supply products, lack of minority vendors near operating units, and lack of qualified engineering, management and sales personnel in minority firms (Giunipero 1980). An additional problem identified was the unjustified perception that conducting business with minority suppliers resulted in lower quality products. The results showed that poor quality ranked low as a problem buyers experienced with minority suppliers. The research also disclosed that firms that acknowledged the problem differences between minority and non-minority suppliers had more successful supplier diversity programs. This implies that specific issues with minority firms could be quickly defined and remedied.

Nearly two decades later, research was conducted from the perspective of the minority supplier (Krause, Ragatz and Hughley 1999). This study sought to gain insight about what might undermine a buying firm's supplier development efforts with minority suppliers. Supplier development was defined in this study as the effort a buying firm expends in order to increase supplier performance and capabilities to help meet the

buying firm's supply needs (Krause 1997). The study revealed that minority suppliers with smaller sales volume and less dependency on the buying firm gave lower ratings to the effectiveness of supplier development programs and perceived less corporate commitment from the buying firm. Both large and small suppliers felt the buying firm used minority suppliers for governmental compliance and reporting purposes only and felt powerless to negotiate with buyers. Results were neutral in response to a statement about racial biases hurting minority supplier development programs. In terms of the effectiveness of the supplier development program, the minority suppliers did not feel that supplier development programs reduced obstacles to doing business with the buying firm.

Another finding identified in Krause's 1999 study was the need for improvement in communication. Specifically, suppliers with smaller sales volume felt they experienced difficulty advertising their products, and obtaining information about the buying firm and their bidding process. Those with shorter-term business relationships with the buying firm also felt that it was difficult to obtain bidding information. Research conducted as recently as 2001 also points to the importance of communication systems for successful supplier diversity programs (Kauffman 2001).

The stream of research related to best practices cites the importance of top management commitment as a key success factor for supplier diversity programs (Gumpert 1979; Giunipero 1981; Kauffman 2001; Min 1999; Carter, Auskalnis and Ketchum 1999.) Top management commitment includes, for example, direct communication with suppliers and attendance at prominent conferences and meetings.

Other success factors that were cited in the studies included goal setting, dedicated resources and personnel, effective feedback, rewards and adequate evaluation processes. Min's 1999 study stressed that many points of integration need to be monitored such as operational processes, procedures, practices, and interfaces, as well as communication systems. The research concluded that corporate culture should encourage buyers to view supplier diversity as an ingrained way of doing business, but it falls short of providing any insight about how this can be accomplished.

The purpose of this dissertation is to examine how organizational culture influences the effectiveness of supplier diversity programs. This is an important contribution to supply chain literature because it will seek to confirm the recent research finding that misaligned corporate culture is a potential obstacle for implementing a supplier diversity program (Min 1999).

Organizational Culture

Organizational culture is an important consideration for firms seeking to adapt to external forces such as the changing demographics and supplier diversity issues outlined in the previous chapters. A successful firm manages its organization by adapting itself to the external environment and translating those adaptations into behavioral expectations for organizational members. For example, as a firm develops and copes with the issues related to changing demographics, members of the firm learn how to view and adapt to increased diversity.

In the 1980's, scholars began to recognize the importance of organizational culture in the field of organizational behavior. We saw a major emphasis in theoretical modeling and empirical research on this topic (Hofstede 1986; Jelinek, Smircich and Hirsch 1983; Kilmann, Saxton, and Serpa 1985; Sathe 1983). Although interest in the area of organizational culture grew in the 1980's, no strong consensus among behavioral scientists and practitioners has been developed about a definition of this concept.

Ed Schein, however, was especially influential as management scholars began adopting the concept of culture. Schein was influential because he, more so than others, articulated a conceptual framework for analyzing the culture of organizations (Hatch 1993). Schein defines culture as the shared values, beliefs and assumptions that shape and guide social systems, group relations and communication processes (1992). Schein claimed that beliefs and values are taught to new members and if validated by success, undergo cognitive transformations into assumptions. He also believes that culture is embedded into environments and that through culture organization members are taught about the organization's preferred values, beliefs, expectations and behaviors (Schein 1983).

Schein believes there are three basic functions that organizational culture performs (1985):

1. Survival in and adaptation to the external environment
2. Integration of its internal processes to ensure the capacity to continue to survive and adapt
3. Anxiety reduction

According to other scholars, culture, conceived as shared values and beliefs, fulfills several other functions. First it creates a sense of identity for organizational

members (Deal and Kennedy 1982). Second, it generates commitment to macro-ideas (Martin and Siehl 1983; Peters and Waterman 1984). Third, culture enhances social system stability (Louis 1982) and lastly, it can serve as a sense-making device to guide and shape behavior (Louis 1982; Meyer 1981; Pfeffer 1981; Martin and Siehl 1983). Moreover, organizational culture may be a lever or key by which strategic managers can influence and direct the course of their organizations (Tichy 1982). The belief is that firms that have internal cultures that are supportive of their strategies are more likely to be successful (Smircich 1993).

Scholars have acknowledged that there may be multiple organizational subcultures, or even countercultures, competing to define the nature of the organization. For academics, culture provides a conceptual bridge for micro and macro levels of analysis, as well as a bridge between organizational behavior and strategic interests (Smircich 1993).

In addition, interest in the topic of culture by practitioners can be seen by the success of books stressing the cultural determinants of corporate performance (Deal and Kennedy 1982; Ouchi 1981). In studies of difficulties in strategic implementation, and comparisons of the performance of American firms with that of European and Japanese competitors, researchers began to include the concept of culture as a plausible explanation for the differences in effectiveness when few structural characteristics of the organizations were visible (Pascale and Athos 1981).

This dissertation seeks to uncover how an organization's culture for diversity shapes buying behavior and consequently influences the firm's ability to adapt to

changing external forces of changing demographics. The research argues that firms that have cultures that promote diversity will have effective supplier diversity programs.

CHAPTER III

RESEARCH DESIGN

Introduction

In 2002, this research framework was presented to several organizational members attending an Executive Council meeting of the Integrated Supply Management Program at Western Michigan University. This council is comprised of business executives and academics that meet regularly to advance the curriculum of the Integrated Supply Management Matrix Program in the Department of Management at Western Michigan University. The business executives assist with developing the curriculum, recruiting students, and identifying internship and career opportunities in the supply chain management field. It has included representatives from such organizations as DaimlerChrysler Corp., Ford Motor Co., Harley-Davidson Motor Co., Haworth Inc., Johnson Controls, Kellogg Co., Pharmacia Corp., and Stryker Corp. and others.

One firm from the Executive Council had recently begun efforts to improve their supplier diversity program. This firm expressed a particular interest in participating in this dissertation research. Interviews were conducted with two managers from the firm to discuss organizational structure, supplier diversity issues and information requirements.

Based on the interviews with managers, the researcher believed their firm would be an excellent object of study because of the many buying units that existed within the

firm. Similar to much of the past research in supplier diversity, one firm from a single industry was chosen for this dissertation. Focusing on a single industry controls for the variance that may result from specific industry conditions. However, in order to generalize outside of this specific firm, other firms in the industry would need to be studied.

Research Propositions

This research's first proposition is that there are different cultures within the buying units of this firm, and levels of spending with diverse suppliers will vary with an individual unit's culture. The second proposition is that the presence of a constructive culture will be associated with high levels of spending with diverse suppliers. The third proposition is that the presence of a passive-defensive culture will be associated with moderate levels of spending with diverse suppliers. The fourth proposition is that the presence of an aggressive-defensive culture will be associated with low levels of spending with diverse suppliers.

Measures

A preexisting measure, Cooke's Culture for Diversity Inventory, was identified and adapted. This self-reporting attitude scale measures 12 sets of normative beliefs. Each of the 12 styles is measured by ten items describing behaviors that might be expected or implicitly required of members in the organization under study. On a Likert scale, respondents are asked to indicate the extent to which the particular behavior "helps people fit it" and "meet expectations" in the organization. There are multi-item scales for

each construct. The scale is 1 to 5 with 1 representing ‘not at all’ and 5 representing ‘to a very great extent’. Scale scores range from 10 to 50. In addition to an overall aggregate culture for the firm, responses from members within each of the twelve units will be determined by taking an average of the cultural profile for each unit. In other words, scores for each of the twelve styles will be averaged for each unit to determine the culture type of the individual units.

The inventory is being used to measure shared and enduring behavioral expectations as well as individual normative beliefs. Shared behavioral expectations are those normative beliefs that are held in common by members of a group or organization. (Homans 1974) According to Cooke and Szumal (1993), as components of organizational culture, behavioral expectations are considered to be shared and enduring in nature. These expectations specify the ways in which members of an organization are expected to approach their work and interact with others. The shared behavioral expectations in the measure are associated with three general types of cultures: Constructive, Passive-Defensive and Aggressive-Defensive.

Empirical justification for grouping the styles into the Constructive, Passive-Defensive and Aggressive-Defensive clusters is provided by extensive research on the Life Styles Inventory upon which Cooke’s measure was based (Cooke & Szumal 1993). Studies based on principal components analysis, cluster analysis and smallest space analysis have identified these three underlying factors or empirical clusters (Cooke & Lafferty 1982/1989). Clinical analysis of organizations, studies based on critical incidents methods, and statistical analysis of earlier versions of the culture inventory support the clustering norms for these styles into three categories (Cooke & Fisher 1985, Gundry

1993, Cooke & Rousseau 1988). As outlined in Chapter 4, the results of this research also support the clustering norms for these styles.

