THE EXPLORATION OF THE RELATIONSHIP BETWEEN TAIWANESE

EXECUTIVE LEADERSHIP STYLE AND KNOWLEDGE

MANAGEMENT PRACTICE IN MAINLAND CHINA

A Dissertation

by

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Presented to the School of Graduate Studies of the

University of the Incarnate Word

in Partial Fulfillment

of the requirements

for the degree of

DOCTOR OF PHILOSOPHY

The University of the Incarnate Word

May, 2005

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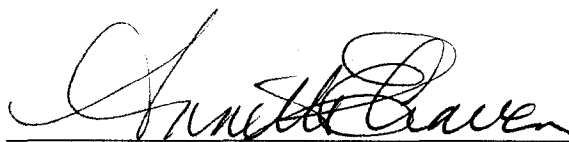
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Hsin Kao

THE EXPLORATION OF THE RELATIONSHIP BETWEEN TAIWANESE

EXECUTIVE LEADERSHIP STYLE AND KNOWLEDGE MANAGEMENT

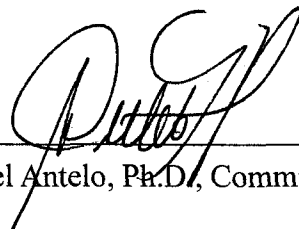PRACTICE IN MAINLAND CHINA

A Dissertation

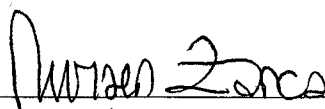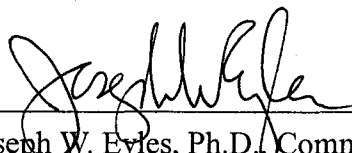by

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Acknowledgments

Writing my dissertation was a toilsome and self-motivating experience for me, and it was not possible to complete it without the encouragement and practical support of numerous people. I would like to acknowledge them for assisting me during my doctoral study and the writing of my dissertation.

I would especially like to thank Dr. Craven, who serves as chair of my committee and my teacher. Many thanks for your incredible patience, wise guidance, and constant consideration. Moreover, I would like to thank Dr. Antelo, Dr. Zanca, and Dr. Eyles; I am grateful for having you as my committee members and my teachers. Your encouragement supplied me with energy and confidence; your professional knowledge and kindness led me to the successful completion of the task. In addition, thanks to my advisor, Dr. Robbins; you are the star always lighting my way.

Most importantly, I could not complete this top task, which is my doctoral degree, if it were not for my parents' backup and love. Under the traditional concepts of Chinese culture, women are not inspired to get higher education than men. However, my parents not only did not interdict me, but they enthusiastically supported me and gave me this great opportunity to make my dream come true. Without them, my life would turn out differently. I am deeply grateful to my parents.

Additionally, I especially want to express my gratitude to my brother, Sean, who came to study at UIW with me. We motivated and encouraged each other when we felt frustrated; we shared every experience, feeling, and impression; and we always learned and grew together. I believe it is really a rare and impressive experience for siblings to

study together in another country, and I really appreciated it. Sean, my brother, thank you from the bottom of my heart.

Thanks must be given to my friends, both in the United States and in Taiwan, who assisted and supported me during my studies. Finally, I would like to share my entire honor with all of you; I am a rich person because of you.

Abstract

The Exploration of the Relationship Between Taiwanese Executive Leadership Style and

Knowledge Management Practice in Mainland China

Chair of Committee: Annette Craven, Ph.D.

This research investigated the possible relationship between leadership style and the

practice of knowledge management by Taiwanese executives in high-tech companies in

the Kun-Shan area of China. This study used a quantitative research methodology. The

Leader Behavior Description Questionnaire (LBDQ) was utilized to measure executives'

leadership styles and the State of Knowledge Management: An Assessment Questionnaire

was used to measure executives' practices of knowledge management. Four types of

executives' leadership styles were constructed according to different combinations of

consideration behavior and initiating structure behavior (telling, selling, participating, and

delegating). Demographics included gender, age, title, level of education, years with the

present company, years of leadership with the present company, and years of total

leadership with all companies. Data analysis included descriptive and inferential

statistical techniques such as means, frequencies, percentages, Cronbach alpha, standard

deviations, Pearson product-moment correlation coefficient, regression, one-way

ANOVA, two-way ANOVA, and S-N-K test. The results showed that there were

significant positive correlations between executives' leadership styles and knowledge

management practices, and between executives' leadership styles and demographics.

Moreover, there were significant mean differences in the selling leadership style and

executives' title, age, years of leadership in the company, and years of leadership in all companies. The significant mean differences existed in different leadership styles and practices of knowledge management. Besides, selling leadership style related to high use of knowledge management. Executives' leadership styles affected the practices of knowledge management as well as the Taiwanese economic system.

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Chapter 1: Introduction

Context of the Study

In terms of the ratio of Gross Domestic Product (GDP), there is no country in the world that is investing in China at a higher rate than Taiwan. According to a survey by *Fortune China Monthly*, Taiwan's accumulated amount of investment in China in 2001 totaled U.S. $140 billion, which exceeded 50% of Taiwan's GDP (Marsh, 2004).

Taiwan is a long, narrow island that stretches from north to south and is often described as being similar in appearance to a yam. It is only half the geographical size of Tasmania, one of many Australian islands. According to experts, the economic strength of Taiwan has made it a central world player significant enough to activate a global recession if undermined.

Twenty percent of the people in the world live in Mainland China; it is the biggest communist nation. Although most of the area in Mainland China is still developing, in the 1990s the nation had become the third largest economic organization in the world, following only the United States and Japan. China's growth ratio is number one in the world (Chi, 2000). Because the Taiwanese are all Han people who migrated in several waves from Mainland China, the Taiwanese and the Chinese have the same ethnicity, blood, and language. The similarity in cultures has facilitated the movement of Taiwanese business to Mainland China.

Attracted by the cheap raw material and labor force in China, Taiwanese companies, sharing the same culture and language with the Mainland, have become enthusiastic in investing in China. The business environment in Taiwan has experienced an enormous change recently, such as the rising consciousness of labor, the high cost of

labor, the variation of exchange rates, the competition for property, and the saturation of the product market. Because of these factors, many small and medium enterprises lost their cost benefit. This loss ensures that moving property to Mainland China, and other burgeoning nations, will prove to be a good investment (Lee, 1999).

The China Heat—a fanatical investment trend in China—has become more common among Taiwanese manufacturing companies as China also starts to open its market to the global society. Furthermore, the forming of vertical industrial chains lowers the risk for Taiwanese companies investing in China, as their suppliers and customers are also investing in China.

Knowledge-based Management

Universal competition is increasingly drastic, and internationalization has become one of the necessary strategies for a company to retain its long-term superiority. Foss (1999) said that "in fact, during the last decade, accumulating frustration in the strategy field with the modern economics of organization has resulted in the gradual crystallization of a knowledge-based view of competitive advantage and economic organization" (p. 725). This view is seen by many of its proponents as being rival to the modern economics of organization (Kogut & Zander, 1992). Therefore, we are in an era of knowledge-based economics.

With the growing awareness of a knowledge-based economy, enterprises are eager to create value through the better use of knowledge. Combined with the trend of globalization, the management and transfer of knowledge within an organization usually occurs across nations, especially for a multinational corporation (MNC). Innovative recombination of knowledge is essential to achieving knowledge transfer for businesses

that want to attain and sustain a competitive advantage. Moreover, the transfer of knowledge in the organization is one of the most important, but difficult tasks, in managing knowledge. Because of the distance between the MNCs and their subsidiaries, the headquarters of MNCs need a well-designed knowledge transfer model.

Knowledge is supposed to be the key to understanding society as well as technological developments taking place (Kreiner, 1999). Knowledge is an intangible asset; it is difficult to account for and control. New knowledge provides a basis for the effective development of organizational design and renewal for competitive advantage. Every firm constitutes a bundle of knowledge. The knowledge possessed by a firm is a dynamic entity; it alters over time as new knowledge is added and knowledge not in use fades (March, 1991).

The impact of effective knowledge management on business performance is well recognized; enterprises benefit much from successfully practicing knowledge management (Alavi & Leidner, 1999; Conner & Prahlad, 1996; Zack, 1999). Additionally, the principle of knowledge management focuses on the knowledge sharing within a company. It also includes the expansion of the *data warehouse,* which is a generic term for a system for storing, retrieving, and managing large amounts of any type of data. Data warehouse software often includes sophisticated compression and hashing techniques for fast searches, as well as advanced filtering.

Knowledge management is an up-and-coming discipline that promises to capitalize on organizations' intellectual capital. This practice supports not only the know-how of a company, but also the know-where, know-who, know-what, know-when, and know-why. The widely held belief that today's organizations' richest resource is the

knowledge residing individually and jointly among their employees reflects the

importance of processes for promoting the creation, sharing, and leveraging of

knowledge (Drucker, 1993; Earl & Scott, 1999).

Knowledge management includes managing the knowledge that already exists in

the organization, as well as enhancing the ability to create new knowledge. It is providing

the right information to the right people at the right time. Most companies that have

knowledge management programs emphasize knowledge sharing and integration, which

is referred to as first-generation knowledge management. Companies are just now

beginning to put more effort in programs for knowledge creation and learning, which is

referred to as second-generation knowledge management (McElroy, 2003).

Leadership

The other concern of the changing global economy is leadership. Burns (1979)

indicated that leadership is hard to comprehend but is considerable in human activities

and can be perceived without notice. Silverthorne (2000) found that Taiwanese managers

have a fairly high level of trust in their employees; they predominantly use a participatory,

or group, leadership style. This was true of all of the leaders studied and particularly true

of those leaders designated as adaptive. However, as time goes by, the enormous

difference in results of previous studies show that leadership styles are continually

changing.

Additionally, the blueprint of Taiwanese economics is based on utilizing global

resources with strengthened ability, developing organizational culture with typical

experience, creating a knowledge management environment, and applying suitable

leadership to remake a Taiwanese economic miracle.

Moreover, in today's global society organizations have to deal with challenges as well as increasingly volatile competition. Therefore, leaders' effectiveness has become a very important issue that must be explored in order to understand how to motivate employees and help them to achieve organizational goals.

Make no mistake, in the 21st century, corporate success is directly linked to its knowledge leadership. Without determined and decisive knowledge leaders guiding knowledge management practices, companies will not be competitive. (Manasco, 1997, p. 1)

Flexible leaders can be considered to be those leaders who choose the appropriate style for the appropriate situation. According to Yukl (1989), Situational Leadership® Theory is naturally engaging and popular with practicing managers in such areas as research and development, communications, project management, health care, and education. However, direct research has only provided weak support for the theory. Vecchio (1987) conducted a comprehensive study found strong support for this theory in the low readiness groups. However, he was unable to determine the best style for the moderate readiness group.

The popularity of the Situational Leadership® Model among managers has generated a considerable amount of research interest (Bass 1990; Graeff, 1997; Hughes, Ginnett, & Curphy, 1996). This model has been applied as the means for studying leadership in numerous manufacturing and service industry settings (Benson, 1994; Blanchard, 1995; Cairns, Hollenback, Preziosi, & Snow, 1998), and in countries throughout the world (Avery, 2001; Galvao, Sawada, Castro, & Corniani, 2000; Irgens, 1995; Schermerhorn, 1997; Silverthorne & Wang, 2001).

The results of research to date regarding the validity of the Situational Leadership® Model as a theory are mixed, with the model receiving only partial support for its explanatory validity as a theory of leadership (Fernadez & Vecchio, 1997). In consideration of the weak research support for the model's utility as a theory, Hersey now refers to the Situational Leadership® Model as an applications model of leadership (Schermerhorn, 1997). The model can be used to guide workers to become more effective by providing them with basic ideas concerning flexibility in how they interact with followers based on differing follower characteristics. This is in contrast to using the model as a theory of leadership intended to fully explain leadership dynamics.

Statement of the Problem

Today's business world is highly competitive. Since it joined the World Trade Organization (WTO) in 2002, Taiwan must become a part of the inevitable trend of movement toward a knowledge-based economy in order to enter international competition. The way to survive is to reshape the organization to meet the needs of a rapidly changing world. Resistance to change is a dead-end street for top managers and their organizations. The major problem in an organization during global transformation is the impact of an ambiguous leadership style when using knowledge management.

Corporations are being called upon to operate in gradually more multifaceted environments characterized by changing leadership and creative strategies for managing knowledge. Organizations are recognizing the pattern of change, specifically altering their leadership development and knowledge management orientation (Davenport & Prusak, 1998). A study conducted by Sveiby (1997) supported a growing consensus in the global business community that the field of knowledge management is in the initial stage,

that there are few experts, and that leadership is growing (Liebowitz, 2000).

It is very important to encourage an organization's members to learn, adapt, or change relative to changing business requirements; they then will develop the leadership, knowledge, competencies, and experience necessary to compete in the knowledge age (Davenport & Prusak, 1998).

The top executive is the highest member of the organizational hierarchy. The top executive not only controls the business direction and procedures but also leads followers. In addition, this executive has the role of gatekeeper to society. It is the top executive who controls the product and consumer behaviors in the business field; therefore, the top executive's points of view will influence his or her own business and affect society's cultural situation. Moreover, the top executive builds relationships, assists knowledge transfer, and has a broad range of interpersonal and organizational development skills. If he or she has worked within an organization for some time, the top executive will be well placed to introduce and embed knowledge practices across the enterprise.

Many studies, such as those by Smoker (1999) and Wilkinson and Wagner (1993), indicate that a leader plays an important role in an organization. Leadership is manifested whenever people join together to accomplish some common objective through their collective efforts. Leadership refers to a person's ability to guide, modify, and direct the actions of others in such a way as to gain their cooperation in doing a job. It is the ability of a person to facilitate the problem-solving processes of others.

Essentially, leadership is a process of influence (Hill, 1977). Of significant importance to organizations in their quest to fulfill their goals is an understanding of the relationship between leaders and followers and how leaders moderate their leadership

style to maximize their effectiveness (Hersey, Blanchard, & Johnson, 1996).

Research regarding leadership styles is highly important to Taiwan's industrial organizations. Taiwan is in a unique position in that industrial development has occurred very rapidly and without a parallel increase in management education. Taiwan is a newly industrialized country, and the use of modern or new management techniques has not always followed use of new technology.

Politis (2001) investigated the relationship between knowledge management and the leadership dimensions as measured by the Self-Management Leadership Questionnaire (SMLQ) developed by Manz and Sims (1986). The study also explored the relationship between knowledge management and the more established dimensions of transformational and transactional leadership style as measured by the Multifactor Leadership Questionnaire (MLQ; Bass, 1985) and initiating structure and consideration as measured by the Leadership Behavior Description Questionnaire (LBDQ; Stogdill, 1963).

According to Politis' study, traditionally middle management has been perceived as information and knowledge gatekeepers. Management should guide the radical cultural change for knowledge creation and knowledge sharing for all employees. If an enterprise is to take advantage of the knowledge available and have an impact on efficiency, effectiveness, productivity, and competitive position, it must have a clear and conscious knowledge strategy that is part of a participative and self-management leadership style.

Increasingly, top executives are responsible for leading knowledge management efforts within their organizations. Thus, their leadership styles may affect their views of knowledge management and the method by which it is implemented. The executives'

leadership styles and their practices of knowledge management will influence the company's development and future. Nowadays, in Taiwan, executives' leadership styles and their ideas and applications are in the developing stages; it is therefore necessary to clarify the question of leadership styles as it relates to executives' ideas and application of knowledge management.