The instrument has 120 questions designed to assess 12 types of constructs in three broad culture categories:

Constructive Cultures:

Reflects an organization that promotes diversity, productive interpersonal relations among people with different backgrounds, and the accomplishment of individual and organizational goals.

Passive-Defensive:

Reflects an organizational culture that emphasizes differences but does not integrate diverse groups and individuals in a collaborative manner.

Aggressive-Defensive:

Reflects a culture in which behavioral norms suppresses diversity, individual differences and personal initiative.

As noted in Table 7, page 33, constructive cultures exist when organizational members are encouraged to interact with others to meet higher-order satisfaction needs. In aggressive-defensive cultures, members are expected to approach tasks in forceful ways to protect their status and security. Members in passive-defensive cultures believe they must interact with people in ways that will not threaten their own security.

| Culture Type | Culture Style | Description |
|----------------------|--|---|
| Constructive | Achievement Self-Actualizing Humanistic/Encouraging Affiliative | Members are encouraged to interact with others to meet higher-order satisfaction needs |
| Passive-Defensive | Approval Conventional Dependent Avoidance | Members believe they must interact with people in ways that will not threaten their own security |
| Aggressive-Defensive | Oppositional Power Competitive Perfectionistic | Members believe they are expected to approach tasks in forceful ways to protect their status and security |

Table 7. Description of Culture for Diversity Instrument

Research Design and Data Collection

Data was collected using a mixed methods approach. A survey was conducted to measure the attitudinal constructs associated with Cooke's Cultures for Diversity Inventory. A survey was selected for collecting culture data because no published studies have been done to empirically test propositions associated with organizational culture and supplier diversity. Empirical research of this nature is necessary if supplier diversity is to be fully evaluated and understood. Although culture has been identified as being important, no empirical tests on culture and supplier diversity have been published as of yet. Currently, supplier diversity research has focused on best practices and problems.

Archival research and personal interviews was conducted to collect data on the effectiveness of the firm's supplier diversity programs. Informal personal interviews were

conducted with the Director of Supplier Diversity and the Manager of Corporate Relations at this firm. The archival data collected from organizational records, web sites, and supplier diversity program material. Information researched included data on numbers of buyers and minority suppliers, amount of spending with minority suppliers at each unit, percentage of total spending contracted with minority suppliers and training and development conducted with minority suppliers.

Design Issues for Mixed Methods

Over the last three to four decades we have seen research designs incorporating both quantitative and qualitative orientations. These approaches were developed in several fields, and they were, to a large degree, an outgrowth of the popularization of triangulation methods (Tashakkori and Teddlie 1998). Denzin, in 1978 applied the term triangulation in a book on sociological methods, referring to the concept as a method of combining data sources to study the same social phenomenon. He discussed four types of triangulation:

1. Data Triangulation- the use of a variety of data sources in a study.
2. Investigator Triangulation – the use of several different researchers.
3. Theory Triangulation – the use of multiple perspectives to interpret the results of a study.
4. Methodological Triangulation - the use of multiple methods to study a research problem.

Authors from multiple fields initially defined mixed methods designs under the general heading of method triangulation, but mixed method designs now serve purposes beyond triangulation (Tashakkori and Teddlie 1998). According to Tashakkori and

Teddlie, the term mixed methods typically refers to both data collection and data analysis.

This research involves using a variety of sources to collect data as well as quantitative and qualitative methods for analyzing the data. The data on effectiveness of supplier diversity was categorized using deductive analysis and coding. The larger set of data was deduced down to three categories based on levels of spending. Each of the twelve units was then coded as having low, moderate or high levels of spending. The survey was analyzed using factor analysis and clustering. Both sets of data were then included in a partially-ordered meta-matrix for further analysis.

Sample

A list of buying units was obtained from the firm. The list represented approximately 23 units and 200 buyers. In order to control the size of the sample, a stratification technique was used to reduce the number of units in the sample. Based on the design of the research in this case, it was practical for the sample to be stratified in order to test the hypothesis (Crano & Brewer 2002). The 23 units were stratified into three groups according to spending levels. A sample of 3-5 units from each group was randomly selected for the sample.

The buying units were grouped according to their level of spending with diverse suppliers to make comparisons. The spending levels were identified as high, moderate and low. Spending levels were based upon the natural variance in the spending amounts. As indicated earlier, sampling units were chosen randomly from within each stratum.

Three to five units from each stratum were selected, although the number of buyers in each of the units varied.

Once the sample population from the buying units was identified, the supplier diversity coordinators at each unit was contacted and asked to provide a list of the names and e-mail addresses of all of the buyers in their units. The final target sample was 112 buyers from 12 buying units. As noted in Table 7 below, the number of suppliers at each site ranged from 1 to 12 with an average of 9 buyers per division.

| DIVISION | NUMBER OF BUYERS | NUMBER RESPONDING TO SURVEY |
|----------|------------------|-----------------------------|
| 1 | 1 | 4 |
| 2 | 9 | 9 |
| 3 | 13 | 4 |
| 4 | 11 | 9 |
| 5 | 16 | 13 |
| 6 | 7 | 1 |
| 7 | 10 | 9 |
| 8 | 17 | 5 |
| 9 | 9 | 9 |
| 10 | 7 | 9 |
| 11 | 11 | 5 |
| 12 | 1 | 2 |
| TOTAL | 112 | 79 |

Table 8. Buyer Data

The unit of analysis is the division. The unit level is where implementation of supplier diversity programs occurs and unit-level analysis may provide meaningful information to draw conclusions and make reasonable inferences. Where possible, information was gathered from multiple respondents from each division to minimize the potential for bias from a single respondent.

Research Methodology

The primary goal of this dissertation is to specify the nature of the relationship between the two variables of interest; culture and supplier diversity effectiveness. A simple two variable relationship was chosen in order to have a good understanding of the scientific results on the phenomenon. According to Crano & Brewer (2002), techniques of quantitative synthesis are most effective when they are focused on a relationship between variables that can be specified with a high degree of precision (usually two). This research begins with a specific hypothesis linking culture with supplier diversity effectiveness and future research will explore the moderating or mediating effects of other variables such as communication and community involvement.

In order to determine the significance of the relationships in the model, it was first determined whether there was a sufficient level of validity and reliability with the measure. Crano & Brewer (2002) have pointed out that constructs must be unidimensional and reliable before assessing the relationships between them. Therefore, in this study each first order factor was tested for internal reliability by running a reliability test using Cronbach's Alpha. A factor analysis was performed to determine the correlations and factor loadings of the constructs.

Data Collection

A survey questionnaire was selected because of the structure it provides. A structured data collection method was desirable in this research in order to have consistency across 12 buying units. The survey had structured stimuli structured responses. An Internet-mediated approach was used to administer the survey. Just prior to

the survey being sent, the corporate manager at the firm was asked to send an e-mail to the target sample to notify them that a survey was coming and to encourage their participation.

The survey (via Internet link) was sent a week later and included a cover letter that explained the purpose of the survey and what the participating firm hoped to accomplish. The participants were asked to complete the survey in 10 days. At the end of the 10 day period, a reminder email was sent to all participants who had not responded and they were given an additional 5 days to complete and return the survey. A final email was sent to participants on the last day reminding them that the Internet link would be closed at midnight. In total, there were 79 surveys returned for a 70.5% response rate as indicated in Table 8.

Internet-Mediated Research

The Internet is gaining popularity for use in conducting primary social scientific research. Internet-mediated data collection has several advantages compared with traditional ways of administering a survey questionnaire. First, the Internet dramatically improved the time and cost efficiency of the research. The costs of postage and printing were eliminated, and the time and cost of data collection was reduced. Second, the Internet survey reduced the time associated with converting the data into a usable format. The respondents sent data directly to a database, eliminating the time-consuming tasks and potential errors of data entry. Non-respondents were easy to identify and it was time efficient to send reminders via e-mail. Third, participants were able to complete the process at a time that was convenient for them. Finally, there is novelty value of

responding to an Internet-based survey, which may have enhanced its appeal to prospective participants (Hewson et. al. 2003) The Internet-based approach allowed large numbers of participants to be contacted with less time and expenditures, while still allowing for anonymity.

The Internet is a newer medium for conducting research. Very little information about published empirical investigations of Internet survey methodology exists. There have been many issues raised about how Internet survey response rates compare with postal mail response rates. The main empirical findings show that sending an initial participation request message can increase response rates (Smith and Leigh 1997). Also, Internet surveys have been found to be more time consuming than paper and pencil, by virtue of the medium, and consequently survey length may be a factor in response rates. (Smith and Leigh 1997)

There is support for the validity of Internet sampling procedures and it comes from studies that have compared data from Internet and non-Internet samples. Buchanan and Smith (1999) administered a personality test to an Internet and non-Internet sample and found that both sets of data displayed similar psychometric properties. Stanton (1998) also conducted a study which used company employees and found similar psychometric properties of a survey instrument administered to both Internet and non-Internet samples.

A common assumption is that the Internet-user population is not representative of the general population. However, the sample population in this dissertation research is buyers at the target firm. The sample was not obtained on a random volunteer basis, but rather was identified from a narrow predetermined population.

Validity Issues

Construct validity refers to the question of whether a measure yields results consistent with theoretical predictions about the construct being measured. When a new measure yields results that confirm theoretical predictions, both the construct validity of the measure and the validity of the theory are strengthened. Construct validity can be divided into two categories: convergent validity is demonstrated by substantial positive correlations between different measures of the same construct; and discriminant validity is simultaneously demonstrated by near-zero correlations between different constructs measured by the same method. Table 12 shows the construct validity of the 12 scales measured by this inventory.

The factor analysis shown is generally supportive of the construct validity of the inventory. As noted, the analysis identifies a three-factor solution –Constructive, Aggressive-Defensive, Passive-Defensive which together accounts for 72.9% of the variance in scale responses and strongly supports the construct validity of the constructive scales.

The results for construct validity based on factor analysis indicate that the inventory does indeed measure what it is designed to measure. The factor structure of the instrument seems to be acceptable, with the scales consistently loading on three factors corresponding to Constructive, Passive-Defensive and Aggressive-Defensive. The scales that show dual loadings (conventional, avoidance, oppositional, perfectionistic) may

| INVENTORY SCALES: | FACTORS ^a : | | |
|-------------------------------|------------------------|--------------------------------|-----------------------------------|
| | Constructive | Passive-Defensive ⁴ | Aggressive-Defensive ⁵ |
| Humanistic | .85 | -.16 | -.07 |
| Affiliative | .87 | -.21 | .15 |
| Approval | .05T | .29 | .80 |
| Conventional | -.20 | .32 | .80 |
| Dependence | -.03 | .21 | .85 |
| Avoidance | -.39 | .48 | .49 |
| Oppositional | -.01 | .73 | .22 |
| Power | -.03 | .85 | .21 |
| Competitive | -.09 | .81 | .21 |
| Perfectionistic | .18 | .68 | .40 |
| Achievement | .84 | .19 | -.12 |
| Self-Actualizing | .88 | .12 | -.14 |
| Variance Explained | 26.6% | 24.6% | 21.7% |
| Cumulative Variance Explained | 26.6% | 51.2% | 72.9% |

Table 9. Construct Validity of the 12 Scales of the Organizational Culture Inventory.⁶

indicate weakness with respect to discriminate validity or may suggest that the norms associated with Aggressive-Defensive and Passive-Defensive are loosely tied to certain settings (Cooke 1988).

⁴ Based on factor analysis with varimax rotation

⁵ Cross-sectional research sample Form III (n=859)

⁶ Source: Psychological Reports 1993

Reliability Issues

Good measurement must have reliability as well as validity (Herzog 1996).

Reliability deals with whether a variable has been measured with precision. A reliable measure is one that does not have much systematic error in it. Systematic error in a measure means that the observed score may differ from the true score. Because a reliable measure contains little systematic error, the reported score is close to the true score.

Reliability was assessed for this survey using an internal-consistency approach. The approach involved computing the average correlations among all possible pairs of individual items measuring the same variable (Herzog 1996). The final result, coefficient alpha, provides a measure of the degree to which the full-scale score derived from a set of items is free from systematic error. The general rule of thumb for reliability is the higher the better. An alpha coefficient of .7 or higher suggests that the scale is reasonably reliable (Crano & Brewer 2002).

As can be seen from Table 10, the results indicate that acceptable consistency among items within scales has been maintained. Most of the scales in the previous study have alphas coefficients above .80. In this dissertation research the alphas improved with a range from .81 to .92.

| INVENTORY SCALES | ALPHA COEFFICIENT (Previous Study) ^{a7} | ALPHA COEFFICIENT (Current Study) |
|------------------------|---|--------------------------------------|
| Humanistic/Encouraging | .90 | .90 |
| Affiliative | .91 | .93 |
| Approval | .84 | .82 |
| Conventional | .85 | .92 |
| Dependent | .77 | .91 |
| Avoidance | .85 | .84 |
| Oppositional | .75 | .81 |
| Power | .84 | .89 |
| Competitive | .86 | .88 |
| Perfectionistic | .79 | .84 |
| Achievement | .85 | .91 |
| Self-Actualizing | .83 | .91 |

Table 10. Cronbach Alpha Coefficients for Scales ⁸

⁷ Cross sectional research sample (n=859)

⁸ Source: Psychological Reports June 1993

CHAPTER IV

DATA ANALYSIS

Introduction

The purpose of Chapter Four is to analyze the data in light of the propositions that were outlined in Chapter Three. This chapter will use factor analysis to develop and validate the measurement model and test the proposition that there are different types of types of cultures among the twelve units. This chapter will then examine the association between culture type and level of spending with minority suppliers.

Summary Statistics

In addition to measuring the culture scales, demographic data was also collected. In summary, the average buyer surveyed was white male with 15 years or more of employment with the firm. The buyers were also well educated with nearly 85 percent having at least bachelor's degrees. Several graphs have been constructed to visually represent some of these demographical characteristics. The graphs begin with the unit of affiliation in Figure 7 below.

Respondent's Unit Affiliation

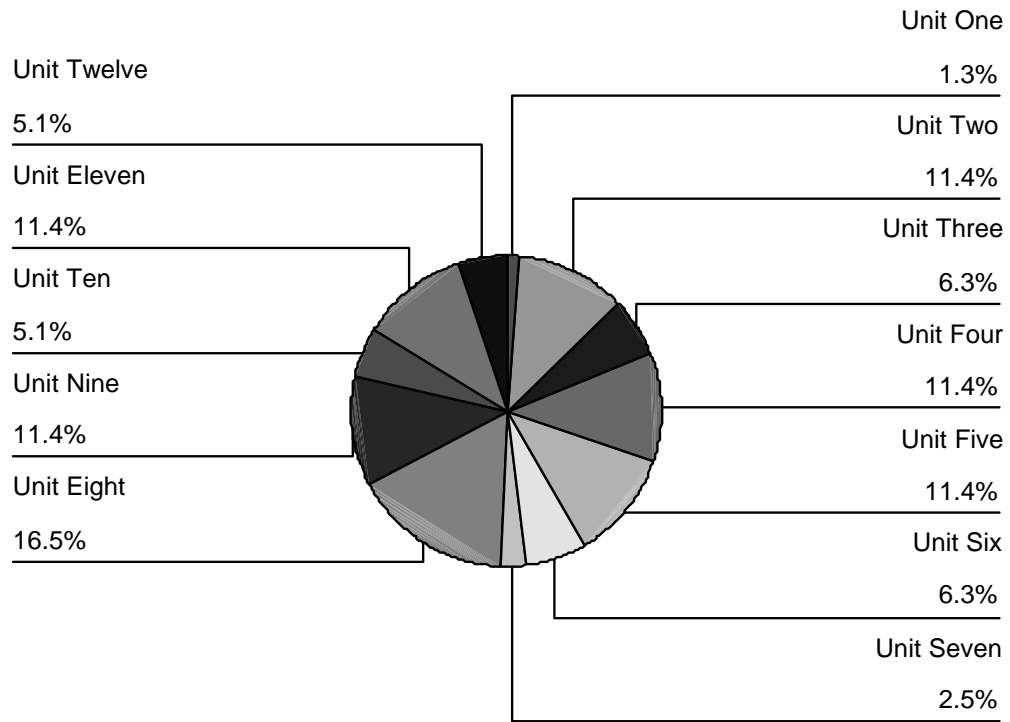


Figure 2. Unit Affiliation of Respondents

Figure 2 displays the units that the buyers represented. The largest number of buyers came from unit number eight at 16.5%. This unit also had the largest number of buyers who were asked to complete the survey (17). Five units (numbers eleven, nine, two, four and five) represented the next largest percentage. Each of these 5 units represented 11.4% of the sample. The remaining half of the units represented from 1.3 to 6.3% of the sample.

The ethnic background of a vast majority of the buyers surveyed was white. As outlined in Figure 3, white buyers represented 84.9 percent of the respondents. The next largest percentage was those buyers who preferred not to specify their ethnic background. These buyers represented 7.6 percent of the sample. The next largest ethnic group represented was black, at 3.8 percent, and Hispanics and American Indians represented 2.5 and 1.3 percent respectively.