Purpose of the Study

The purpose of the study was to investigate the possible relationship between leadership styles and knowledge management practices of selected executives in the 151 high-tech Taiwanese companies in the Kun-Shan area of Mainland China. The leadership styles of these executives were investigated using the Leader Behavior Description Questionnaire (LBDQ). Their practices of knowledge management were measured using the State of Knowledge Management: An Assessment Questionnaire. This research assessed the correlation between these two variables. Due to cultural factors in Taiwan, various demographic features were scrutinized for their relationship with the primary variables of this research.

Hypotheses of the Study

Primary Hypothesis

In order to explore the relationship between the leadership styles of executives and their practices of knowledge management in Taiwanese investment companies in Mainland China, the primary null hypothesis was:

Executives' leadership styles and their practices of knowledge management are not significantly correlated. Under this primary hypothesis, four sub-hypotheses were also assessed.

Sub-Hypothesis One

Demographic variables (gender, age, level of education, executive position in the company, years with the present company, years of leadership with the present company, and years of total leadership with all companies) and executives' leadership styles are not significantly correlated.

Sub-Hypothesis Two

Demographic variables (gender, age, level of education, executive position in the company, years with the present company, years of leadership with the present company, and years of total leadership with all companies) and executives' practices of knowledge management are not significantly correlated.

Sub-Hypothesis Three

There are no significant differences among the executives' leadership styles and their demographic categories, such as gender, age, level of education, executive position in the company, years with the present company, years of leadership with the present company, and years of total leadership with all companies.

Sub-Hypothesis Four

There is no significant difference in executives' leadership styles and different dimensions of demographic categories based upon different dimensions of practicing knowledge management in the company.

Definition of Terms

This study used the following operational definitions:

Leaders

Leading is commonly defined as serving as a channel and as guiding and directing

on a course. Nahavandi (2003) defined a leader as any person who influences individuals and groups within an organization, helps them in the establishment of goals, and guides them toward achievement of those goals, thereby allowing them to be effective. "When a person spoke, others listened; when this person suggested or directed action to be taken, others took that action. You thought of and perhaps referred to this person as a leader" (Gibson, Ivancevich, & Donnelly, 1997, p. 271).

In this research, the business leaders (executives) are the target participants who can be symbolized as a kind of fortune-telling people because they have visions and entrepreneurship and they are global. They could be the board chairman; vice chairman; chief executive officer (CEO); president; a vice president in charge of a principal business unit, division, or function (such as sales, administration, or finance); or any other officer who performs a policy-making function.

Situational Leadership Style

Vroom (2000) said that leadership styles can be the starting point for the development of a normative model that would help managers or leaders to select the style that best fits a given situation. Like his predecessors, Vroom was convinced that each of the styles is appropriate for certain situations, and that an effective leader is one who explicitly tailors his or her style to the demands of the problem at hand. Four leadership styles and their definitions follow.

1. Telling leadership style (high task behavior, low relationship behavior): Provides specific instructions and closely supervise performance (Hersey, Blanchard, & Johnson, 2001).

2.   Selling leadership style (high task behavior, high leadership behavior): Explains decisions and provides opportunity for clarification (Hersey et al., 2001).

3.   Participating leadership style (low task behavior, high relationship behavior): Shares ideas and facilitates in making decisions (Hersey et al., 2001).

4.   Delegating leadership style (low task behavior, low relationship behavior): Turns over responsibility for decisions and implementation (Hersey et al., 2001).

Knowledge Management

Knowledge management is a set of professional practices to improve organizational effectiveness and enhance employees' willingness to share knowledge in the organization. Knowledge management represents a logical progression beyond information management. Information technologies have demonstrated a notable impact on organizational intelligence products, which will increasingly enable knowledge management, in contrast to information management, and, as such, will have a far bigger impact on organizational performance (Sveiby, 1997).

Demographics

In reality, there is no unambiguous definition of a *leader.* For example, in the United States, leaders are defined as people who are decisive, aggressive, ambitious, intolerant of poor performance, and have strong analytical skills. Jack Welch and Andy Grove are examples of two people who have magnetized a large following because their behavior is consistent with the U.S. model of good leadership. However, in Taiwan, the popular management philosophy is teamwork, market-share objectives, and a

commitment to quality.

There were plenty of studies discussing executives' gender issues in the United States, including Lyness and Thompson's investigation (1997) of both the position and compensation of female executives compared with male executives. They found that although there were no significant differences in base salaries or bonuses between male and female executives, male executives had more authority than did female executives.

Moreover, women often find themselves in stereotypically feminine areas (i.e., education, health, social services) and in less powerful positions than their male colleagues when they advance to managerial and higher level positions (Burress & Zucca, 2004). Therefore, female executives, faced with a lack of power and status in their positions, are forced to adopt a more deferential leadership style in order to get the cooperation that they require (Kanter, 1977). According to research done at the Kelley School of Business at Indiana University, the number of female executives in the United States is now lower than it was 10 years ago (Crainer & Dearlove, 1999). In 1987, there were 11 female directors at Fortune 500 companies; by 1997, there were just eight. The number of women CEOs in these companies was two in 1987 and remains the same a decade later (Crainer & Dearlove).

Crainer and Dearlove (1999) also mentioned that "demographic predictions in the United States suggest that the number of 35 to 44 year olds—the traditional executive talent pool—will fall by 15 percent between 2000 and 2015. At the same time, the number of 45 to 54-year olds—the current senior executive population—will rise" (p. 22). Baby boomers in the United States represent an aging workforce and an aging executive population because of a surplus of middle managers in the 1980s.

In addition to gender and age, level of education is an important factor that may affect an executive. Swinyard and Bond (1980) conducted a study of executives in 1967–1976 and found that subjects with a master's of business administration (MBA) degree got their executive positions at a younger age (44 years old) than those without MBAs (47). "New CEOs through this period increasingly relied more heavily on human capital as evidenced by increasing educational levels and greater reliance on a specialized graduate degree, the Master's of Business Administration" (Keiser, 2004, p. 56).

Furthermore, Doyle (1995) noted "…the urgent need for executive development to promote both individual learning and organizational adaptation and renewal" (p. 7). Thus, executive education is seen as a strategic tool. Papadakis and Bourantas (1998) found that the greater information-processing capabilities of CEOs stemmed from better education.

Another interesting point is that more recent studies including high technology industries have determined that CEOs in higher technology industries are more likely to have backgrounds in research and development, and tend to be younger than CEOs in lower technology industries (Hambrick, Black, & Fredrickson, 1992).

Therefore, high levels of education are associated with favorable attitudes toward innovation, a high capacity for information processing, and tendency to do more analysis and searching for information.

Methodology

Neuman (2000) suggested that social science research be divided into two categories: quantitative and qualitative. Quantitative research seeks explanatory laws, based on testing a theory, measuring it with numbers, and analyzing it using statistical

techniques. It is well suited to establishing a cause and effect relationship, it requires a hypothesis before research can begin, and it explains the causes of change primarily through objective measurement and quantitative analysis. In quantitative research, the researcher ideally is an objective observer who neither participates in nor influences what is being studied. This type of research typically employs experimental or correlational designs to reduce error, control biases, and eliminate unwanted influences.

A study based upon a qualitative process of inquiry has the goal of understanding a social or human problem from multiple perspectives. According to McMillan and Schumacher (2001), qualitative research describes and analyzes people's individual and collective social actions, beliefs, thoughts, and perceptions. Qualitative research aims for an in-depth description and rich, detailed, and valid data that contribute to a thorough understanding of the context. In addition, it is thought that researchers can learn the most by participating and immersing themselves in a research situation; they are more concerned with understanding what is happening as viewed by the participants. They typically employ no controls but rather attempt to understand the entire environment and help others to understand how participants are seeing the situation being studied.

This research investigated the possible relationship between business executives' leadership styles and their practices of knowledge management in Taiwan; therefore, it is a correlational design. Additionally, it was objective research, and none of the researcher's personal views were involved. The results were measured by numbers and presented by statistical analysis. The researcher used the quantitative, deductive method for test questions through the use of the State of Knowledge Management: An Assessment Questionnaire and Leader Behavior Description Questionnaire XII

(LBDQ–XII) as instruments for data collection.

Limitations of the Study

This research was limited by the following conditions. First, because knowledge management is a new topic in Taiwan, the researcher was limited by the small amount of literature available. Second, although the measures of leadership style and knowledge management are both developed in the Western culture, some contexts might not be applicable to the Taiwanese and Chinese culture.

Third, data for this research were obtained by a survey of executives from 151 high-tech Taiwanese companies in the Kun-Shan area of Mainland China. It was difficult to weight subgroups so that they represented the whole situation. Fourth, the research was conducted through the use of surveys. When subjects gave responses to items about their leadership styles, they could be influenced by the conservative business environment in Taiwan and be less inclined to respond with an answer that might be perceived as judging their leaders.

Significance of the Study

This study is significant because it investigated the relationship between executives' leadership styles and their practices of knowledge management. It therefore contributed to the theory of knowledge management and leadership style in the context of the Taiwanese culture. In order to stimulate economic activity, the Taiwanese government encourages and supports businesses so they have strong competitive abilities in the world. These enterprises are driving the new economy, generating employment, and promoting growth in developed economies. Since the 1990s, they have been increasingly recognized as a key to the revived competitiveness of Taiwan. They have helped the Taiwanese

economy in its renewal process.

This study could provide clues for the Taiwanese government and enterprises to improve their managers' leadership styles and knowledge management systems. For instance, this should help executives understand their characteristics and those of their subordinates, enabling the executives to recognize and provide for their subordinates' needs. This study could help executives choose when and how to use certain leadership styles and assist them in their understanding and implementation of knowledge management practices so that they can preserve and share knowledge.

Moreover, different leadership styles might influence executives who have diverse practices of knowledge management. Therefore, this study sought a suitable formula for success. Hence, this research not only added to the body of knowledge on the relationship between leadership styles and knowledge management applications in Taiwan but also helped improve leadership skills and gave new ideas for knowledge management in the enterprises.

The results of this study should further the understanding of leadership in Taiwan. Behaviors and values found in different cultures suggest that the automatic application of current theories of leadership in other cultures may not necessarily be effective or appropriate. This study has special significance in that it focused on Taiwan, where cultural aspects within the country can be expected to play a significant role in determining whether or not Western theories are applicable.

Overview of Chapters of the Research

Chapter 1 provided an overview of the situation of world economics and the Taiwanese investment companies in Mainland China, and introduced the problem

statement and research methodology. Chapter 2 includes a review of the literature and related theories wherein prior research investigated the areas of leadership, leadership theory, knowledge management, knowledge creation, information on the study instruments, and demographic variables influenced by culture. Chapter 3 includes the methodology of the research and contains the research design, participants, instrumentation, reliability and validity, data collection, data analysis, protection of human subjects, and summary. Chapter 4 presents the research results and data analysis. Chapter 5 includes a discussion of the results, conclusions, and recommendations.

Chapter 2: Literature Review

Introduction

The purpose of this study was to investigate the possible relationship between executives' leadership styles and their applications of knowledge management in Taiwan. Therefore, this research examined the areas of leadership, leadership theories, the nature of knowledge, and knowledge management. The first section supplies a better understanding of leadership, the second section examines the theory of leadership, the third section brings in the basic sense of knowledge management, and the fourth section provides an overview of knowledge and its impact on today's society.

Background information on the related variables includes the influence of demographics on knowledge management as well as the study instruments and Taiwanese culture. The literature not only provided related concepts but also helped establish the foundation of the study. Sources included books and journal articles obtained either in print or electronic form from databases such as WorldCat, Academic Search Premier, ABI/INFORM Global, and Dissertation Abstracts published from 1990 to the present.

Leadership

Definition

There is a multitude of ways to finish the sentence, "Leadership is...." In fact, as Stogdill (1963) pointed out, in a review of leadership research, there are almost as many different definitions of leadership as there are people who have tried to define it.

A leader is a person who influences individuals and groups within an organization, helps them establish goals, and guides them toward achievement of those goals, thereby allowing them to be effective. Some researchers have defined leadership as an integral

part of the group process (Krech & Crutchfield, 1948). Others defined it primarily as an influenced focus of a group process (Bass, 1960; Cartwright, 1965; Katz & Kahn, 1966). Leadership is a group phenomenon; there can be no leaders without followers. As such, leadership always involves interpersonal influence or persuasion (Nahavandi, 2003).

Development of Leadership Theory

Most leadership research focused only on the leader's past personality and actions; because of the quickly changing environment, understanding the current effectiveness of the organization is a huge challenge. Current leadership research changed the orientation to leadership style. Robinson (1993) defined leadership style as "… the characteristic manner in which a person behaves in attempting to influence the actions or beliefs of others, particularly subordinates" (p. 7). As Figure 1 illustrates, a leader can make a difference in measures of organizational effectiveness. Therefore, the leadership style is the most important factor that influences the group or company.

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┌─────────────────────┐     ┌──────────────────────┐
│ The Leader's Traits │     │ The Leader's Behavior│
│   Abilities         │     │   Task-oriented      │          ┌────────────────────────┐
│   Personality       │ ──▶ │   Person-oriented    │          │ Effective Results      │
│   Motivation        │     │   Initiating structure│         │   Production           │
│                     │     │   Consideration      │          │   Quality              │
│                     │     │   Transactional      │          │   Efficiency           │
│                     │     │   Transformational   │          │   Flexibility          │
└─────────────────────┘     └──────────────────────┘          │   Satisfaction         │
                            ┌──────────────────────┐     ──▶  │   Competitiveness      │
                            │ Situational Variables│          │   Development          │
                            │   Follower's needs   │          │   Survival             │
                            │   Task structure     │          └────────────────────────┘
                            │   Position power     │
                            │   Leader-follower trust│
                            │   Group readiness    │
                            └──────────────────────┘
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Figure 1. A Framework for Studying Leadership: The Development of Leadership

Note. From Gibson, L. J., Ivancevich, I. J., & Donelley, H. J. (1997). *Organizations, Behavior Structure Processes.* New York: McGraw-Hill. Reprinted with permission (see Appendix I).

Because leadership development involves more than just developing individual leaders, there is a bigger focus on the context in which leadership is developed and a growing consideration about how to best use leadership competencies and work/life balance issues (Hernez-Broome & Hughes, 2004). In the past, leadership development feedback naturally affected how people thought about themselves, not their interactions with others. Nowadays, leadership is defined as a process that creates, and is the result of, relationships that focus on the interactions of both leaders and coworkers, not just the competencies of leaders. In the future, leaders will need to build their understanding of the process of leadership, become conversant with doing business internationally, and conceive of strategies on a global scale.

The Trait Era

The trait era of leadership is considered to be the period from the late 1800s to the

mid-1940s. The trait theory attempted to identify specific physical, mental, and

personality characteristics associated with leadership success, and it relied on research

that related various traits to certain success criteria.

Of interest to scholars throughout the 20th century, the trait theory was one of the

first systematic attempts to study leadership. It proposed that leaders are born with special

qualities that enable them to lead others rather than to be dominated. In addition to being

studied by personnel testing, the traits of leaders have been studied by observation of

behavior in group situations, by choice of associates, by nomination or rating by

observers, and by analysis of biographical data. Table 1 provides the different

classifications of leaders' traits by different researchers.