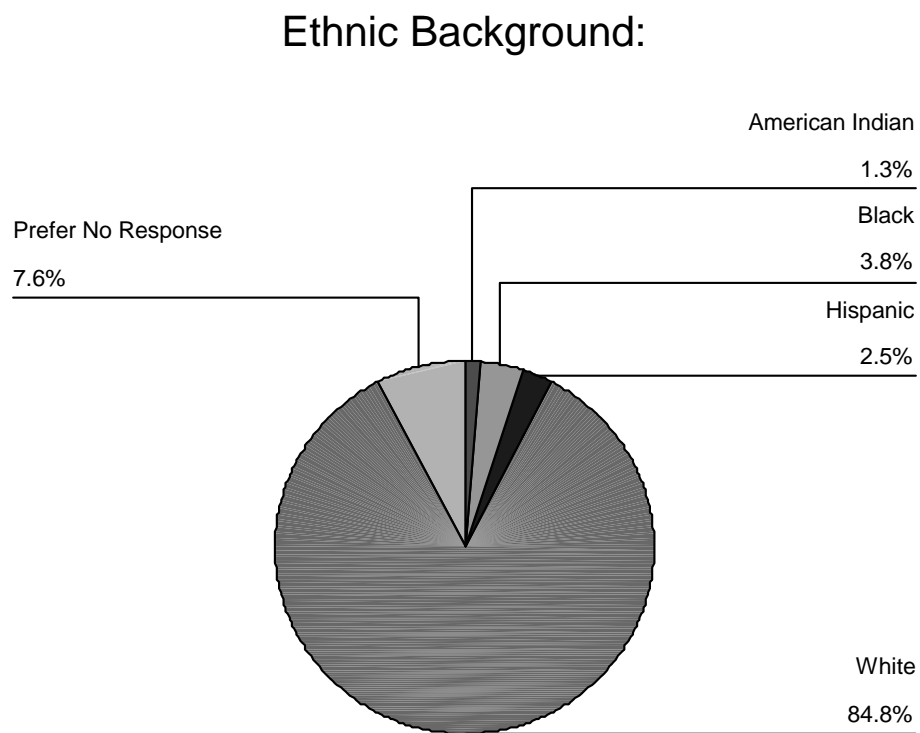


Figure 3. Ethnicity of Respondents

According to Figure 4, below, nearly half the buyers have been with the organization more than fifteen years. 6.4 percent have been with the organization 6 to 15 years. Thirty-eight percent have been with the organization between 2 and 6 years. And only 1.3 percent has been with the organization two years or less.

Years with Organization:

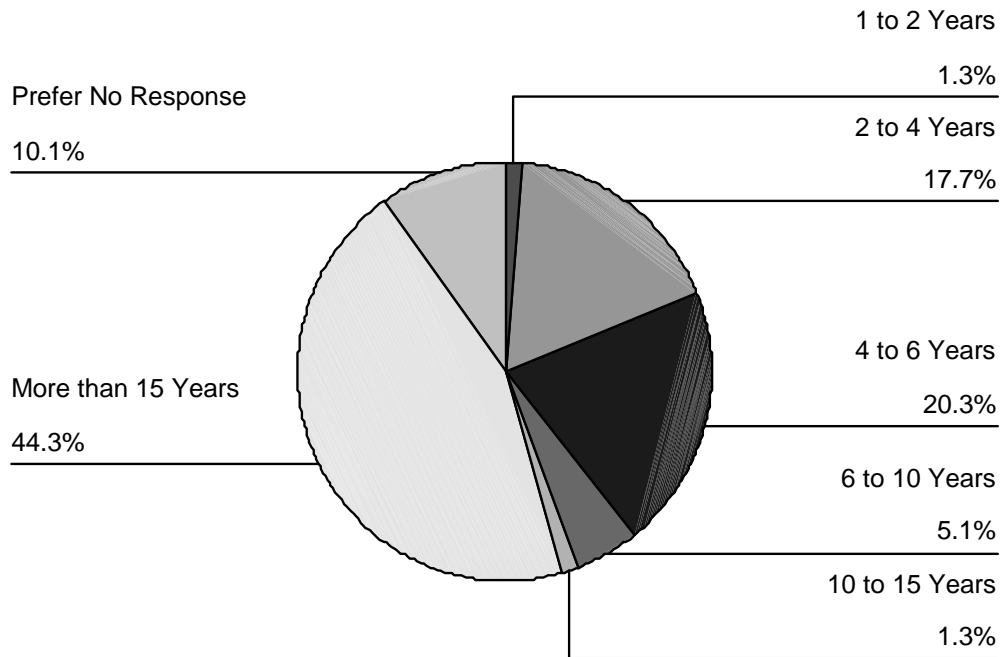


Figure 4. Years with Organization

Figure 5, below, shows that over 50 percent of the buyers surveyed were male. A little less than 30 percent were female, and nearly 20 percent preferred not to identify their gender.

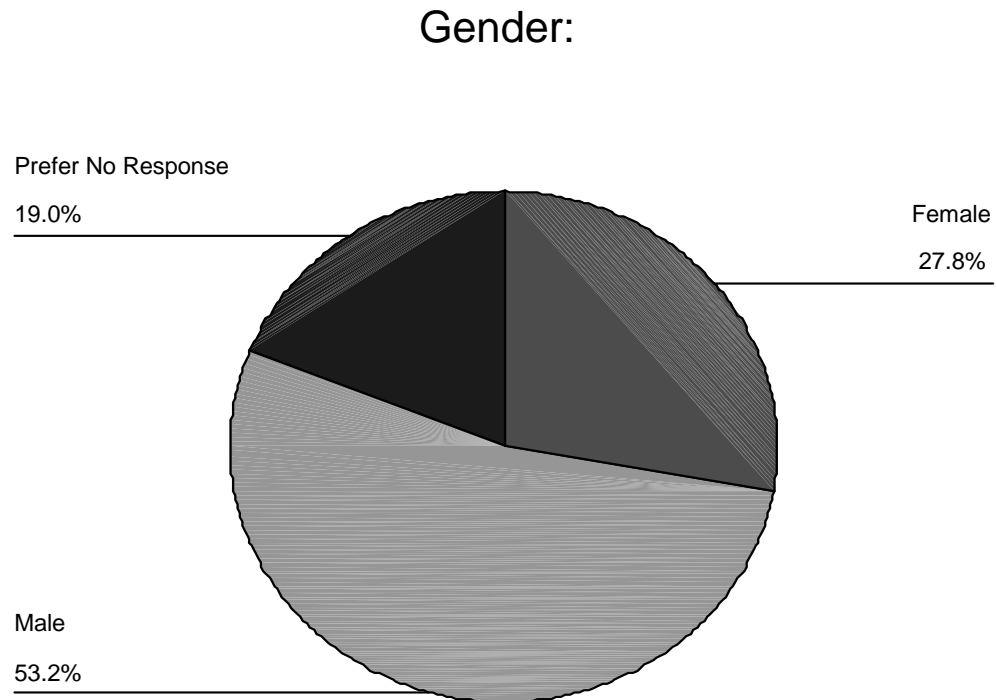


Figure 5. Gender of Respondents

Figure 6, below, shows that nearly 85 percent of the respondents have at least a bachelor's degree, and over 30 percent have master's degrees.

Education:

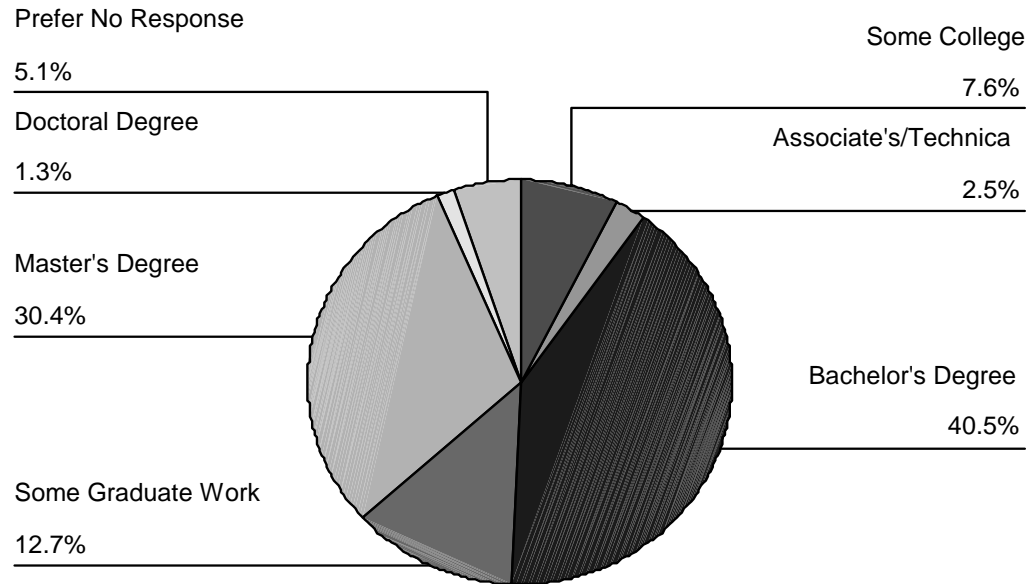


Figure 6. Educational-Level of Respondents

Analysis at the Organizational-Level

Based on the 79 cases, aggregate scores for the 12 culture styles were compiled along with the primary and secondary styles of the overall firm (organizational level) and for each individual unit. The scores are listed in Table 6.

| CULTURE STYLES (SCALES) | MEAN: ORGANIZATIONAL- LEVEL | CULTURE TYPE |
|----------------------------|-----------------------------------|----------------------|
| Affiliative | 35.4262 | Constructive |
| Achievement | 34.7595 | Constructive |
| Perfectionistic | 32.4177 | Aggressive-Defensive |
| Humanistic | 31.3291 | Constructive |
| Self-Actualizing | 29.2658 | Constructive |
| Conventional | 28.8703 | Passive-Defensive |
| Dependence | 28.5696 | Passive-Defensive |
| Avoidance | 24.7975 | Passive-Defensive |
| Power | 24.4346 | Aggressive-Defensive |
| Competitive | 23.7215 | Aggressive-Defensive |
| Approval | 23.6456 | Passive-Defensive |
| Oppositional | 17.6567 | Aggressive-Defensive |

Table 11. Scale Means at the Organizational Level

The primary style for the overall organization is affiliative. As demonstrated in Figure 7, the frequency for the affiliative style ranged from 18 to 49.