Table 1

Studies of Leadership Traits and Characteristics

Stogdill (1948)	Mann (1959)	Stogdill (1974)	Lord, DeVader, and Alliger (1986)	Kirkpatrick & Locke (1991)
Intelligence	Intelligence	Achievement	Intelligence	Drive
Alertness	Masculinity	Persistence	Masculinity	Motivation
Insight	Adjustment	Insight	Dominance	Integrity
Responsibility	Dominance	Initiative		Confidence
Initiative	Extroversion	Self-confidence		Cognitive ability
Persistence	Conservatism	Responsibility		Task knowledge
Self-confidence		Cooperativeness		
Sociability		Tolerance		
		Influence		
		Sociability		

Note. From Northouse (2001). Reprinted with permission (see Appendix J).

The trait theory is alive and well. Researchers (Bryman, 1992; Kirkpatrick &

Locke, 1991; Bass, 1990) have seen resurgence in interest in the trait approach including studies on how traits influence leadership and play a role in determining leadership ability and effectiveness. Kirkpatrick and Locke said that "it is unequivocally clear that leaders are not like other people" (p. 59). Bass stated that individual factors of successful leadership could be classified into six groups: capacity, achievement, responsibility, participation, status, and situation.

However, the trait approach was challenged by research such as Stogdill's study (1948), which showed that an individual with leadership traits who was a leader in one situation might not be a leader in another situation. Leadership is much more than a combination of traits. Although the trait era's incompatible findings guided researchers to discover other ways of predicting and understanding who will be a successful leader, the acceptance of traits as one of the elements in the leadership structure is well established.

The Behavior Era

In the late 1940s, researchers began to explore the idea that how a person acts determines that person's leadership effectiveness because simply analyzing the leaders' traits cannot provide enough information about leadership effectiveness. They examined behaviors and their impact on measures of effectiveness such as production and the satisfaction of followers. Leadership behavior can be studied by analyzing what leaders do in relation to accomplishing tasks and maintaining the efforts of people performing the tasks. Leadership, as the behaviors of a leader, is connected to guiding group activities (Hemphill, 1957).

The behavior approach has three advantages over the trait approach: behavior can be taught, traits cannot; behavior can be more precisely and accurately measured than

traits; and behavior can be more objectively observed than traits (Nahavandi, 2003). "If trait research had been successful, it would have provided a basis for selecting the 'right' persons to assume formal positions in groups and organizations requiring leadership" (Robbins, 2001, p. 315).

Three kinds of leadership behavior were identified: democratic, autocratic, and laissez-faire leadership. The democratic leader allows followers to share in the decision-making process, while autocratic leaders like to make decisions alone. The laissez-faire leader is not involved with followers and gives them no direction.

The most wide-ranging of the behavioral theories resulted from research that began at Ohio State University in the late 1940s. The research team, directed by Ralph Stogdill, defined leadership as the behavior of an individual when directing the activities of a group toward goal achievement. The team eventually narrowed the list of leadership behaviors into two categories: initiating structure (task) and consideration (relationship).

Initiating structure means "…the extent to which a leader is likely to define and structure his or her role and roles of subordinates in the search for goal attainment" (Robbins, 2001, p. 316). Whereas the initiating structure factor includes a variety of task-related behaviors, such as defining roles and setting schedules, *consideration* refers to "…a type of leader behavior that describes the extent to which a leader is sensitive to subordinates, respects their ideas and feelings, and establishes mutual trust" (Hersey et al., 2001, p. 93). The consideration factor encompasses behaviors that help, look for, respect, and maintain a good relationship with employees.

Ohio State Leadership Studies. The Ohio State staff developed the Leader Behavior Description Questionnaire (LBDQ) to gather leaders' behavioral data. This

instrument is used to describe how leaders carry out their activities and contains 15 items

pertaining to initiating structure and 15 items pertaining to consideration. The two sets of

behaviors are two different dimensions rather than two ends of the same continuum. As

such, a leader can perform both sets of behaviors to varying degrees (Nahavandi, 2003).

The behavior of a leader could be described as any mix of both dimensions (see Figure 2).

The LBDQ has been employed to assess the relationship between leader behavior and a

variety of indicators of effective leadership in hundreds of surveys in the last 50 years

(Yukl, 2002).

High Consideration	**High Consideration and Low Structure**	**High Structure and High Consideration**
Low Consideration	**Low Structure and Low Consideration**	**High Structure and Low Consideration**
	Low Initiating Structure	High Initiating Structure

Figure 2. The Ohio State Leadership Quadrants

Michigan Leadership Studies. The Michigan Leadership Studies were conducted

in 1945 to determine the behavioral characteristics of leaders that appear to be related to

measures of performance effectiveness. The studies identified two concepts: employee

orientation and production orientation. Similar to the Ohio State Studies, employee

oriented means that leaders emphasize the relationship with their employees; production

oriented leaders tend to focus upon the technique or task aspects of the job.

The Managerial Grid. Robert R. Blake and Anne Adams McCanse developed the

Managerial Grid in 1964. The grid's two theoretical concepts emphasize task

accomplishment and the development of personal relationships. There are two axes in the grid, one represents task (x-axis) and the other represents relationship (y-axis). Both axes are scored on a 9-point scale, and scores from high to low are indicated from 9 to 1. It creates a 9-by-9 matrix outlining 81 different positions of leadership styles.

The five main leadership styles identified by the grid are:

1,1   Impoverished Managers: Low concern for production, low concern for people.

1,9   Country Club Managers: High concern for people, low concern for production

9,1   Task Managers: High concern for production, low concern for people.

5,5   Middle of the Road Managers: Medium concern for production, medium concern for people.

9,9   Team managers: High concern for production, high concern for people (Robbins, 2001, p. 317).

Overall, the behavioral approach offers noteworthy contributions to the research of leadership. Robbins (2001) said, "…the behavioral theories have had modest success in identifying consistent relationships between leadership behavior and group performance" (p. 318). Task- and relationship-oriented behaviors are especially representative of primary leadership behaviors, and the LBDQ is still a useful tool in the research.

The Contingency Era

In the 1960s, researchers began to believe that environmental variables played some role in leadership effectiveness. The focus of the Contingency Era was on the

observed behavior of leaders and their followers in various situations, not on any inborn

or developed ability or potential for leadership. Thus the contingency theory of leadership

proposed that leadership effectiveness depended on the fit between personality, task,

power, attitude, and perceptions.

Robbins (2001) remarked that "predicting leadership success is more complex

than isolating a few traits or preferable behaviors" (p. 318). Contingency Theory

proposes that training, education, and development can increase most people's

effectiveness in leadership roles (Hersey et al., 2001). Among the many theories that were

developed in this era are Fiedler's Contingency Model, House-Mitchell's Path-Goal

Theory, Hersey-Blanchard's Situational Leadership® Theory (SLT), and Leader-Member

Exchange Theory (LMX).

Fiedler's Contingency Model. The most widely recognized contingency theory is

Fiedler's contingency theory (Fiedler & Garcia, 1987). The contingency model of

leadership effectiveness assumes that the performance of a group is dependent on the

interaction between leadership style and situational favorableness (Gibson et al., 1997).

Fiedler created the Least Preferred Co-Worker (LPC) Scale for testing the success

of an individual's basic leadership style. People who have a low LPC rating are task

motivated; on the other hand, people who have a high LPC rating are relationship

motivated. Nahavandi (2003) added that "individuals who fall in the middle of the scale

have been labeled socio-independent" (p. 127).

Contingency theory suggested that situations could be classified by: (a)

leader-member relations, (b) task structure, and (c) position power. *Leader-member*

relations refer to the degree of confidence, trust, and respect that the leader obtains from

followers. *Task structure* refers to the degree to which the requirements of a task are clear and spelled out. *Position power* refers to the leader's official power to hire, fire, reward, or punish subordinates (Gibson et al., 1997).

The most advantageous situation for leaders to influence their followers is one in which they are well liked by the members of the group (good leader-member relations), have a powerful position (strong position power), and are directing a well-defined job (high-task structure). These three elements can be combined to describe different situations and determine how much control a leader has over a situation.

Fiedler recommends that organizations should concentrate on changing situations to fit their leader, rather than changing leaders to fit the situation. The "leader match" training program is a practical application of Fiedler's contingency approach that helps leaders identify their own style first and then evaluate the various leadership situations they face.

There are still some researchers who criticize the meaning and validity of the LPC Scale and the stereotype of task-motivated and relationship-motivated leaders. However, contingency theory offers an approach to leadership that has a long tradition. Daft (1999) explained that, "an important contribution of Fiedler's research is that it goes beyond the notion of leadership styles to show how styles fit the situation" (p. 98).

Path-Goal Leadership. Robert House developed the Path-Goal Theory, "... a contingency model of leadership that extracts key elements from the Ohio State leadership research on initiating structure and consideration and expectancy theory on motivation" (Robbins, 2001, p. 324).

Path-Goal Theory assumes that leaders can (a) correctly analyze the situation, (b)

decide which behaviors are required, and (c) change their behaviors to match the situation. In Path-Goal Theory, the role of leaders is to help strengthen linkages among effort, performance, and outcome through their own behavior. Moreover, the theory proposes that the leader can affect the performance, satisfaction, and motivation of a group by (a) offering rewards for achieving performance goals, (b) clarifying paths toward these goals, and (c) removing obstacles to performance.

The role of the leader is to remove barriers from the paths of subordinates so that they may fulfill their individual needs and accomplish their goals. The leader-follower relationship is based upon the exchange of guidance and support for productivity and satisfaction. The leadership style used varies according to the situation.

Hughes et al. (1996) stated that "the effective leader will provide or ensure the availability of valued rewards for followers and then help them find the best way of getting there" (p. 508). Therefore, effective leaders will support followers as needed and help them discover and remove barriers, and avoid dead ends.

The meaning of Path-Goal is that effective leadership should support followers, clarify the path to achieve the goal, and reduce hindrances on the way to attaining the goal (Robbins, 2001). According to the Path-Goal Theory, if a leader's behavior is acceptable, it will satisfy the subordinates in the immediate future (Daft, 1999).

House identified four kinds of leadership behavior: (a) the directive leader who lets followers know what is expected of them, schedules work to be done, and gives specific guidance as to how to accomplish tasks; (b) the supportive leader who is friendly and shows concern for the needs of followers; (c) the achievement-oriented leader who sets challenging goals and expects followers to perform at their highest level; and (d) the

participative leader who consults with followers and uses their suggestions before making a decision (Daft, 1999).

Theoretically, the Path-Goal approach suggests that leaders need to choose a leadership style that best fits the needs of subordinates and the work they are doing. A study by House (1996) indicated that a leader can change the behavior of subordinates by selecting a suitable style of leadership. Path-Goal Theory predicts that directive leadership is effective with ambiguous tasks, that supportive leadership is effective when subordinates need to be concerned for their welfare and creating a friendly working environment, that participative leadership is effective when tasks are unclear and subordinates are autonomous in their thinking, and that achievement-oriented leadership is effective for challenging tasks. Also, Path-Goal Theory proposes that a leader should be able to be either task- or relationship-oriented as the situation requires (Wren, 1994).

Additionally, there are more than 100 studies on Path-Goal Theory contributing to the knowledge of leadership and leadership effectiveness (Wofford & Liska, 1993). Most research testing the Path-Goal Theory has paid attention to the direct effects of leader behavior on satisfaction and performance. As shown in Figure 3, the total Path-Goal approach has not been subjected to a complete test. Leaders must consider the personal characteristics of subordinates and environmental pressures and demands on subordinates to accomplish work goals and derive satisfaction.

```
┌─────────────────────────────┐
│ Environmental               │
│ contingency factors         │
│   •  Task structure         │
│   •  Formal authority       │
│      system                 │
│   •  Work group             │
└─────────────────────────────┘
```

```
┌─────────────────────────────┐              Outcomes
│ Leader behavior             │                •  Performance
│   •  Directive              │                •  Satisfaction
│   •  Achievement oriented   │
│   •  Participative          │
│   •  Supportive             │
└─────────────────────────────┘
```

```
┌─────────────────────────────┐
│ Subordinate contingency     │
│ factors                     │
│   •  Locus of control       │
│   •  Experience             │
│   •  Perceived ability      │
└─────────────────────────────┘
```
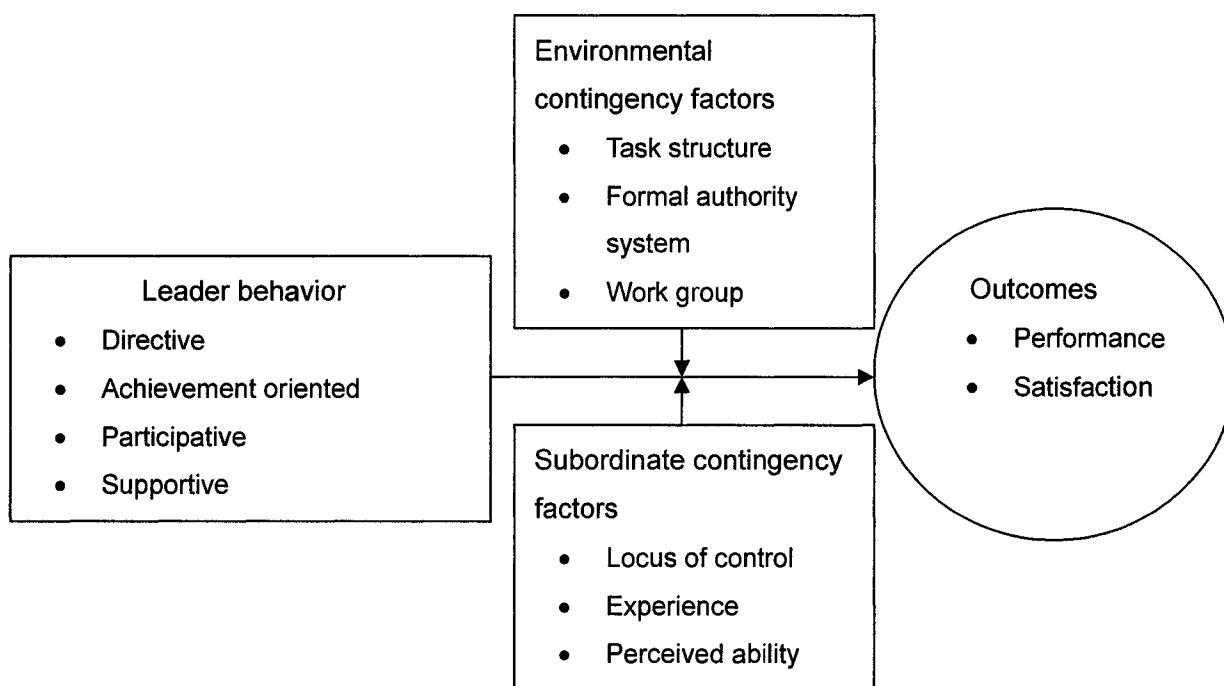
Figure 3. Path-Goal Theory: Environment Contingency Factors and Characteristics of Subordinates

Note. From Robbins, Stephen P. *Organizational Behavior–E-Business Updated Edition* (9th Edition), © 2001. Reprinted by permission of Pearson Education, Inc., Upper Saddle River, NJ. (See Appendix K.)

Situational leadership. The Situational Leadership® Model was developed by Paul Hersey and Kenneth Blanchard in late 1960s and purported that leader behavior is contingent upon variations in situations and that the leader should fit the leadership style to the demands of situations (Blanchard, 1985; Blanchard, Zigsrmiz, & Nelson, 1993). Situational Leadership, originally called Life Cycle Theory, is a contingency theory that focuses on the followers. It basically views the leader-follower relationship as similar to that between a parent and child. Just as parents need to abandon control to let the child become more mature, so too should leaders (Robbins, 2001).

Situational Leadership is composed of four leadership styles in accordance with the degree of task and relationship behaviors: high task and high relationship, high task

and low relationship, low task and high relationship, and low task and low relationship

(Hersey, 1992). The four styles can be applied to the given situation and the followers'

maturity levels. The situational approach is illustrated in the SL II model (see Figure 4).
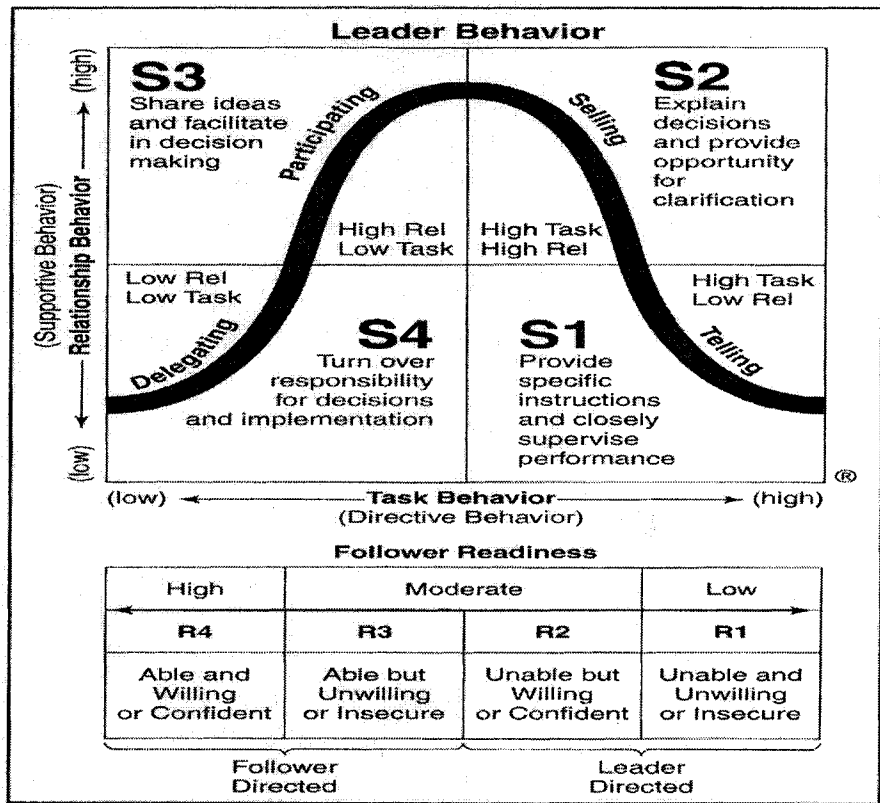
Figure 4. Situational Leadership® Model

Note. From Hersey, P. (1985). *Situational selling: An approach for increasing sales effectiveness.*
Escondido, CA: Center for Leadership Studies. Reprinted with permission (see Appendix L).

Because the degree of a leader's task and relationship behaviors is influenced by

the maturity of the followers, in order to reach leader effectiveness the leader should

diagnose the followers' level of maturity and the level of readiness in acting on a specific

task. According to Hersey (1992), *readiness* is the extent to which the follower has the

ability and the willingness to perform a specific task. Readiness is not a personal trait; it

varies with the job to be done. The model describes four levels: (a) unable and unwilling:

the follower is unable and lacks commitment, motivation, and/or confidence; (b) unable but willing: the follower lacks ability but is motivated, making an effort, and confident as long as the leader provides support; (c) able but unwilling: the follower has the ability to perform the task but is unwilling or apprehensive about using that ability, and (d) able and willing: the follower can perform the task, feels confident, and likes doing the job.

The Situational Leadership® Model stresses the concept that as people grow in their readiness, the action they need from the leader changes. Successful leaders or teachers can identify readiness levels and adapt their own styles to these levels. Therefore, the leader should use match the right leadership style to the situation to motivate or give directions to followers. So, an effective leader should be flexible and adapt styles to fit followers' specific needs.

A major part of the Situational Leadership® Model is concerned with the development level of subordinates. *Development level* refers to the degree to which subordinates have the competencies and commitment necessary to accomplish a given task or activity (Blanchard, 1985). The two factors of followers' maturity include ability, which refers to the followers' task-relevant skills and technical knowledge, and willingness, which refers to the followers' commitment, self-confidence, and self-respect (Hersey, 1992). By combining followers' ability and willingness, four levels of follower maturity are produced to acquire the basic leadership styles:

1. Telling: The followers need specific guidance when the situation results in low ability and low willingness.

2. Selling: The followers need direct guidance when the situation results in low ability and high willingness.

3. Participating: The followers need more to be participative when the situation results in high ability and low willingness.

4. Delegating: The followers need to be able to accept responsibility when the situation results in high ability and high willingness. (Hersey et al., 2001).

Only a few research studies have been conducted to justify the assumptions and propositions set forth by the Situational Leadership approach. However, Situational Leadership is easy to understand, well known, and frequently used for training leaders within organizations. The intuitively appealing concept that leaders need to adjust their style to followers' abilities has made the model popular with practitioners and trainers.

Leader-Member Exchange. The concept of Leader-Member Exchange (LMX) is that a leader may be very considerate toward one subordinate and very rigid and structured with another. Each relationship is unique, and it is the one-on-one relationships that determine subordinates' behavior. Graen and Uhl-Bien (1991) defined it as a distinctive, relationship-based exchange between a leader and followers.

This approach suggests that leaders categorize followers into two groups: in-group members and out-group members. The quality of LMX is based upon respect, trust, expectations, shared values, relationship development, and obligations. In-group followers receive the leader's motivation, competence, and interaction, as well as interesting assignments and increased performance opportunities. On the other hand, a leader treats out-group members differently, offering fewer promotions and having lower expectations and less relevant consciousness. The LMX approach presents the assumption that the leader's perception of subordinates influences not only leaders' behavior but also followers' behavior.

Table 2

Summary Comparison of Four important Situation Models of Leadership

	Fiedler's Contingency Model	House's Path-Goal Model	Hersey-Blanchard Situational Leadership® Theory	Leader-Member Exchange Approach
Leadership qualities	Leaders are task-oriented. The job should be engineered to fit the leader's style.	Leaders can increase follower's effectiveness by applying proper motivational techniques.	Leader must adapt style in terms of task and relationship behavior on the basis of followers.	Leader must be adaptive because there is no such thing as consistent leader behavior across subordinates.
Assumptions about followers	Followers prefer different leadership styles, depending on task structure. leader-member relations, and position power.	Followers have different needs that must be fulfilled with the help pf a leader.	Follower's maturity (readiness) to take responsibility and ability influences the leadership style that is adopted.	Followers are categorized as in-groups and out-groups.
Leader effectiveness	Effectiveness of the leader is determined by the interaction of environment and personality factors.	Effective leaders are those who clarify for followers the paths or behaviors that are best suited.	Effective leaders are able to adapt telling, selling, participating, and delegating styles to fit the followers' levels of maturity.	The perceptive leader is able to adapt her style to fit followers' needs.
History of the research problem	If investigations not affiliated with Fiedler are used, the evidence is contradictory on the accuracy of the model.	The model has generated very little research interest in past 2 decades.	Not enough research is available to reach a definitive conclusion about the predictive power of the theory.	The approach has generated a limited amount of research to support its assumptions and predictions.

Note. From Gibson, L. J., Ivancevich, I. J., & Donelley, H. J. (1997). *Organizations, Behavior Structure Processes.* New York: McGraw-Hill. Reprinted with permission (see Appendix M).

Transactional and Transformational Leadership

The new leadership approach has been broadly studied to find fresh versions of effective leadership style. In the old approaches, leadership was viewed as management

with the emphasis on the visions of the leader and innovation and learning in the organization. In the new approach, the focus is on motivation, inspiration, organizational commitment, empowerment, and stimulating extra effort from followers (Bryman, 1992).

Transactional leadership is considered to be an essential part of leadership (Nahanvandi, 2003). This approach uses the Path-Goal concepts as its framework. According to Bass (1990), there are two aspects of transactional leadership: (a) contingent reward: a leader provides contingent reward for effort in order to reinforce appropriate behaviors and discourage inappropriate behaviors; and (b) management by exception: A leader maintains the status quo and intervenes when employees do not meet acceptable performance levels.

Burns (1979) defined the *transactional leader* as one who influences others by appealing to their self-interest primarily through the exchange of valued rewards for services or other desired behaviors. The relationship between leader and follower is seen as a series of rational exchanges that enable each follower to reach his or her goals (Bass, 1990).

Transactional leaders use rewards as their primary source of power. Followers obey the leader when the exchange meets the followers' needs. The relationship continues as long as the reward is desirable to the follower, and both the leader and the follower see the transaction as a means of advancing toward their personal goal (Bass, 1990).

However, transactional leadership by itself is not enough for today's dynamic environment. Transformational leadership is helpful in creating and supporting organizational changes. Bass (1990) defined *transformational leadership* as going beyond the focus on the exchange between leaders and followers to a broader view that

elevates the interests of employees, stimulates employees to look beyond their own interests to what best benefits the group, and encourages employees to accept the organization's mission as their own. Transformational leaders may use several methods to achieve their goals, such as inspiring employees solely on the strength of personal charisma, appealing to the employee's emotional needs, or stimulating the employees intellectually.

The characteristics of the transformational leader include (a) charisma, which creates the intense emotional bond between leaders and followers; (b) inspiration, or the ability to express high expectations and use symbols to encourage employees to achieve an important goal; (c) intellectual stimulation of others, or the ability to challenge followers to solve problems by encouraging them to look at problems in new ways that require new solutions; and (d) individualized consideration, in which the leader treats each follower differently but equitably, and provides them with individual attention (Bass, 1990).

Transactional leadership is not the opposite approach to transformational leadership. In fact, transformational leadership is built on top of transactional leadership. Whereas the transactional leader motivates employees to perform as expected, the transformational leader typically inspires followers to do more than originally expected as they strive for higher order outcome (Burns, 1979; Den Hartog, Van Muijen, & Koopman, 1997). Transformational leaders motivate followers to work for goals that go beyond immediate self-interests to where what is right and good becomes important (Bass, 1997). Individuals who exhibit transformational leadership are often effective at motivating followers and have a strong set of internal values and ideals (Kuhnert, 1994).

A leader is expected to attempt to practice the right leadership behavior appropriate for a given context. Therefore, an effective leader must recognize the condition that he or she faces because leadership effectiveness relies greatly on how well the leadership style is applied to the situation.

Knowledge Management

The Nature of Knowledge

Being the driver of much of the modern world, knowledge itself is anything but easy to grasp. When knowledge becomes specialized, markets increase in diversity and disperse knowledge even further. Knowledge is a multifaceted concept with multilayered meaning. The history of philosophy since the classical Greek period can be regarded as a never-ending search for the meaning of knowledge.

Knowledge is a fluid mix of framed experiences, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. Knowledge is fluid as well as structured; it involves experience, truth, judgment, and rules of thumb (Davenport & Prusak, 1998). Thus, we can say knowledge comes from information as information is produced from data. People engage in each step of the transformation of information to knowledge. Therefore, knowledge is a process and a stock (Davenport & Prusak).

Drucker (1993) indicated that the basic economic resource—"the means of production" to use the economist's term—is no longer capital, natural resources, or labor. It is and will be knowledge. Knowledge is fast becoming the sole factor of production, sidelining both capital and labor.

Machlup (1983) saw information as a flow of meaningful messages that might

add to or restructure knowledge. Dretske (1981) offered more useful definitions, saying

that information a person receives is relative to what he or she already knows about the

possibilities at the source, but knowledge is identified with information-produced belief.

Moreover, information is that commodity capable of yielding knowledge, and what

information a signal carries is what we can learn from it.

Knowledge is very complex and comes in many forms and types. The most

common distinction is that between explicit and tacit knowledge (Nonaka & Takeuchi,

1995). Although codified knowledge and its capture is commonplace, tacit knowledge

has, up until recent years, proved elusive in its inclusion within an organization's

knowledge base. Tacit knowledge is that which is used by all people but not necessarily

easily articulated (Polanyi, 1967). Polanyi also stated that tacit knowledge is a subtle

conception rooted in cognitive schemata referred to as "mental models." According to

Nonaka and Takeuchi, "tacit knowledge is highly personal and hard to formalize, making

it difficult to communicate or to share with others. Subjective insights, intuitions, and

hunches fall into this category of knowledge" (p. 8). To sum up, tacit knowledge is

subjective and experience-based knowledge that cannot be expressed in words, sentences,

numbers, or formulas, often because it is context specific. It includes beliefs, images, and

technical skills such as craft and know-how.

Explicit knowledge is objective and rational knowledge that can be expressed in

words, sentences, numbers, or formulas (context free). It includes theoretical approaches,

problem solving, manuals, and databases. As Hedlund (1994) said:

> The current, and justified, fascination with the tacit component of
>
> knowledge must not cloud the fact that organizations to a large extent are

"articulation machines," built around codified practices and deriving some

of their competitive advantages from clever, unique articulation. In fact,

much of industrialization seems to have entailed exactly the progressive

articulation of craftsman-like skills, difficult but not impossible to codify.

(p. 76)

In contrast to individual knowledge, organizational knowledge is a more complex

and murky dynamic, involving socio-political factors of knowledge buying, selling,

brokering, pricing, reciprocity, altruism, reputation, and trust.

Knowledge in Organizations

The only sustainable advantage a firm has comes from what it collectively knows,

how efficiently it uses what it knows, and how readily it acquires and uses new

knowledge. First, companies must understand the difference between data, information,

and knowledge. Generally speaking, datum is transformed into information after it has

been contextualized, categorized, calculated, corrected, and condensed. It becomes

knowledge after a process involving comparison, consequences, connections, and

conversation.

The knowledge possessed by a firm is a dynamic entity that alters over time as

new knowledge is added and knowledge in use fades (March, 1991; Winter, 1987). Thus,

to survive, firms must sustain their capability to produce through ongoing maintenance

and development of their knowledge, and to do so they use their knowledge, which

otherwise degenerates.

Firms' knowledge is typically an immeasurable resource, such as technological

knowledge, market knowledge, and knowledge about how to organize production,

coordinate diverse skills, and integrate multiple streams of technologies. Knowledge

often is found to be embedded in routines, structure, and culture (Walsh & Ungson, 1991).

Therefore, the knowledge possessed by a firm does not constitute a homogeneous mass.

Instead, within a firm one can find islands of specialized knowledge possessed by

organizational sub-units. Such knowledge needs to be combined or cross-fertilized with

knowledge from other sub-units to stay viable and valuable to the firm, and perhaps even

more important, to prevent sub-units from getting caught in competence traps. In turn,

this implies that the character of the knowledge networks within a firm determine its

ability to both exploit knowledge and explore new business opportunities, and thereby, its

ability to cope with uncertainty and change. Table 3 presents a comparison of

knowledge-related constructs.