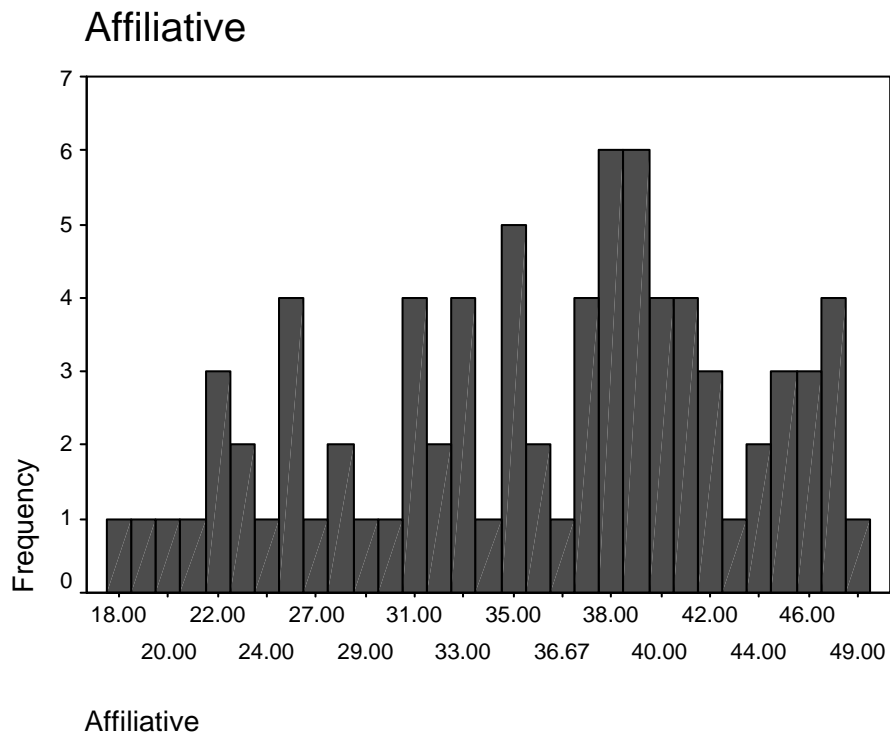


Figure 7. Frequency for Affiliative Scale at Organizational Level

Affiliative cultures exist when organizations place a high priority on constructive interpersonal relationships. Members are expected to be friendly, open, and sensitive to the satisfaction of their work group. Affiliative cultures can enhance organizational performance by promoting open communication, good cooperation and the effective coordination of activities.

This firm's secondary style is achievement. Figure 8 shows the frequency for the achievement style which ranges from 12 to 48.

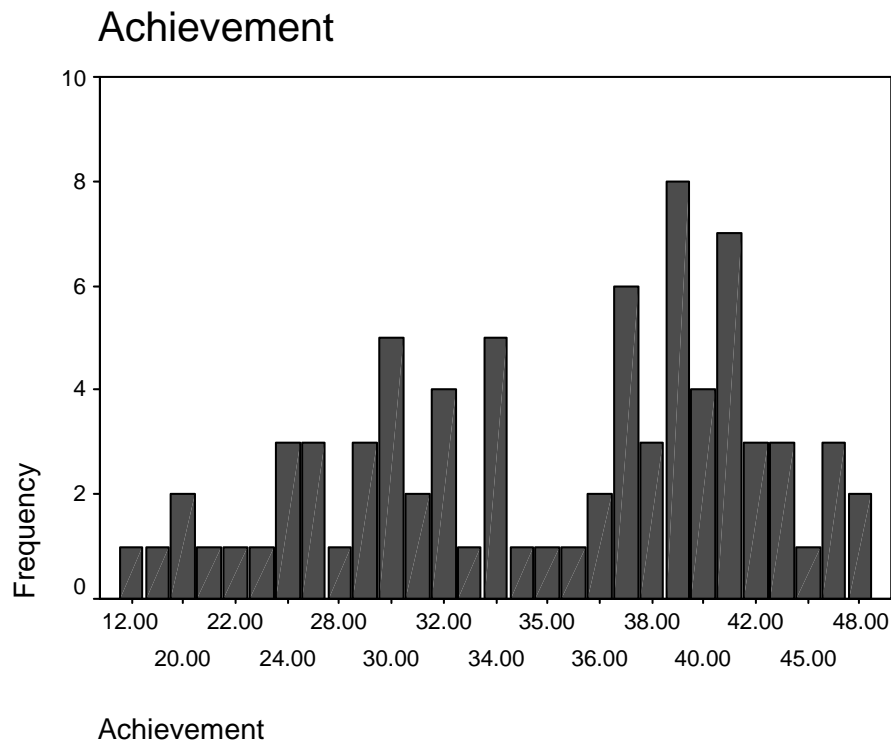


Figure 8. Frequency of Achievement Scale at Organizational Level

Achievement cultures are characterized by organizations that do things well and value members who set and accomplish individual goals. Members of these organizations set challenging but realistic goals, establish plans to reach these goals and pursue them

with enthusiasm. Achievement organizations are effective; solve problems appropriately, serve clients and customers well, and orient organizational members in a healthy way.

In addition to scoring high in affiliative and achievement, the firm also scored high in the other styles associated with a constructive culture. Those styles are self actualizing and humanistic. The frequencies for these styles are shown in Figures 9 and 10. The scores ranged from 12 to 46 for self-actualizing and 15 to 48 for humanistic.

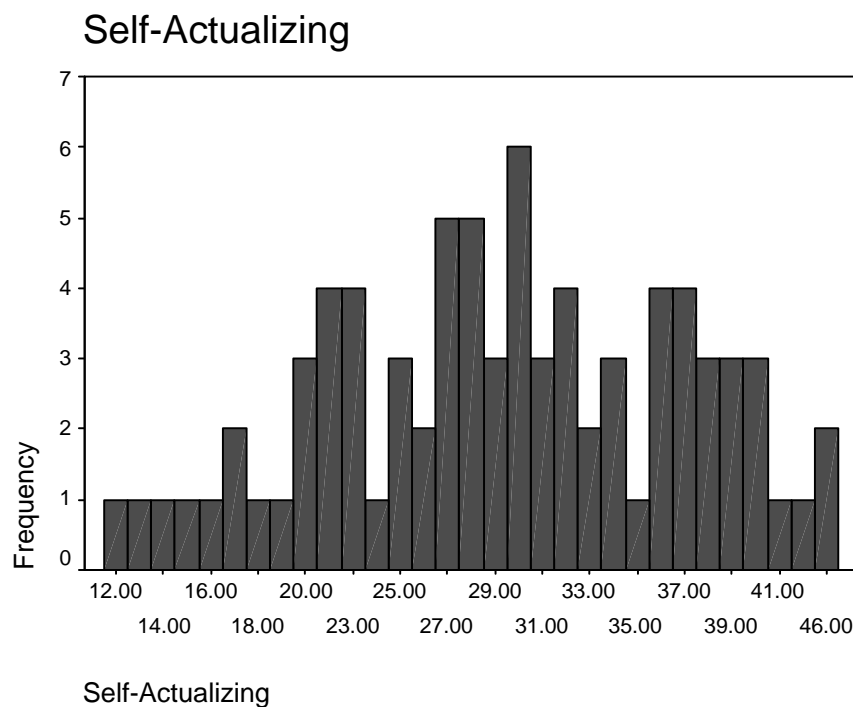
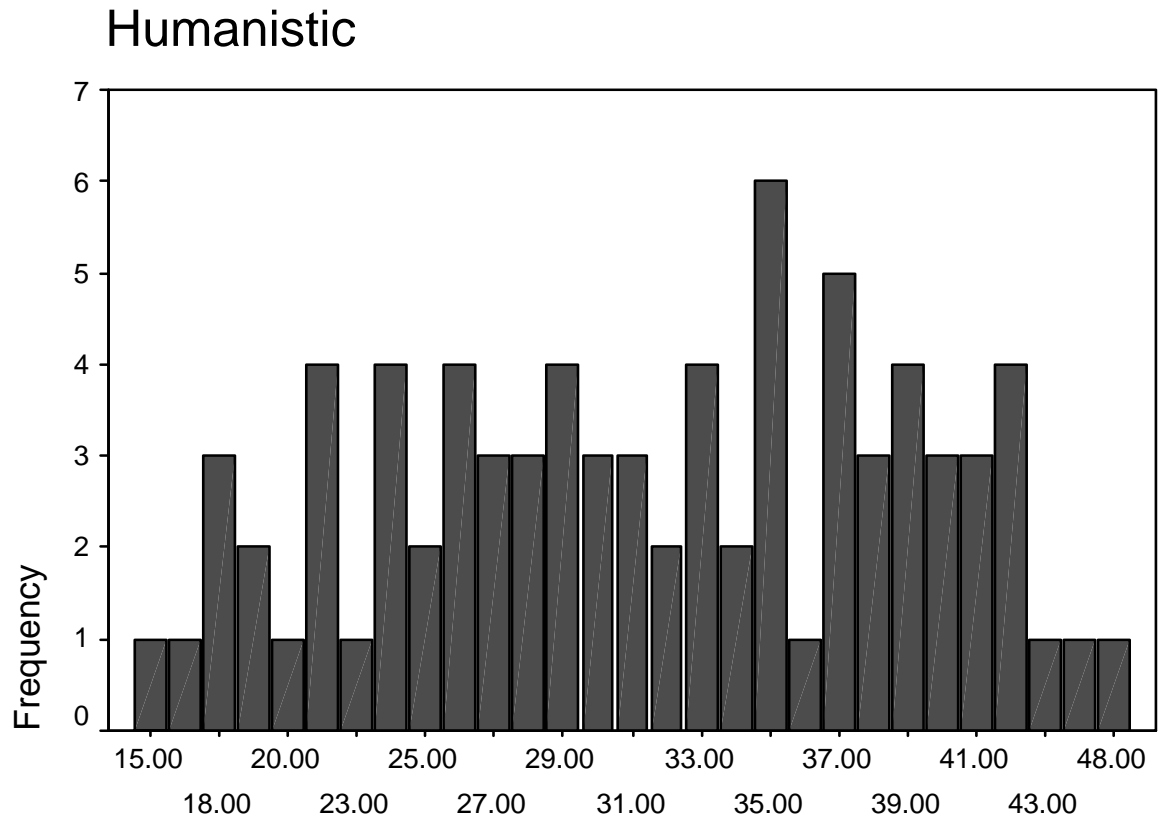


Figure 9. Frequency for Self-Actualizing Scale at Organizational Level

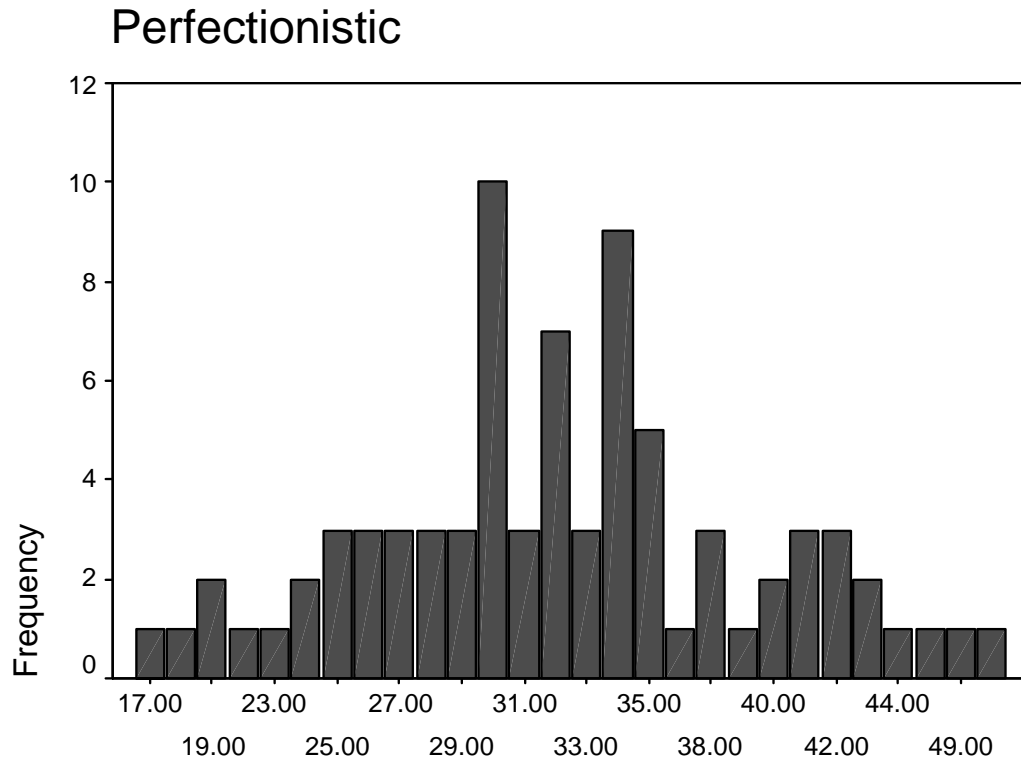


Humanistic

Figure 10. Frequency for Humanistic Scale at Organizational Level

The culture styles that ranked the highest in this firm are affiliative, achievement, perfectionist, humanistic, and self-actualizing (in order from greatest to least). With the exception of perfectionistic, all of these styles are associated with a Constructive culture. As indicated previously, Constructive cultures promote diversity and productive interpersonal relations among people with different backgrounds.

However, the perfectionistic style is associated with Aggressive-Defensive cultures, which don't promote collaboration and integration. Table 11 shows the high frequency in which the perfectionistic style was demonstrated in the overall culture of this firm.



Perfectionistic

Figure 11. Frequency of Perfectionistic Scale at Organizational Level

Figure 12 shows the results of respondents being asked if top management was committed to making diversity work at this firm. The overall organizational mean is 3.1 on a scale from one to five with a standard deviation of 1.12.

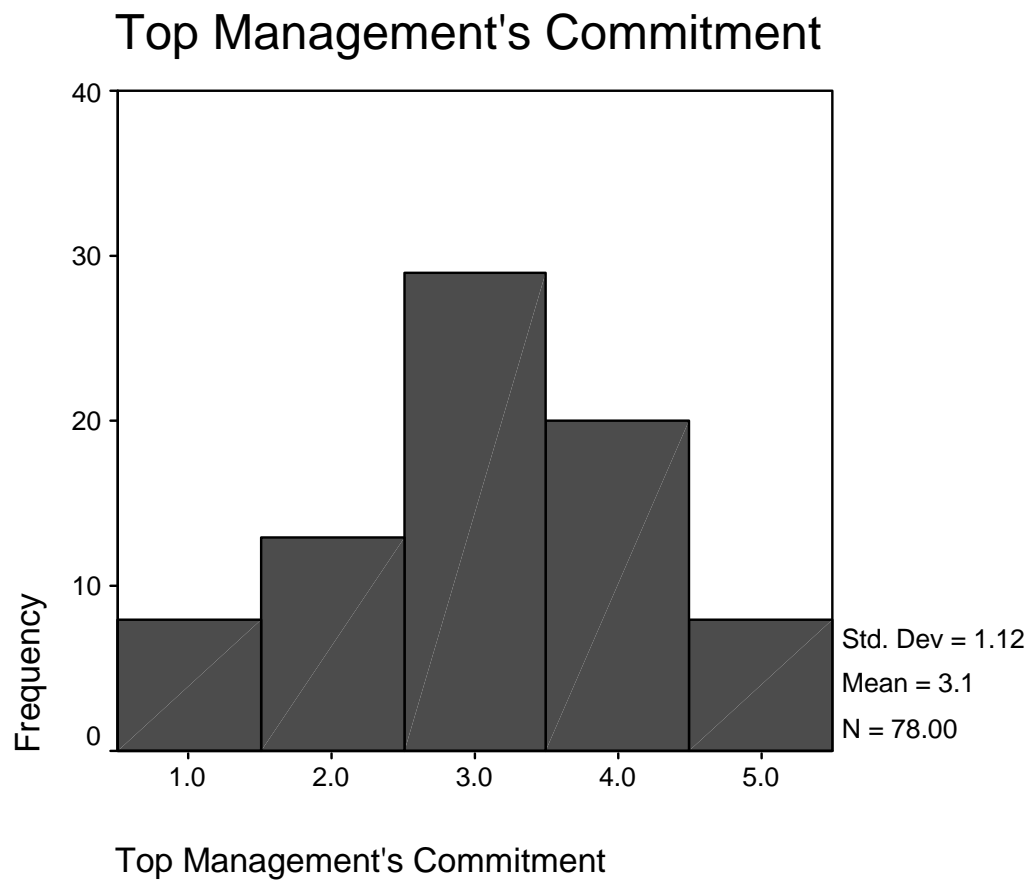


Figure 12. Management's Commitment to Diversity

Figure 13 shows the result of respondents being asked about employees themselves being committed to making diversity work at this firm. The mean was 3.2 with a standard deviation of .93. The buyer's perceptions of employee commitment and management commitment to diversity appear to be very similar.