Table 3

Knowledge-Related Constructs

References	Construct	Explanation
Itami and Roehl (1987); Skandia (1994)	Invisible assets, intellectual capital	Resources based on information (i.e., customer trust, trade name, culture, capacity of management)
Hall (1992; 1993; 1994)	Intangible resources	Intangible assets that can belong to a legal person are distinguished from those that are not easily transferable (i.e., the knowledge of customers and the culture of the organization).
Amit and Schoemaker (1993); Winter (1987)	Strategic assets	A combination of resources and capabilities that is difficult to imitate or transfer, rare, and an appropriate competitive advantage in the organization.
Cohen and Levinthal (1990)	Absorptive capacity	A firm's capacity to develop new knowledge in interaction with its environment.
Henderson and Cockburn (1994)	Architectural competences	Ability to integrate new knowledge into the organization
Prahalad and Hamel (1990); Hamel and Heene (1994b); Rumelt (1994)	Core competences	Combination of abilities and technology that is based on explicit and tacit knowledge and characterized by durable stability and cross-product influence. Moreover, core competences create value for the customer, are unique among competitors, allow access to new markets, are not easily imitable or transferable, and are synergistically linked to other competences.
Walsh and Ungson (1991); Pautzke (1989); Lyles and Schwenk (1992)	Organizational memory	Capacity for storing organizational knowledge (in knowledge structure)
Zander and Kogut (1995); Amit and Schoemaker (1993); Stalk et al. (1992); Grant (1991)	(Core) capabilities	Capacity of an organization to use resources. It is based on organizational principles that structure, coordinate and communicate knowledge.
Aaker (1989); Klein et al. (1991)	Skills	"Capabilities" and "competences" are often used synonymously and refer to social systems. "Skills" describe the individual capabilities on which competences are based.

Note. From Krogh, K. W., Roos, J., & Kleine, D. (1998). *Knowing in Firms.* London: Sage. Reprinted with permission (see Appendix N).

Nonaka (1994) argued that the current paradigm in which organizations process information efficiently in an "input-process-output" cycle represents a "passive and static view of the organization" (p. 14). He also said that organizational learning results from a process in which individual knowledge is transferred, enlarged, and shared upwardly to the organizational level. This process is characterized as a spiral of knowledge conversion from tacit to explicit.

Wiig (2000) listed two knowledge-related aspects that are vital for viability and success at any level. One is knowledge assets, which include the valuable knowledge available to be used or exploited and which must be nurtured, preserved, and used to the largest extent possible by both individuals and organizations. The other one is knowledge that is related to processes, those that enable the company to create, build, compile, organize, transform, pool, apply, and safeguard knowledge.

Knowledge Application and Creation

The world is experiencing a detonation of knowledge management approaches. Table 4 categorizes the broad and emerging area of knowledge management.

Table 4

Selected Knowledge Applications

References	Research focus	Explanation
Nonaka (1991; 1994); Nonaka and Takeuchi (1995); Hedlund (1994); Hedlund and Nonaka (1992); Gomez and Probst (1995); Von Krogh and Venzin (1995)	Knowledge management models	Different epistemological and ontological dimensions are integrated into phased models. These describe both processes of knowledge development and their impact on organizational activities.
Von Krogh and Roos (1995a; 1995b); Astley and Zammuto (1992); Brown and Duguid (1991); Kogut and Zander (1992); Muller-Stewens and Pautzke (1991)	Knowledge, conversations and cooperation	Knowledge is developed over language and symbolic communication. Conversations and the modes of cooperation therefore significantly influence the process of knowledge development.
Eccles (1991); Kaplan and Norton (1992; 1993); Stewart (1994); Skandia (1994)	Knowledge measurement and evaluation	The tendency is toward measuring qualitative constructs mainly related to the evaluation of existing, task-specific knowledge. The significance of knowledge evaluation evolved from its merely communicative function for the shareholders into a strategic instrument.
Badaracco (1991); Winter (1987); Richter and Vettel (1995); Hamel (1991); Zander and Kogut (1995); Reed and DeFillippi (1990); Amit and Schoemaker (1993); Black and Boal (1994)	Knowledge transfer	Two themes dominate the literature: intended knowledge transfer and imitation of knowledge by competitors. The main points of research are knowledge classifications according to transferability, codification of knowledge, and the dilemma of simultaneous transfer and imitation.
Huff (1990); Walsh and Ungson (1991); Lyles and Schwenk (1993); Sandelands and Stablein (1987); Weick and Roberts (1993); Pautzke (1989); Walsh (1995)	Knowledge and cognition	Representation, acquisition, storage, and retrieval of knowledge in organizations are expanded upon.
Winograd and Flores (1986); Zuboff (1988); Davenport (1989); Davenport et al. (1989; 1992); Blackler et al. (1993); Scarborough (1993)	Knowledge and information technology	Points of focus are the impact of "new" information and communication technologies on knowledge development in virtual organizations, the effects of mechanisms of control and organizational structures, and the management of incoming information.

Table 4 (*continued*)

References	Research focus	Explanation
Pfeffer (1981; 1992); Lane (1991); Gergen (1995); Hosking (1995); Ibarra (1993)	Knowledge and power	Explores the influence of power on the legitimization of knowledge. It explores to what extent existing power structures determine what knowledge is accepted as "real." Power therefore does not necessarily influence the search for truth in a negative way, but it definitely is an important factor in the construction of "reality."
Perry (1993); Knights et al. (1993); Kiesler and Sproull (1982); Tushman and Moore (1988)	Knowledge, networks and innovation	Examines the cooperation of experts in physically separated networks aimed at generating innovation. Topics are the application of IT and the role of trust and power.

Note. From Krogh, K. W., Roos, J., & Kleine, D. (1998). *Knowing in Firms.* London: Sage. Reprinted with permission (see Appendix O).

Recognition of organizational knowledge creation as a corporate resource has generated considerable interest in recent years. The evolution toward a "knowledge society" underscores the salience of the knowledge creation process within organizations (Bell, 1973; Drucker, 1968; Toffler, 1990).

Nonaka (1994) stated that individual commitment is generated through intention, autonomy, and environmental fluctuation. This suggests that knowledge creation may be activated when organizational members have freedom and sufficient purpose to pursue new knowledge, such as when confronted by change in the external environment.

Nonaka and Takeuchi (1995) identified four kinds of knowledge creation in organizations known as *socialization*, which is the exchange of experiences whereby personal knowledge is created in the form of mental models. According to Bandura (1982), individuals may learn and gain a sense of competence by observing behavior modeled by others. For example, mentoring and apprenticeships instruct tacitly through

observation, imitation, and practice. *Externalization* is personal knowledge that is made explicit in the form of metaphors, analogies, hypotheses, and models. Because the conversion of tacit knowledge into explicit knowledge involves the reification of an esoteric, cognitive abstraction into a concrete concept, metaphors are recommended as a way to facilitate this translation (Nonaka, 1994).

Internalization is a process in which explicit knowledge becomes part of tacit knowledge. Where externalization utilizes metaphors to facilitate knowledge conversion, internalization represents an active process of learning. Nonaka (1994) described this as "participants ... sharing explicit knowledge that is gradually translated, through interaction and a process of trial-and-error, into different aspects of tacit knowledge. ...Tacit knowledge is thus mobilized through a dynamic entangling of the different modes of knowledge conversion" (p. 20).

Finally, there is *combination,* which is how notions are synthesized into a knowledge system. Explicit knowledge may be exchanged during meetings or conferences in which a diversity of knowledge sources combine to shape a new and enhanced conception.

In view of the above scenario, it could be concluded that the whole perspective of knowledge management becomes a central productive and strategic asset where the success of the organization increasingly depends on its ability to gather, produce, maintain, and disseminate knowledge.

<div align="center">*Summary*</div>

In this chapter, related literature was reviewed to establish theoretical bases for this research. According to O' Connor (1997), "leadership is the ability to present a vision

so that others want to achieve it. It requires skill in building relationships with other people and organizing resources effectively. Mastery of leadership is open to everyone" (p. 34). Although there are various definitions of leadership, each point of view recognizes that leaders guide followers to reach goals. The modern scientific approach to leadership can be divided into three general eras or approaches: the trait era, the behavior era, and the contingency era. Each era conducted different studies of leadership.

In contrast to trait theory, the behavior theories have had modest success in identifying consistent relationships between leadership behavior and group performance (Robbins, 2001). According to Northouse (2001), revisions and versions of the situational approach, a kind of behavior theory, have been used widely in education and training of leaders throughout the United States. Additionally, the most widely used terms in the taxonomy of leadership are task-oriented and relationship-oriented behaviors.

Bass (1997) mentioned that organizations that are ready and willing to change are more transformational than transactional in terms of the new paradigm of leadership. Perhaps because of the numerous academic databases about methodology and interpretation, or because of the fast pace of cultural, social, and organizational change, academic researchers and practitioners have shown a renewed interest in the topic of leadership.

There are few, if any, research studies focusing on the influence of leadership style on executives' view of knowledge management. However, a knowledge strategy can not only improve a company's ability to install problem-solving teams but also to develop content experts in response to client needs, rapidly and internationally. As Nonaka and Takeuchi (1995) said, "We are making history; our dream of revolutionizing the

combustion engine will be realized through our knowledge" (p. 43).

There are three knowledge management dimensions in this study; they focus on the nature of the knowledge, effectiveness in creating an environment for knowledge sharing, and how knowledge affects today's society. Companies must recognize they are under a severely competitive environment; those that are drowning in information and starving for knowledge will not survive the transition from the industrial age to the knowledge age (Liebowitz, 2000).

Besides leadership styles, executives' practices of knowledge management may be influenced by demographic variables. This study included research into the effect of seven demographic variables: gender, age, executive position and field within the company, years of leadership at the institution, level of education, years of working in the company, and total years of seeing leadership management experience. This research used the Leader Behavior Description Questionnaire (LBDQ) and State of Knowledge Management. These two survey instruments have been tested in the United States and show evidence of high reliability and validity (Becerra-Fenandez & Sabherwal, 2001; Halpin & Winer, 1957a).

Chapter 3: Methodology

Introduction

This research was designed to examine the possible relationship between leadership style and the use of knowledge management by leaders at 151 Taiwanese companies. This chapter includes a description of the hypotheses, research design, participants, instrumentation, data collection, protection of human subjects, data analysis, and summary.

Research Design

The purpose of this study was to investigate the possible relationship between leadership styles and the use of knowledge management by Taiwanese leaders in the Kun-Shan area of Mainland China. In addition the researcher collected information on these executives' demographics, including gender, age, level of education, executive position in the company, years with the present company, years of leadership with the present company, and years of total leadership with all companies. These demographics were examined for their relationships with the variables.

A quantitative approach was used in this study. Huysamen (1997) said that "descriptions of quantitative research typically discern a cycle of successive phases of hypothesis formulation, data collection, analysis and interpretation" (p. 1). In addition, a large part of data analysis of quantitative research is statistical, striving to show that the world can be looked at in terms of one reality; this reality, when isolated in context, can be measured and understood, a perspective known as positivism (Gay & Airasian, 1999).

Using a deductive approach, quantitative research seeks to establish facts, make predictions, and test hypotheses that have already been stated. Descriptive research has

been characterized as the study of the current or past status of something, such as behaviors, attitudes, and other characteristics of participants (McMillan & Schumacher, 2001). Correlational research studies the relationship between two variables (Howell, 1999). Therefore, this was a descriptive and correlational study.

A quantitative methodology was appropriate for this study because the researcher employed a correlational design to reduce error, control biases, remove unwanted influences, and conduct analysis through objective measurement and statistical techniques. Moreover, the researcher was an objective observer who neither participated in nor influenced what was being studied.

Participants

Taiwanese companies that invest in Mainland China include those investing money in local companies and those establishing various subsidiaries. The majority of high-tech companies' investments are in the Changjiang Delta, an area including and surrounding Shanghai and the provinces of Jiangsu and Zhejiang. They invest there because of low labor costs, good location, and helpful local governments.

Furthermore, Changjiang Delta has Shanghai Zhangjiang Hi-Tech Park, the most famous industrial park in China. Scientific talent has concentrated at the delta because it has a good geographical location and many famous universities to nurture interest in the sciences. Travel and transportation are very convenient for overseas companies: to the east is Japan, to the northeast is Korea, and to the South are Taiwan and Singapore. The delta is also a region regarded as having very good credit and legal environments. The government's work is comparatively visible. Figure 5 illustrates the eastern side of China, including the Shanghai area.

Figure 5. Map of East Mainland China

Note. Reprinted from the February 2003 Asia Pacific Supplement of *Solid State Technology.* Copyright ©
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The most important reason that the Kun-Shan area of the delta has become one of

the biggest beachheads for the Taiwanese investment invasion is that it is just 50

kilometers west of downtown Shanghai. Moreover, Jiangsu, which is in the area, is the

main target of Taiwan's investment in the mainland; most of Taiwan's investment is in

new and high technology industries. Jiangsu pays attention to three hi-tech industries—information technology (IT), new materials and heavy petrochemical, and new medicine. Jiangsu has become an important IT manufacturing base. Many Taiwanese and international IT manufacturers are attracted to Kun-Shan for its proximity to Shanghai; it also has cheaper land and labor costs than Shanghai. This study focused only on Taiwanese companies in Mainland China so as to serve as a model study that could later be applied to other institutions of the same academic level.

The Chinese National Federation of Industries (CNFI) published *The List of Taiwanese Businesses in Mainland China Association* in 2004. According to this book, 151 Taiwanese companies had established high-tech companies in Kun-Shan. The researcher defined high-tech companies as having the following characteristics: (a) it spends much of its capital doing research and inventing or developing innovative, advanced technological skills; (b) employees have strong technical and science backgrounds and implement those theories in the manufacture of their products; and (c) if new skills are developed, they can effectively and speedily replace the current way of production and can be applied to create and meet the market needs.

The potential participants included 163 executives from 151 companies. These participants were either a board chairman; vice chairman; chief executive officer (CEO); president; vice president in charge of a principal business unit, division, or function (such as sales, administration or finance); or any other officer who performs a policy-making function, excluding those in the human resources department.

Each of the 163 executives was asked to complete two survey instruments. The researcher received direct access to the companies' executives and got approval to collect

data from the organizations. Therefore, a high level of cooperation was assured.

Instrumentation

The study used surveys as its method of quantitative data collection. Fowler (1998) said that a survey design provides a quantitative or numeric description of some fraction of the population—the sample—through the data collection process of asking people questions. Two survey instruments were used in this study: Leader Behavior Description Questionnaire–Form XII (LBDQ–XII) Leader-Self Form and the State of Knowledge Management: An Assessment Questionnaire.

Data were collected by using questionnaire packets. Each packet included a letter that thanked respondents for participating and asked for their informed consent. The letter briefly described the topic of the study and gave instructions for completing the questionnaires. The letter also emphasized that there were no right or wrong answers.

Leader Behavior Description Questionnaire (LBDQ)

The Leader Behavior Description Questionnaire–Form XII (LBDQ–XII) was "… developed for use in obtaining descriptions of a supervisor by the group members whom he supervises" (Stogdill, 1963, p. 1). Stogdill noted that the instrument contained items describing the manner in which a leader might behave, along with the respondent rating of the way in which the leader is perceived to engage in each type of behavior. The respondents judge the frequency with which their leader engages in each form of behavior by checking one of five descriptions: *always, often, occasionally, seldom,* or *never.*

Two broadly defined dimensions of behaviors, consideration and initiation of structure, were established as encompassing a wide variety of leader characteristics. The

consideration structure refers to behavior showing friendship, trust, respect, and warmth between the leader and members of the group. This dimension of leadership behavior is more relationship oriented. The initiation structure involves attempting to set channels of communication, ways of getting the job completed, and well-defined patterns of organization. Initiating structure behaviors describe leaders who are task oriented. Thus, consideration and initiating structure are dimensions of observed behavior as perceived by others (Yukl, 2002).