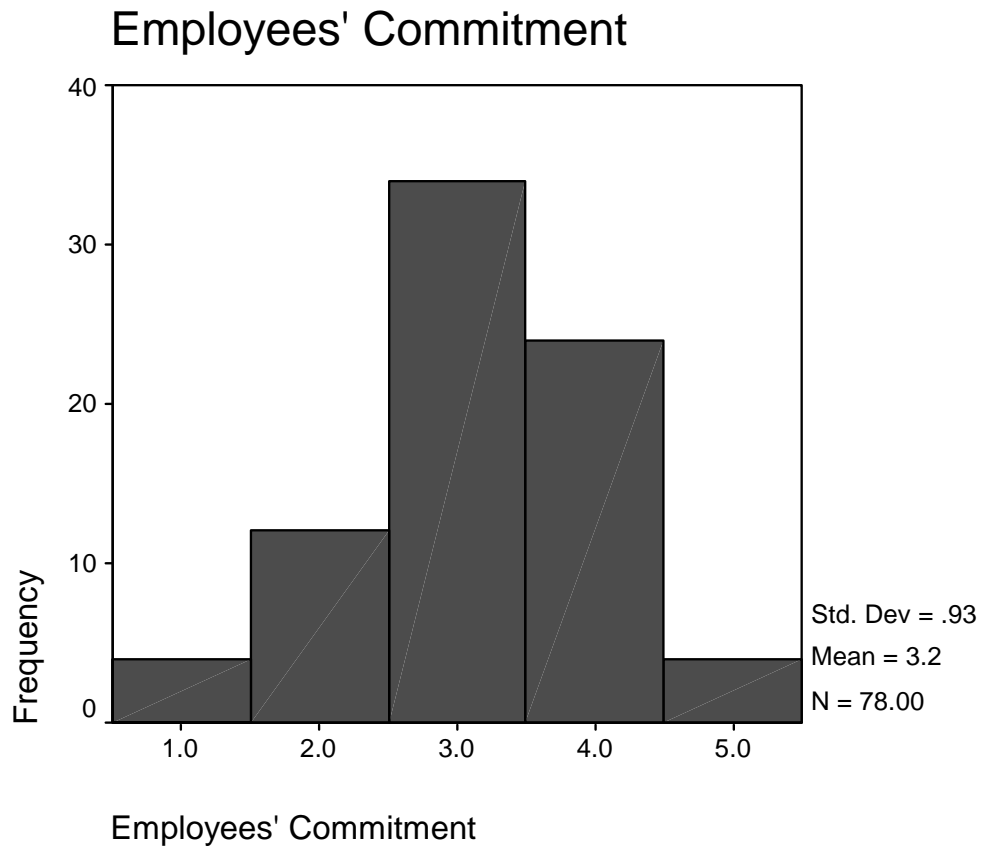


Figure 13. Employee's Commitment to Diversity

Results of Factor Analysis

Principal component factor analysis was conducted to determine the pattern of correlations among the twelve culture styles. As outlined in Table 12, the principal component explained approximately forty percent or more of the variance for each style. The constructive cluster had the largest amount of variance explained.

| Culture Styles | Culture Cluster | Eigenvalues for Principal Component | Percent Variance Explained | Alpha |
|------------------|----------------------|-------------------------------------|----------------------------|-------|
| Achievement | Constructive | 5.677 | 56.777 | .9102 |
| Self-Actualizing | | 5.521 | 55.206 | .9069 |
| Humanistic | | 5.310 | 53.104 | .8994 |
| Affiliative | | 6.246 | 62.455 | .9303 |
| Approval | Passive-Defensive | 3.985 | 39.851 | .8220 |
| Conventional | | 6.057 | 60.566 | .9245 |
| Dependent | | 5.598 | 55.981 | .9113 |
| Avoidance | | 4.178 | 41.780 | .8369 |
| Perfectionist | Aggressive-Defensive | 4.100 | 41.003 | .8361 |
| Competitive | | 4.934 | 49.338 | .8830 |
| Power | | 5.147 | 51.470 | .8915 |
| Oppositional | | 4.255 | 42.550 | .8160 |

Table 12. Factor Analysis for Culture Styles

The secondary purpose for conducting the factor analysis was to confirm that the factor loading results were similar to what had been found in previous studies using the same instrument. The alphas were very similar. Moreover, when limiting the factor correlations from this survey to .65 or higher, the alpha scores moved very little.

Results of Reliability Test

Reliability tests were also conducted and resulted in reasonably high alphas for all clusters. The constructive cluster had the highest alphas ranging from .89 to .91. as noted in Table 12. The passive-defensive cluster ranged from .83 to .92 and the aggressive-defensive,.81 to .89. These alphas were similar to what had been found in previous studies, further strengthening the reliability of the instrument

Analysis for Individual Units

In addition to organizational-level analysis, unit-level analysis was also conducted. The unit-level is where comparisons were made to test the propositions. First, the means for each of the twelve styles was calculated for all of the buying units. Table 13 below outlines the scale mean scores for units one through twelve.

| CULTURE STYLE | Unit 1 | Unit 2 | Unit 3 | Unit 4 | Unit 5 | Unit 6 | Unit 7 | Unit 8 | Unit 9 | Unit 10 | Unit 11 | Unit 12 |
|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|
| Humanistic | 35 | 36.8 | 24.4 | 30.8 | 31 | 28.2 | 27.5 | 29 | 31.4 | 35.2 | 32.1 | 35.7 |
| Affiliative | 39 | 38.6 | 30.2 | 34.5 | 33.4 | 30.4 | 34 | 35.7 | 35.5 | 39 | 37.8 | 36.7 |
| Achievement | 35.5 | 38.6 | 28 | 33.3 | 33.2 | 31.6 | 33 | 34.6 | 34.5 | 36.7 | 37.7 | 37.7 |
| Self-Actualizing | 28 | 32.4 | 24.6 | 29.8 | 30.4 | 23 | 28.5 | 28.9 | 28.7 | 28.7 | 31.4 | 30.3 |
| | 17 | 21.5 | 26.6 | 21.6 | 25.3 | 21.4 | 31 | 21.9 | 27.1 | 22 | 24.2 | 24.3 |
| Conventional | 15 | 24.2 | 35 | 26.5 | 29.7 | 35.2 | 39 | 24.9 | 33.1 | 25.3 | 29.6 | 30.5 |
| Dependent | 13 | 24.7 | 36.2 | 26.5 | 26.3 | 37.8 | 32.5 | 24.1 | 32.5 | 25.7 | 30.2 | 32.0 |
| Avoidance | 11 | 20.8 | 28.6 | 23.5 | 24.3 | 33 | 32 | 23.7 | 24.7 | 24.7 | 25.2 | 24.7 |
| Oppositional | 10 | 16.5 | 24.4 | 17.7 | 18.4 | 17.4 | 20.5 | 16.7 | 14.2 | 14.5 | 21.0 | 17.0 |
| Power | 12 | 24.7 | 33.8 | 22.9 | 22.8 | 18.4 | 29 | 21.3 | 23.1 | 24.3 | 27.6 | 27.0 |
| Competitive | 13 | 24.3 | 31.2 | 21.4 | 23.3 | 25.2 | 31.5 | 20.8 | 25.4 | 17.5 | 24.8 | 25.0 |
| Perfectionistic | 23 | 27.5 | 35.6 | 29 | 28.6 | 39 | 37.5 | 29.5 | 33.7 | 31.3 | 34.8 | 36.3 |

Table 13. Means for Individual Units

Next, for each of the twelve units, an average was taken for the four styles that comprise constructive cultures, the four styles that comprise passive-defensive cultures, and the four styles that comprise aggressive-defensive cultures. Once the aggregated means were calculated, a primary culture style was designated for each unit. Table 14 summarizes the aggregate means for each culture style and unit.

| Unit | Culture Cluster | Average : Constructive | Average : Passive-Defensive | Average: Aggressive-Defensive |
|------|-------------------|---------------------------|--------------------------------|----------------------------------|
| 1 | | 34.38 | 15.97 | 14.5 |
| 2 | Constructive | 36.6 | 22.86 | 22.42 |
| 3 | Passive-Defensive | 26.8 | 31.6 | 31.25 |
| 4 | Constructive | 32.16 | 24.56 | 22.78 |
| 5 | Constructive | 32.03 | 26.44 | 23.33 |
| 6 | Passive Defensive | 28.3 | 31.85 | 25.0 |
| 7 | Passive-Defensive | 30.75 | 33.62 | 29.62 |
| 8 | Constructive | 32.076 | 23.69 | 22.096 |
| 9 | Constructive | 32.58 | 29.388 | 24.13 |
| 10 | Constructive | 34.937 | 24.45 | 21.87 |
| 11 | Constructive | 34.80 | 27.33 | 27.11 |
| 12 | Constructive | 35.125 | 27.875 | 26.31 |

Table 14. Aggregate Means for Culture Clusters

A primary style is defined as the most dominant culture style. The dominant culture style is determined by the style that has the highest mean within each division. Most units had styles scores that were close, and therefore a secondary style was identified as well.

As mentioned in previous chapters, the styles have been grouped together in three clusters; constructive, aggressive-defensive and passive-defensive. Based on the highest 3 or 4 style scores and their pattern of clustering, units have been designated to one of these three clusters.

Units one, two, four, five, eight, nine, ten, eleven and twelve's primary and secondary styles are in the constructive cluster. Because both primary and secondary styles were clustered in the constructive culture, all of these units were designated as having constructive cultures. However it is noted that division ten's third and fourth highest mean styles were in the passive-aggressive cluster making it the weaker of the constructive cultures. Because the overall, organizational-level culture was constructive, as expected, three of the four highest means for unit-level culture styles were reported in the constructive cluster. However, the third highest mean was in the perfectionist style indicating that buyers perceive they are expected to be perfect in order to fit in the organization.

Units three, six and seven had primary styles in the passive-defensive cluster and secondary styles in the aggressive defensive cluster. The aggregate mean scores, however, for these three units designated them to the passive-aggressive cluster.