The LBDQ–XII contains 100 items that describe specific ways in which leaders behave. It represents the fourth revision of the questionnaire and includes 12 subscales; each subscale is composed of either 5 or 10 items. A subscale is essentially defined by its component items and stands for a complex pattern of behavior. Following are the subscale definitions (Stogdill, 1963, p.3):

1. Representation: speaks and acts as the representative of the group (5 items).

2. Demand Reconciliation: reconciles conflicting demands and reduces disorder to system (5 items).

3. Tolerance of Uncertainty: is able to tolerate uncertainty and postponement without anxiety or upset (10 items).

4. Persuasiveness: uses persuasion and argument effectively; exhibits strong convictions (10 items).

5. Initiation of Structure: clearly defines own role and lets followers know what is expected (10 items).

6. Tolerance of freedom: allows followers scope for initiative, decision, and action (10 items).

7. Role Assumption: actively exercises the leadership role rather than surrendering leadership to others (10 items).

8. Consideration: regards the comfort, well being, status, and contributions of followers (10 items).

9. Production Emphasis: applies pressure for productive output (10 items).

10. Predictive Accuracy: exhibits foresight and ability to predict outcomes accurately (5 items).

11. Integration: maintains a closely knit organization, resolves inter-member conflicts (5 items).

12. Superior Orientation: maintains cordial relations with superiors, has influence with them, and is striving for higher status (10 items) (Stogdill, 1963, p.3).

LBDQ–XII uses a scale with responses numbered from 1 (*always*) to 5 (*never*) to be used by leaders to describe their own behavior. Scoring of the responses to each statement is such that *always* gets 5 points, *often* gets 4 points, *occasionally* gets 3 points, *seldom* gets 2 points, and *never* gets 1 point. The score for consideration and initiating structure, as designed by Halpin (1957), was determined by calculating the sum of the 15 items in each dimension. The range of scores was 0 to 60 (Halpin). However, 20 items (6, 12, 16, 26, 36, 42, 46, 53, 56, 57, 61, 62, 65, 66, 68, 71, 87, 91, 92, 97) are scored in the reverse direction in order to avoid bias of respondents.

The LBDQ includes 15 items each pertaining to the dimension of consideration and initiating structure. According to Hersey et al. (2001), the concepts of task behavior and relationship behavior are similar to the initiating structure and consideration of the Ohio State studies. The results can be divided into four kinds of leadership style as

follows: (a) high initiating structure and low consideration is the same as telling

leadership style, (b) high initiating structure and high consideration is the same as selling

leadership style, (c) low initiating structure and high consideration is the same as

participative leadership style, and (d) low initiating structure and low consideration is the

same as delegating leadership style (Hersey et al., 2001).

State of Knowledge Management: An Assessment Questionnaire.

In this research, business executives measured their own practices of knowledge

management using the State of Knowledge Management: An Assessment Questionnaire.

Irma Becerra-Fernandez and Rajiv Sabherwal (1999) created the questionnaire based

upon empirical research, prior literature on knowledge management, and feedback from

the pre-test at Kennedy Space Center's (KSC) Chief Information Office.

The questionnaire was utilized to analyze the current types, uses, and

effectiveness of knowledge in order to develop a detailed set of recommendations about

knowledge management in organizations. Becerra-Fernandez and Sabherwal (1999)

viewed knowledge broadly in the two dimensions of explicit knowledge and tacit

knowledge.

They identified 37 knowledge management tools used in the KSC. Many of these

tools have been highlighted in the literature (Davenport & Prusak, 1998; Nonaka &

Konnu, 1998) and were examined by Becerra-Fernandez and Sabherwal to discover

which tools were keys to each knowledge management process. They then were able to

reduce the number of tools to 25 in order to avoid overloading study participants.

Becerra-Fernandez and Sabherwal (1999) included questions to evaluate the use

of each of these 25 tools. Exploratory factor analysis found six items that loaded on

multiple dimensions. These items are case studies and stories, simulations and game playing, drawing inferences from trends in historical data, development of prototypes, learning from prototypes, and learning from concept maps and expert systems.

Therefore, the authors retained 19 items for analysis. Using LISREL 7.20, Becerra-Fernandez and Sabherwal (1999) conducted a confirmatory analysis to access the overall measurement models involving the 19 indicators of knowledge management processes. The questionnaire was divided into four classifications: externalization, combination, socialization, and internalization. Among the 19 statements, statements 7, 17, 18, 19, 23, 24, and 25 were classified as externalization; statements 13, 20, 21, and 22, combination; statements 2, 3, 4, and 6, socialization; and statements 5, 10, 11, and 12, internalization.

The Likert scale is the most widely used scale in the United States (Bernard, 2000), and it is very moldable because the descriptors on the scale are changeable with the features of the statements of the survey instrument. It is also very easy for the participants to present their opinions, beliefs, and ideas by checking the descriptors.

The State of Knowledge Management uses a 5-point Likert scale. In the scale, 1 means *very infrequently*, 2 means *infrequently*, 3 means *moderate frequency*, 4 means *frequently*, and 5 means *very frequently*. Scoring of the subjects' responses to each statement is such that *very frequently* gets 5 points, *frequently* gets 4 points, *moderate frequency* gets 3 points, *infrequently* gets 2 points, and *very infrequently* gets 1 point. Scores on each dimension range from 15 to 75; however, incomplete surveys are regarded as invalid.

Demographic Questionnaire

The demographic information collected on the business executives included: working title in the company; gender; age; education level sorted into college or under, university, master's and doctorate; years with the present company; years of leadership with the present company; and years of total leadership with all companies.

Reliability and Validity

Validity is a judgment of the appropriateness of a measure of specific inferences, decisions, consequences, or uses that result from the scores that are generated (McMillan & Schumacher, 2001). Lacity and Jansen (1994) defined validity as making common sense, being persuasive, and seeming right to the reader; it is the degree to which a scale measures what it purports to measure.

The goal of developing reliable measures is to minimize the influence of chance or other variables unrelated to the intent of the measure on the scores (McMillan & Schumacher, 2001). The reliability coefficient shows the degree of reliability; the higher the coefficient, the better the reliability. According to Nuannlly and Bernstein (1994), a correlation coefficient greater than .70 is regarded as having very high reliability.

The validity and reliability of both surveys were confirmed in previous studies. Numerous investigators have demonstrated the reliability and validity of the LBDQ. Stogdill (1963) tested the validity of the various subscales of the LBDQ. Also, Halpin and Winer (1957a) conducted factor analysis to determine the construct validity of the LBDQ. They found that 83.2% of the total factor variance was explained by the factors of consideration and initiating structure.

Halpin and Winer (1957b) found that the split-half reliability for the LBDQ

was .86 for task and .93 for consideration. Seeman (1957) found a reliability of .89 for

consideration and for task, and Schriesheim and Kerr (1974) considered the LBDQ to be

a valid measure of subordinate perceptions of leader behavior.

Table 5 presents the reliability of the LBDQ–XII in labor presidents compared to

the reliability of the translated LBDQ–XII (Stogdill, 1963). In addition to its common use

on managers in the United States, the LBDQ has been applied successfully in Asia. The

LBDQ was used in Singapore, resulting in high reliabilities (Putti & Tong, 1992). Selmer

(1998) also employed the LBDQ–XII with results of good reliability comparing

indigenous and expatriate managers in Hong Kong.

Table 5

The Reliability of the LBDQ XII in Labor Presidents and

Reliability of the Translated LBDQ XII

Behaviors	Original LBDQ–XII	Translated LBDQ–XII
Representation	.70	.83
Demand Reconciliation	.81	.59
Tolerance of Uncertainty	.82	.69
Persuasiveness	.80	.72
Initiation of Structure	.78	.76
Tolerance of Freedom	.58	.77
Role Assumption	.86	.58
Consideration	.83	.71
Production Emphasis	.65	.73
Predictive Accuracy	.87	.75
Integration	-	.71
Superior Orientation	-	.76

Note. From *Leadership Style and Employees' Organizational Commitment:*

An Exploration Study of Managers and Employees of Hsin-Zhu Science Park

(p. 69), by C. S. Chien, 2003, University of the Incarnate Word. Copyright 2003

by Chien. Adapted with Permission (see Appendix Q).

The State of Knowledge Management instrument was tested by Kennedy Space

Center's (KSC) Administration Officer and achieved a 79.5% response rate. Before the

formal survey, the questionnaire creators got feedback from a pre-test at KSC's Chief I

Officers' office to ensure the validity. The reliabilities of the measures for internalization,

externalization, combination, and socialization process in the study were .74, .85, .80,

and .66, respectively.

Because the study measured business executives in Taiwan, Chinese versions of

the LBDQ and State of Knowledge Management instruments were needed. Permission to

use the LBDQ–XII Chinese version (2003) was obtained from Miles Chien, who

translated the instrument into Chinese with three doctoral program students and then

integrated it into one questionnaire revised by a scholar in the leadership field.

The researcher translated the State of Knowledge Management instrument into

Chinese (Mandarin). It then was translated back into English by a second person. Any

differences between the two English versions were then reconciled to ensure an accurate

translation. In addition, the instrument was reviewed by a focus group of three

English-Chinese bilingual speakers. Therefore, the questionnaire was determined to be

appropriate in its development for application in Taiwan.

Data Collection

In the primary data collection phase, the researcher used typical survey

procedures, including "…planning and design, administration, data analysis, feedback

and interpretation, action planning and follow-through" (Kraut, 1996). Data for this

research were acquired from the survey of 163 selected Taiwanese executives from

companies in the Kun-Shan area of Mainland China. The researcher also used secondary

data sources, which according to Chien (2003) include "reports, books, essays,

dissertations, related periodicals, and academic journals." The third level of data sources were related to leadership theory and knowledge management including encyclopedias, dictionaries, yearbooks, and bibliographies.

The executives were given a survey packet including a consent form (see Appendix B), a survey of the demographic questions, and the Chinese versions of the Leader Behavior Description Questionnaire–Form XII (LBDQ–XII) and the State of Knowledge Management: An Assessment Questionnaire. Also, each packet contained a self-addressed stamped return envelope. Participants were asked to complete and returned the surveys within 2 weeks. A follow-up reminder and note were sent to non-respondents.

The survey packets were numerically coded to keep a record of respondents. Five weeks following the initial mailing, the researcher contacted participants by phone to encourage them to complete and send in the surveys and sent non-respondents another copy of the questionnaires. Five weeks after the second mailing, the researcher called participants and sent them cards to remind them to return the surveys. Data collection took 10–11 weeks to complete.

There were no responses to the second mailing of the package. The researcher received much criticism from the participants, whose feedback specifically addressed the length of the instrument, which was time-consuming to complete. Most of the participants said that if the questionnaires were shorter, they would be more willing to answer them. They also said they were busy and did not like to answer questions unless they knew the researcher well.

Indeed, a Wall Street Journal survey of 100 Fortune 1,000 companies showed that corporate leaders work an average of 56.9 hours a week, 62% more time than employees

who work a 35-hour week. It also found that middle managers work an average of 50.1 hours a week.

Furthermore, *Guanxi* is a particular form of relationship in the Chinese culture, especially in the business field. It can be seen more obviously and strongly in the higher hierarchy of Chinese society.

> Relationships however are often built on a cultural platform which means
> the route to developing a good relationship can be very different in
> Western to Eastern cultures. In China and Chinese-based economies,
> relationships are paramount in business, to the extent that the Chinese
> have developed the word Guanxi to describe the special relationships that
> are built into networks, and which underpin the way that the Chinese
> prefer to do business. (Buttery & Wong, 1999, p.147)

Based upon the feedback from executives, the researcher limited the LBDQ–XII to the sections on consideration and initiating structure during the data collection process.

Additionally, the researcher reviewed most of the dissertations whose topics related to "Taiwanese company in Mainland China" in the National Central Library in Taiwan. The researchers who sent their questionnaires to Mainland China had 15% to 40% return rates. To improve return rates, the researcher developed the following strategies for data collection:

- Accounting Affairs office: The researcher contacted these offices, which have customers who are qualified for the research, and asked them to send their customers a card with questionnaire. Two of the biggest Accounting Affairs office in Taipei cooperated.

- Many Taiwanese universities have executive master's of business administration (EMBA) programs and most students in these programs are managers. Some department assistants at universities were willing to send emails to EMBA students; therefore, a web-based questionnaire page was developed for them to fill out. In order to ensure that the respondents were qualified to participate in the research, a few questions were added to the demographic part in the Chinese version.

- The researcher attended conferences that related to Taiwanese investment in Mainland China and gave out questionnaires.

- The researcher used personal relationships (friends, connections, networks, and family members) to find participants. As a result of this strategy, the researcher was introduced to the chief leader of the Kun-Shan Taiwanese Association. This was the main channel to get the responses and assistance.

Data Analysis

After collecting responses, the researcher scored the instruments and organized the data. The researcher used the Statistical Package for Social Science (SPSS) edition 12.0 for Windows 2000, which includes descriptive statistics and Pearson-product moment correlations. The alpha was set at .05 ($p = .05$), and the confidence level was 95%. It was used to examine the hypotheses about possible correlations between executives' leadership styles and their practices of knowledge management, executive's leadership styles and their demographics, and executives' practices of knowledge management and their demographics. The reliability levels of the two instruments were examined using the Cronbach's alpha coefficient test.

Descriptive statistic tools offer information about the central tendency and variability of the data. Descriptive statistics were used to summarize the demographic data; this provided a common starting point for further analysis and indicating which tests were appropriate to explore next. These tools include frequency distribution tables and graphic representations. In addition, the researcher used Pearson-product moment correlation, *t*-test, Student-Newman-Keuls (S-N-K) test, Spearman rank correlation coefficient, regression, one-way analysis of variance (ANOVA), and two-way ANOVAs (inferential statistic tools).

The Pearson product-moment correlation was utilized in primary hypothesis and sub-hypotheses one and two to test whether the executives' leadership styles (selling, telling, participating, and delegating), their practices of knowledge management processes (externalization, combination, socialization and internalization), and their demographics are or are not significantly correlated. Pearson product-moment correlation is used to analyze the relationship between two continuous and interval variables (Huang, 2000).

The *t* test was used to examine the difference between executives' demographics and different types of leadership styles used in the companies. The one-way ANOVA was used to test the difference between different demographic variables and different leadership styles. In addition, the researcher used the Student-Newman-Keuls (S-N-K) test, a post-hoc test that examines which means are different from the others whenever a significant result is shown among more than three groups in an independent variable (Carver & Nash, 2000).

Researchers use the two-way ANOVA to test the differences between three

variables or more at the same time and, as a result, are able to track the ways in which dependent variables interact (Wang, 2002). In this research, the two-way ANOVA enabled the researcher to identify the demographic variables and leadership styles that intersect with and influence top managers' use of knowledge management.

Protection of Human Subjects

Before implementing the research, the researcher obtained approval from the University of the Incarnate Word's Institutional Review Board (IRB). Participants signed a consent form (see Appendix B) and received a cover letter, which explained the purpose, benefits, and risks, if any, of this study. Each participant was guaranteed complete anonymity in order to protect his or her privacy. Only the researcher could access the data and codes of the survey instruments.

The researcher did not write down the respondent's names or the companies' names, making up names for participants, to protect confidentiality. No other identifying information was recorded, and participants were not identified from the demographic data. Furthermore, instead of individual results, only group results were reported when publishing, and individual data was not shown.

Summary

In this chapter research design, participants, instrumentation, data collection, data analysis, protection of human subjects, and summary were provided. The research hypotheses focused on the relationship between business executives' leadership style and their practices of knowledge management, and their demographic characteristics. This was a correlational research conducted using a quantitative approach. Participants included the executives of the 151 Taiwanese companies that established high-tech

industries in Kun-Shan, Mainland China. The researcher collected data using the Leader

Behavior Description Questionnaire–Form XII (LBDQ–XII) and the State of Knowledge

Management: An Assessment Questionnaire, both of which have high reliability and

validity. Another questionnaire was used to collect the executives' demographic

information. Descriptive statistical and inferential techniques including Spearman rank

correlation coefficient and Chi-square test were conducted by using SPSS for statistical

analysis.

Chapter 4: Results

Introduction

This research explored the possible relationship between leadership styles and

knowledge management practices of executives' in 151 high-tech Taiwanese companies

in Mainland China using three variables: executives' leadership, executives' knowledge

management practices, and executives' demographic characteristics.
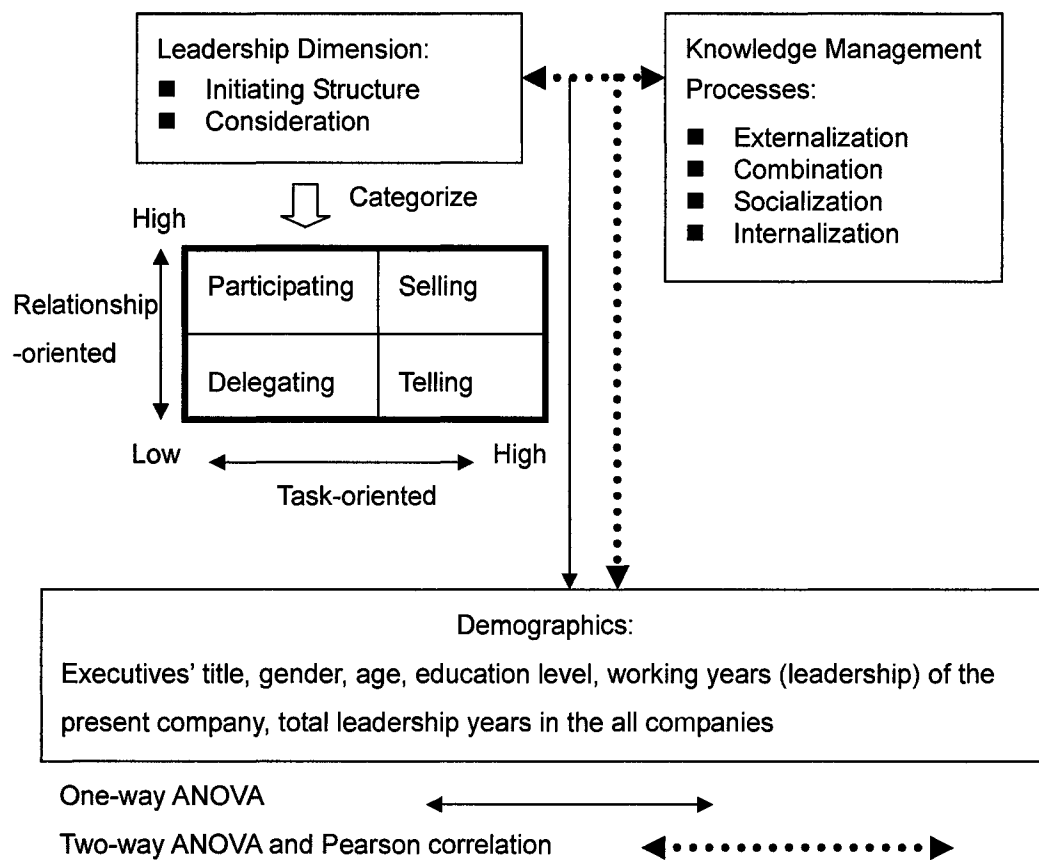
Figure 6. Data Analysis Method

The following null hypotheses guided this study, and the correlative answers to them are presented in this section.

Primary Hypothesis

In order to explore the relationship between executives' leadership styles and their practices of knowledge management in Taiwanese investment companies in Mainland China, the primary null hypothesis was:

Executives' leadership styles and their practices of knowledge management are not significantly correlated.

Under this primary hypothesis, four sub-hypotheses were also assessed.

Sub-Hypothesis One

Demographic variables (gender, age, level of education, executive position in the company, years with the present company, years of leadership with the present company, and years of total leadership with all companies) and executives' leadership styles are not significantly correlated.

Sub-Hypothesis Two

Demographic variables (gender, age, level of education, executive position in the company, years with the present company, years of leadership with the present company, and years of total leadership with all companies) and executives' practices of knowledge management are not significantly correlated.

Sub-Hypothesis Three

There are no significant differences among the demographic categories of executives, such as gender, age, level of education, executive position in the company, years with the present company, years of leadership with the present company, and years

of total leadership with all companies.

Sub-Hypothesis Four

There is no significant difference in executives' leadership styles and different dimensions of demographic categories based upon different dimensions of practicing knowledge management in the company.

In this research, the results were calculated using quantitative descriptive and inferential statistical analysis, including means, frequencies, percentages, standard deviations, Cronbach alpha coefficients, Guttman Split-half (Spearman-Brown prophecy formula), t-test, ANOVA, Pearson product-moment, and regression computed by SPSS 12.0 for Windows with a significance level of .050.

In addition, this chapter presents the reliability of the survey instruments and analysis of executives' demographic characteristics, the current conditions of executives' perceived leadership, and their practice of knowledge management.

Response Rate and Reliability

Data collection was conducted Sept. 16–Dec. 2, 2004. The survey instruments were distributed to 151 companies and an executive was selected in each company. However, executives at 12 companies transferred the questionnaire to their co-workers, who are also executives in their companies. Therefore, 163 questionnaires were distributed and 85 were returned for a total response rate of 52.15%; 78 valid surveys were returned for a valid response rate of 47.85%. Sixty-six executives did not respond for a non-response rate of 40.49%. In addition to the original 12 questionnaires that were regarded as missing, 7 surveys were invalid or had incomplete responses for a missing or invalid data rate of 11.66%.

Babbie (1990) said "…at least 50 percent was generally considered adequate for analysis and reporting, a response rate of at least 60 percent is considerate good, and a response rate of 70 percent or more is very good" (p. 182).

The results were separated into three sections: leadership style, knowledge management processes, and satisfaction with the knowledge available. The questionnaires used a 5-point Likert scale, with responses numbered from 1 to 5. The Cronbach alpha coefficient was used to determine if the results were reliable. The Cronbach alpha coefficients and the Guttman Split-Half method, which was supported with the Spearman-Brown prophecy formula, were used to test the reliability of the survey instruments employed in this research, as described in Table 6.

Table 6

Reliable Range of Cronbach Alpha Coefficient

Alpha coefficient range				Reliability
	α	$\leqq$	.30	Unreliable
.30	< α	$\leqq$	.40	New measure, acceptable
.40	< α	$\leqq$	.50	Slightly reliable
.50	< α	$\leqq$	.70	Reliable
.70	< α	$\leqq$	.90	Very reliable
.90	< α	$\leqq$		Strongly reliable

Note. From *Telephone Survey: Theories and methods* (p. 145), by T.X. Wu, 1984, Taipei: United Economics. Copyright by United Economics. Adapted with permission (see Appendix R).

Table 7 indicates that the Cronbach alpha coefficients were .8944 in the Leader Behavior Description Questionnaire, .8164 in knowledge management processes, and .8455 in satisfaction with the knowledge available. The coefficient of the overall instrument was .8412. After supported by the Spearman-Brown prophecy formula, the reliability coefficients ranged from .899 to .944 and are regarded as proven reliable.

Table 7

Cronbach Alpha Coefficients of the Survey Instruments

Survey Instruments	Cronbach α	Spearman-Brown Prophecy Formula
Leader Behavior Description Questionnaire	.8944	.9443
Knowledge Management Processes	.8164	.8989
Satisfaction with the Knowledge Available	.8455	.9163
Overall	.8412	.9138
Meaning of Cronbach Alpha Coefficients	Very Reliable	Strongly reliable

Note. N = 78

Situational Leadership Theory considers leadership along two dimensions: task

behavior (initiation of structure) and relationship behavior (consideration) (Hersey et al.,

2001). Hersey stated that these two dimensions produced four styles: telling, selling,

participating, and delegating, depending on the high-low levels of the two dimensions.

This study showed that the dimensions of consideration and initiating structure have a

reliability of 0.7148 and 0.8434, respectively, and are considered to be very reliable.

Knowledge management processes can be divided into four sections:

externalization, combination, socialization, and internalization. Table 8 indicates the

Guttman Split-half coefficients of these sections were .8266, .7322, .3921, and .6016,

respectively. With support by the Spearman-Brown prophecy formula, these coefficients

were .9051, .8454, .5633, and .7512, respectively. All the reliability coefficients

exceeded .55 and are regarded as reliable.

Table 8

Guttman Split-Half Coefficients of Knowledge Management Processes

Survey Instruments	Dimensions	Guttman Split-Half	Spearman-Brown Prophecy Formula
The State of Knowledge	Externalization	.8266	.9051
Management:	Combination	.7322	.8454
An Assessment Questionnaire.	Socialization	.3921	.5633
	Internalization	.6016	.7512
Meaning of Cronbach Alpha Coefficients		Acceptable and over	Reliable and over

Note. N = 78

Analysis of Respondents

Descriptive statistics on the business executives' demographic information included: working title in the company, gender, age, education level, years with the present company, years of leadership with the present company, and years of total leadership with all companies.

Of the 78 respondents, 63 were men and 15 were women. The large number of men participating in the survey reflected the relatively high number of male executives. The descriptive statistics related to gender are presented in Table 9.

Table 9

Respondents' Gender

	Frequency	%	Valid%	Cumulative%
Male	63	80.8	80.8	80.8
Female	15	19.2	19.2	100.0
Total	78	100.0	100.0	

Note. *N* = 78

Of the 78 respondents, 48 were chief department managers (division or function or any other officer who performs policy-making functions) and 30 were CEOs (board

chairman, vice chairman, president, and vice president). The descriptive statistics related

to executives' title are presented in Table 10.

Table 10

Respondents' Title

	Frequency	%	Valid%	Cumulative%
Chief Department Manager	48	61.5	61.5	61.5
CEO	30	38.5	38.5	100.0
Total	78	100.0	100.0	

Note. N = 78

Of the 78 respondents, university represented the greatest educational level. The

largest group of executives was university educated (55.1%). The descriptive statistics

related to educational level are presented in Table 11.

Table 11

Respondents' Educational Level

	Frequency	%	Valid%	Cumulative%
College and Under	18	23.1	23.1	23.1
University	43	55.1	55.1	78.2
Master's degree & Ph. D.	17	21.8	21.8	100.0
Total	78	100.0	100.0	

Note. *N* = 78

The age of respondents ranged from 29 to 62; there were only seven people

younger than 35. The majority of executives' ages were in the 40–49 year age range.

Table 12 shows that there was only one (1.3%) executive under age 30 and only one

executive older than age 60.

Table 12

Respondents' Age

	Frequency	%	Valid%	Cumulative%
20–29 years	1	1.3	1.3	1.3
30–39 years	20	25.6	25.6	26.9
40–49 years	35	44.9	44.9	71.8
50–59 years	21	26.9	26.9	98.7
60 years or older	1	1.3	1.3	100.0
Total	78	100.0	100.0	

Note. N = 78

Most of the executives had worked no longer than 10 years in their current companies, and there were only eight who had worked more than 15 years in their current companies. Table 13 indicates the highest frequency in length of employment occurring at 1–5 year intervals.

Table 13

Respondents' Length of Employment

	Frequency	%	Valid%	Cumulative%
1–5 years	34	43.6	43.6	43.6
6–10 years	23	29.5	29.5	73.1
11–15 years	13	16.7	16.7	89.7
15 years or more	8	10.3	10.3	100.0
Total	78	100.0	100.0	

Note. N = 78

Table 14 indicates the highest frequency in length of leadership in the current company occurred at the 3–5 year interval. Only one executive had led the company for more than 15 years.

Table 14

Respondents' Length of Leadership in the Company

	Frequency	%	Valid%	Cumulative%
1–2 years	13	16.7	16.7	16.7
3–5 years	29	37.2	37.2	53.8
6–10 years	21	26.9	26.9	80.8
11–15 years	14	17.9	17.9	98.7
15 years or more	1	1.3	1.3	100.0
Total	78	100.0	100.0	

Note. N = 78

Table 15 indicates that most executives had leadership experience in all companies for 6 years or longer. Only seven executives had 5 or fewer years leadership experience.

Table 15

Respondents' Length of Leadership in all Companies

	Frequency	%	Valid%	Cumulative%
1–5 years	7	9.0	9.0	9.0
6–10 years	25	32.1	32.1	41.0
11–15 years	23	29.5	29.5	70.5
15 years or more	23	29.5	29.5	100.0
Total	78	100.0	100.0	

Note. N = 78

The mean score and standard deviation of executives' age were 44.64 and 7.52, respectively. The mean score and standard deviation of executives' working in the present company were 8.18 and 6.16, respectively, and the mean score and standard deviation of executives' years of leadership at the institution were 6.50 and 4.40, respectively. Finally, the mean score and standard deviation of executives' total years of leadership management experience were 13.12 and 6.56, respectively. The descriptive statistics are presented in Table 16.

Table 16

Executives' Demographic Information in the Survey

Demographics	Minimum	Maximum	Mean	Standard Deviation
Age	29	62	44.64	7.52
Years working in the company	1	30	8.18	6.16
Years of leadership at the institution	1	20	6.50	4.40
Total years leadership experience	1	31	13.12	6.56

Note. N = 78

Executives' Leadership Styles

Data of executives' leadership were collected using the Leader Behavior

Descriptive Questionnaire Form XII, which was divided into the consideration and

initiating structure dimensions. Following the methodology of Wang (2001), leadership

styles were created by separating both dimensions at the mean into high and low levels.

The four styles are: telling (consideration score lower than the mean, initiating structure

score higher than the mean), selling (consideration score higher than the mean, initiating

structure score higher than the mean), participating (consideration score higher than the

mean, initiating structure lower than the mean), and delegating (consideration score lower

than the mean, initiating structure lower than the mean).

Table 17 indicates the frequency and percentage of executives' four leadership

styles as measured by combinations of the consideration and initiating structure

dimensions.

Table 17

Executives' Four Leadership Styles

Consideration	Initiating Structure	Frequency	%	Valid%	Cumulative%
Low	High	12	15.4	15.4	15.4
High	High	22	28.2	28.2	43.6
High	Low	15	19.2	19.2	62.8
Low	Low	29	37.2	37.2	100.0

Note. N = 78

As indicated in Table 18, executives identified as having high consideration and high initiating structure were the most satisfied with the knowledge available in their organization. Moreover, this leadership style represented the group who practiced knowledge management in the organization the most. In addition, executives with a high consideration and high initiating structure leadership style were shown to slightly prefer practicing knowledge management over those with a low consideration and high initiating structure leadership style.