Qualitative and Quantitative Data Analysis: A Combined Approach

Once the culture cluster was designated from the survey, this information was compared to the levels of spending at the unit level to test the propositions. As outlined in Chapter 3, the design of this research involved combining qualitative and quantitative methods. The culture style was obtained by an attitudinal survey. The level of spending with minority suppliers was gathered using archival research and interviews.

Increasingly we see multi-site, multi-method studies that combine qualitative and quantitative inquiry (Smith & Louis 1982). By combining methods from different approaches it is possible to elicit important new insights into the causes and

consequences of social behavior (Axinn & Pearce 2002) According to Pearce, each research problem in which we engage has specific goals and the selection of an appropriate research design and data collection method depends entirely on the goals of the research. However, the different strengths and weaknesses of the data collection method may indicate that combining methods could be advantageous.

Data Displays

The use of network and matrix displays is becoming common methodological techniques for crafting analysis (Miles & Huberman 1994). The goal of this research is to shift through data from 12 units to identify similarities, relationships between variables, patterns, themes, and distinct differences between subunits to gradually elaborate a small set of generalization that can cover the consistencies discerned in the data.

The qualitative and quantitative data obtained in this study will be displayed to organize and compress the information. Looking at displays helps to permit conclusion drawing and helps us to understand what is happening by simplifying information processing and patterns (Miles & Huberman 1994).

Meta matrices are master charts assembling descriptive data from each of several units in a standard format. The basic principle is inclusion of all relevant condensed data into a chart (Miles & Huberman 1994). Partially-ordered meta matrices display some internal order but not complete order. Because this research involves cross-unit analysis, the aim in this instance is to uncover and describe what is happening in a local setting

A partially ordered display will help to determine similarities and differences, and draw meaningful conclusions. According to Miles and Huberman, the display can make

all the data comparable by standardizing them into the same metric and reducing the overall amount of data by assigning data to fewer distinct sets; in this case, spending levels, clusters and scale scores.

This data display and analysis method is being used in order to analyze and synthesize the outcomes across the twelve units. According to Miles and Huberman, cross-unit or cross-case displays for exploring and describing data can enhance generalizability (1994). It can help us to determine whether the findings make sense beyond a specific case, or in this instance, unit. Multiple units or cases can also help find negative cases to strengthen a theory, and build theory through examination of similarities and differences across units or cases. Multiple units not only pin down the specific conditions under which a finding will occur but also help us form the more general categories of how those conditions may be related (Miles and Huberman 1994). The results of this research have been displayed in Figure 15.

| Unit Level Display for Partially-Ordered Meta Matrix | | | | |
|--|--------------------|--------|-------------------------|-------------------|
| Unit | Minority Suppliers | Buyers | Minority Spending Level | Culture |
| One | 1 | 1 | High | Constructive |
| Two | 6 | 9 | Moderate | Constructive |
| Three | 16 | 5 | Moderate | Passive-Defensive |
| Four | 2 | 9 | High | Constructive |
| Five | 9 | 9 | High | Constructive |
| Six | 1 | 5 | Moderate | Passive-Defensive |
| Seven | 5 | 2 | Moderate | Passive-Defensive |
| Eight | 17 | 13 | Moderate | Constructive |
| Nine | 7 | 9 | Low | Constructive |
| Ten | 6 | 4 | Low | Constructive |
| Eleven | 6 | 9 | Low | Constructive |
| Twelve | 1 | 4 | High | Constructive |

Table 15. Partially-Ordered Meta Matrix

Results

Test of Proposition One: There is variance in the types of culture among the 12 buying units.

Findings:

The study revealed that there is variance in the types of cultures found within the buying units at this firm, however the variance is slight. The majority of the units fall within a single cluster. Seventy-five percent of the units (nine out of twelve) are classified as constructive. The remaining units (3, 6 & 7) were classified as having passive-aggressive cultures.

Test of Proposition Two: The presence of constructive cultures will be associated with high levels of spending.

Findings:

The study did not find a clear relationship between constructive cultures and high levels of spending. Of the nine constructive cultures identified among buying units, four of the units had high levels of spending with minority suppliers, two units had moderate levels, and three units had low levels.

Test of Proposition Three: The presence of passive-defensive cultures will be associated with moderate levels of spending.

Findings:

The research findings support this proposition. Of the three units that were identified as having passive-defensive cultures, all of them have moderate levels of spending. However, it was observed that unit two had moderate levels of spending, but in a constructive culture rather than a passive-defensive culture.

Test of Proposition Four: The presence of aggressive-defensive cultures will be associated with low levels of spending.

Findings:

No cultures were identified as being aggressive-defensive and all low spending levels were associated with constructive cultures. Although no culture was identified as falling into the aggressive-defensive cluster, every unit's mean for the perfectionist style ranked very high. Out of mean scores for each the twelve styles, the mean score for perfectionist was always in the top 50 percent. Nearly 60 percent (7 out of 12 units) had scores on the perfectionist style that ranked in the top three of their mean scores.

CHAPTER V

DISCUSSION OF THE RESULTS

Introduction

Chapter 5 builds on the findings and analysis of previous chapters by discussing the results and possibilities for future research. This chapter discusses the implications for the firm that was studied, for supply chain management professionals, and for academics interested in supplier diversity. The chapter concludes by highlighting the limitations of the research and possible directions for future research.

Managerial Contributions

The research was designed to detect the presence of different subcultures within a single organization. The results showed that overall this firm has a strong constructive culture which promotes diversity. There were, however, passive-defensive subcultures in three individual units. Passive-defense cultures suppress diversity and individual differences. Moreover, it was also observed that no units with passive-defensive cultures had high levels of spending with diverse suppliers, as was predicted in the research design.

There were no aggressive-defense cultures identified among the twelve units surveyed. This should be considered a positive observation since this type of culture does

not promote collaboration and integration, which are key ingredients for making supplier diversity programs work. It was observed however, that this firm had a strong presence of the perfectionist style, which is considered an aggressive-defensive behavior. This was observed across the organization as well as in particular units. Management should be aware of the perception that some buyers feel they have to do things perfectly.

A perfectionist style is a culture where members feel the need to appear competent, independent and be precise while never making a mistake. Perfectionist styles may prevent members from asking for help with identifying diverse suppliers for fear of appearing imperfect or uncertain.

This aggressive-defensive style can stifle integration and collaboration among units and with external stakeholders such as diverse suppliers. Perhaps collaboration between those units with lower spending levels and those with higher spending levels would result in increased firm-wide supplier diversity effectiveness.

Moreover, the results showed that the buyers surveyed felt that managerial and employee commitment to diversity was about average. To improve commitment, the firm may want to consider dedicating more human and financial resources to supplier diversity, tying evaluation and rewards to supplier diversity goals, and targeting specific programs and media to minority suppliers.

Academic Contributions

First, style clustering was evident from using Cooke's Culture for Diversity Instrument, which is consistent with previous uses of this instrument. In addition, the findings of this research support the idea suggested by Min (1999), and Carter et. al

(1999) that corporate culture can have an impact on supplier diversity programs. Specifically, this study found that in the absence of a culture that promotes diversity and productive interpersonal relations, units did not have high levels of spending with minority suppliers. Moreover, of those units identified as having high levels of spending with minority suppliers, all of them were associated with constructive cultures.

There were units with constructive cultures and low to moderate levels of spending with minority suppliers. This may be due to other factors affecting the unit's ability to increase spending with minority suppliers. For example, the buying units had different numbers of minority suppliers that they worked with. This may be because some units are more effective at locating and developing minority suppliers than others. It may also be because some units with constructive cultures and low to moderate spending levels may not have minority suppliers available in a particular spending area.

For example, the firm that was studied in this research is a heavy equipment manufacturer. The 1997 U.S. Department of Commerce study outlined in Chapter 2 showed that only 3.31 percent of minority-owned businesses were in manufacturing. In contrast, the largest area of minority-owned business is the services industry at 42.7 percent followed by retail businesses at 13.87 percent. Consequently, the effectiveness of the supplier diversity program at units with low to moderate spending in constructive cultures may be impacted by the unavailability of minority businesses in manufacturing.

Finally, another explanation for units with constructive cultures and low to moderate spending levels may be the amount of effort expended to locate diverse suppliers. In addition to collaborating with units that have higher levels of spending with minority suppliers, units can purposefully and aggressively seek to affiliate with minority

business associations, and attend vendor fairs. Firms may also invest in minority business communities and pursue unique and creative ways to partner with and develop minority suppliers.

Limitations of Research

In order to make further generalizable statements about the firm, it would be necessary to survey the remaining buying units in the firm and compare the survey results with the outcome of this study. A similar study should also be conducted in other industries that have greater representation of minority-owned businesses, such as the services industry.

Finally, this study does not take into account other factors that may influence the effectiveness of a supplier diversity program such as communication processes, and minority community involvement.

Future Research

In addition to studying other industries, future research in this area should investigate specific buying processes and behaviors. For example, communication procedures used to identify, contract with, and develop minority suppliers. The areas to examine could be procedures for requesting proposals, electronic information and registration, involvement with minority supplier conferences and networking events, training, education, and supplier development programs.

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