Table 18

Mean Scores of Executives' Practices on Their Leadership Style

Executives' Leadership Style		Dimension of Executives' Practices of Knowledge Management					
Consideration	Initiating Structure	Externali-zation	Combi-nation	Sociali-zation	Internali-zation	Total KM	Satisfaction with the Knowledge Available
Low	High	23.83	15.17	14.25	17.00	70.25	30.17
High	High	24.55	15.59	14.32	16.14	70.59	32.45
High	Low	22.53	14.40	13.60	15.33	65.87	30.80
Low	Low	20.86	13.10	13.93	14.52	62.41	29.41

Note. N = 78

Executives' Knowledge Management Practices

Data of executives' knowledge management practices were collected using The

State of Knowledge Management. Section 1: Knowledge Management Processes was divided into four dimensions, externalization (questions 7, 17, 18, 19, 23, 24, and 25), combination (questions 13, 20, 21, and 22), socialization (questions 2, 3, 4, and 6), and internalization (questions 5, 10, 11, and 12). Table 19 presents the descriptive data for the subscales and overall knowledge management of the survey instrument.

Table 19

Mean Scores and Standard Deviation in Knowledge Management

Dimensions	Mean	Standard Deviation
Externalization	22.68	5.40
Combination	14.37	2.62
Socialization	14.03	1.80
Internalization	15.51	2.05
Total Knowledge Management Processes	66.59	9.06
Satisfaction with the Knowledge Available	30.65	3.88

Note. N = 78

Testing of Hypothesis

The primary hypothesis and sub-hypotheses required the examination of the relationship between executives' leadership styles and their practices of knowledge management; between executives' leadership styles and different dimensions of knowledge management processes including externalization, combination, socialization and internalization; between executives' leadership style and their demographics; and between executives' practices of knowledge management and their demographics. The hypotheses were first tested using the Pearson product-moment correlation coefficient to determine whether two factors had a significant positive or negative relationship. When the p value is significant, it is less than .05 ($p < .05$).

Primary Hypothesis: There Is No Relationship Between Leadership Styles and Practices of Knowledge Management

Table 20 shows the Pearson correlation coefficient between executives' leadership dimensions and styles and their practices of knowledge management. The correlation coefficients between the variables range from $-.091$ to $.699$, and some p values were less than $.05$. There were statistically significant positive relationships between consideration and total knowledge management processes ($r = .278$). Statistically significant positive relationships also were found between consideration and several other variables: satisfaction with knowledge available ($r = .417$), externalization ($r = .237$), combination ($r = .228$), and internalization ($r = .250$).

Furthermore, there were statistically significant positive relationships between initiating structure and the following variables: externalization ($r = .330$), combination ($r = .369$), internalization ($r = .469$), total knowledge management processes ($r = .451$), and satisfaction with knowledge available ($r = .284$). Therefore, there was a significant positive relationship between leadership dimensions and knowledge management.

Furthermore, Table 20 also indicates that the telling leadership style had a positive relationship with the externalization process of knowledge management ($r = .699$) and total knowledge management processes ($r = .615$). There was a significant positive relationship between the delegating leadership style and internalization process of knowledge management ($r = .477$). Therefore, the primary hypothesis was rejected.

Table 20

Pearson Correlation between Leadership Styles and Practices of Knowledge Management

KM LS	Externali- zation	Combination	Sociali- zation	Internali- zation	Total KM Processes	Satisfaction with KA
Consideration	.237*	.228*	.074	.250*	.278**	.417**
Initiating Structure	.330**	.369**	.208	.469**	.451**	.284**
Total Leadership	.347**	.365**	.172	.439**	.446**	.429**
Telling	.699*	.323	.278	.276	.615*	.360
Selling	.223	-.044	-.091	.266	.167	.212
Participating	.356	.232	.251	.058	.318	.446
Delegating	.060	-.044	.334	.477**	.214	.331

Note. KM = Knowledge Management, KA= Knowledge Available. $N = 78$. $*p<.05$, $**p<.01$.

Figure 7 shows that there is a positive correlation between total leadership style and total knowledge management practice.
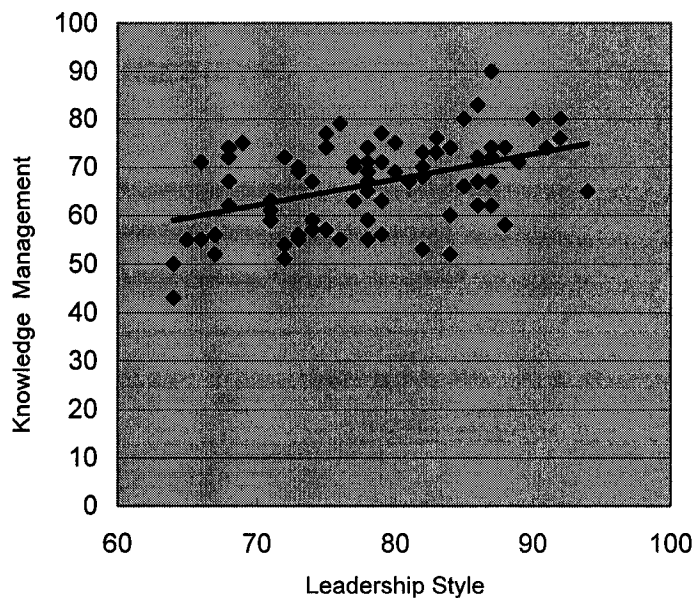

Figure 7. Scatter Map of Leadership Style and Knowledge Management

Moreover, in a simple liner regression analysis, the following result was obtained:

Total KM = f(Total Lead)

Total KM = $\beta_0 + \beta_1$ Total Lead + Error

Total KM = 25.288 + 0.527 Total Lead

$$(2.646)^{**} \ (4.342)^{**}$$

$F = 18.855$

$df = n - k = 78 - 2 = 76$

$\alpha = .05$, t-value = 1.9901

$\alpha = .01$, t-value = 2.6387

Note. KM = Knowledge Management. Lead = leadership style

The numbers in parenthesis are t-tests and (**) represents significance at 1% level. The estimated simple linear regression between total knowledge management and total leadership style indicates that there is a statistically significant and positive relationship between the variables under investigation. If all other things are constant, one unit increase in total leadership style introduces .527 unit increases in total knowledge management. Therefore, there was a significant regression between executives' leadership style and their practices of knowledge management.

Sub-Hypothesis One: There Is No Relationship Between Executives' Leadership Styles and Their Demographic Categories

As presented in Table 21, coefficients between the variables range from −.272 to .875. They show that variables were positively or negatively correlated and that some p values were at the level of .05 or less. Both consideration and initiating structure were strongly and positively correlated with executives' title ($r = .375$, $r = .265$, respectively)

and negatively correlated with education al levels ($r = -.272$, $r = -.243$, respectively).

Consideration and total years of leadership management experience were positively correlated ($r = .324$). Initiating structure was strongly related to years of working in the company ($r = .331$) and years of leadership at the institution ($r = .309$). Consideration was positively related to years of working in the company ($r = .271$) and years of leadership at the institution ($r = .271$). Therefore, the leadership dimensions had significant positive relationships with executives' title, educational level, years of working in the current company, and years of leadership in the company. Leadership dimensions also had positive relationships with executives' years of leadership in all companies.

Moreover, the telling leadership style and executives' title were significantly correlated ($r = .875$). The selling leadership style was positively correlated with executives' age, title, years of working in the company, and total years of leadership management experience. The delegating leadership style and educational level were strongly correlated. Therefore, the sub-hypothesis one was rejected.

Table 21

Pearson Correlation between the Executives' Leadership Styles and Their Demographic Categories

	Gender	Age	Title	EL	YW	YL	TY
Consideration	-.064	.193	.375**	-.272*	.271*	.271*	.324**
Initiating Structure	.146	.022	.265**	-.243*	.331**	.309**	.146
Total Leadership	.050	.132	.392**	-.316**	.368**	.355**	.288*
Telling	-.368	-.526	.875**	.340	-.256	-.020	.242
Selling	-.214	.459*	.439*	-.416	.465*	.404	.604*
Participating	0	.236	.146	-.454	.233	.290	.278
Delegating	.208	.012	-.042	-.509**	.029	-.027	.105

Note. EL= Education Level. YW= Years of Working in the Company. YL= Years of Leadership at the Institution. TY= Total Years of Seeing Leadership Management Experience. $N = 78$. *$p < .05$, **$p < .01$.

Sub-Hypothesis Two. There Is No Relationship Between Executives' Practices of

Knowledge Management Processes and Their Demographic Categories

As presented in Table 22, coefficients between the variables range from −.156

to .283. Executives' satisfaction with knowledge available was positively related with

their age (r = .237), years of working in the company (r = .277), years of leadership at the

institution (r = .275), and total years of leadership management experience (r = .283).

However, there was no relationship between total knowledge management processes and

executives' demographics. Therefore, the sub-hypothesis two was not rejected.

Table 22

Pearson Correlation Between the Executives' Practices of Knowledge Management
and Their Demographic Categories

	Gender	Age	Title	EL	YW	YL	TY
Externalization	−.098	.155	.214	−.126	.167	.209	.253*
Combination	.030	.029	.110	−.041	−.015	.061	.103
Socialization	.084	.027	.048	−.107	.007	−.007	−.020
Internalization	.197	.078	.137	−.211	.053	.019	.137
Total KMP	.011	.124	.200	−.156	.109	.148	.207
Satisfaction with KA	.145	.237*	.207	−.151	.277*	.275*	.283*

Note. EL= Education Level. YW= Years of Working in the Company. YL= Years of Leadership at the
Institution. TY= Total years of Seeing Leadership Management Experience. KMP= Knowledge
Management Processes. KA= Knowledge Available. N= 78. *p < .05, **p < .01.

Sub-Hypothesis Three: There Are No Significant Differences Among the Executives'

Leadership Styles and Their Demographic Categories.

This hypothesis was tested using the t-test and one-way analysis of variance

(ANOVA) statistical methods. The t-test was used to determine if significant differences

exist in executives' leadership style by gender and title. The one-way ANOVA was

performed to determine if any significant differences exist in the executives' leadership styles among age, level of education, years with the present company, years of leadership with the present company, and years of total leadership with all companies.

According to Table 23, there were no women in the participating leadership style group and there were no significant differences existing in the telling ($t = .537, p > .05$), selling ($t = .980, p > .05$), and delegating ($t = 1.103, p > .05$) leadership styles by gender. Because the p values were greater than .05, these data provide substantial evidence that there were no significant differences between the executives' leadership styles and gender.

Table 23

T-test for Executives' Leadership Styles and Gender

Dimensions	Gender	Number	Mean	SD	t	p
Telling	Male	9	80.0000	2.9580	.537	.603
	Female	3	79.0000	2.0000		
Selling	Male	16	25.0000	3.9328	.980	.339
	Female	6	23.3333	6.6232		
Participating	Male	15	—	—	—	—
	Female	0				
Delegating	Male	23	70.3478	3.9498	1.103	.280
	Female	6	72.3333	3.8297		

Note. N = 78

As Table 24 shows, there were no significant differences existing in the telling ($t = .59, p > .05$), participating ($t = .533, p > .05$), and delegating ($t = .220, p > .05$) leadership styles by executives' title. However, the selling leadership style showed significant differences according to executives' title ($t = 2.182, p < .05$).

Table 24

T-test for Executives' Leadership Styles and Title

Dimensions	Title	Number	Mean	SD	t	p
Telling	CEO	3	79.6667	2.0817	.59	.954
	D-Manager	9	79.7778	2.9907		
Selling	CEO	14	88.2143	3.4234	2.182	.041*
	D-Manager	8	85.2500	2.2520		
Participating	CEO	8	79.7500	6.7135	.533	.603
	D-Manager	7	78.2857	2.9277		
Delegating	CEO	5	70.4000	4.7749	.220	.828
	D-Manager	24	70.8333	3.8636		

Note. N = 78. D-Manager = Department Manager

Table 25 shows there were no significant differences existing in the telling

$(F = .746, p > .05)$, selling $(F = 2.177, p > .05)$ and participating $(F = 1.779, p > .05)$

leadership styles by educational level. Only delegating leadership style had significant

differences according to executives' educational level $(F = 4.559, p > .05)$.

Table 25

ANOVA for Executives' Leadership Styles on Educational Level

Dimensions		SS	df	MS	F	p
Telling	Between Groups	11.417	2	5.708	.746	.501
	Within Groups	68.833	9	7.648		
	Total	80.250	11			
Selling	Between Groups	43.360	2	21.680	2.177	.141
	Within Groups	189.231	19	9.960		
	Total	232.591	21			
Participating	Between Groups	85.733	2	42.867	1.779	.211
	Within Groups	289.200	12	24.100		
	Total	374.933	14			
Delegating	Between Groups	113.027	2	56.514	4.559	.020*
	Within Groups	322.283	26	12.396		
	Total	435.310	28			

Note. N= 78

Table 26 demonstrates that there were no significant differences among age with

respect to the telling (F = .239, p > .05), participating (F = .188, p > .05) and delegating

(F = .125, p > .05) leadership styles. Selling leadership style had significant differences

according to executives' age (F = 6.182, p < .05).

Table 26

ANOVA for Executives' Leadership Styles on Age Group

Dimensions		SS	df	MS	F	p
Telling	Between Groups	4.050	2	2.025	.239	.792
	Within Groups	76.200	9	8.467		
	Total	80.250	11			
Selling	Between Groups	91.691	2	45.845	6.182	.009*
	Within Groups	140.900	19	7.416		
	Total	232.591	21			
Participating	Between Groups	11.378	2	5.689	.188	.831
	Within Groups	363.556	12	30.296		
	Total	374.933	14			
Delegating	Between Groups	4.144	2	2.072	.125	.883
	Within Groups	431.167	26	16.583		
	Total	435.310	28			

Note. N= 78

Because all p values were greater than .05, this test shows that these data provide

substantial evidence that there were no significant differences among executives'

leadership styles and their years of working in the company (see Table 27).

Table 27

ANOVA for Executives' Leadership Styles on Years of Working in the Company Group

Dimensions		SS	df	MS	F	p
Telling	Between Groups	8.083	3	2.694	.299	.826
	Within Groups	72.167	8	9.021		
	Total	80.250	11			
Selling	Between Groups	47.058	3	15.686	1.522	.243
	Within Groups	185.533	18	10.307		
	Total	232.591	21			
Participating	Between Groups	40.133	3	13.378	.440	.729
	Within Groups	334.800	11	30.436		
	Total	374.933	14			
Delegating	Between Groups	11.158	3	3.719	.219	.882
	Within Groups	424.153	25	16.966		
	Total	435.310	28			

Note. N = 78

As Table 28 shows, there were significant differences existing among years of leadership in the company with respect to the telling ($F = 4.084, p = .05$) and selling leadership styles ($F = 3.124, p < .05$). There were no significant differences existing between years of leadership in the company and the participating ($F = 1.434, p > .05$) and delegating ($F = .125, p > .05$) leadership styles.

Table 28

ANOVA for Executives' Leadership Styles on Years of Leadership in the Company

Dimensions		SS	df	MS	F	p
Telling	Between Groups	48.550	3	16.183	4.084	.050*
	Within Groups	31.700	8	3.963		
	Total	80.250	11			
Selling	Between Groups	98.543	4	24.636	3.124	.043*
	Within Groups	134.048	17	7.885		
	Total	232.591	21			
Participating	Between Groups	105.400	3	35.133	1.434	.286
	Within Groups	269.533	11	24.503		
	Total	374.933	14	5.580		
Delegating	Between Groups	16.740	3	5.580	.333	.801
	Within Groups	418.571	25	16.743		
	Total	435.310	28			

Note. N = 78

Table 29 presents the significant differences of telling and selling leadership styles on years of leadership in all companies ($F = 4.082, p < .05$). The p values of participating and delegating leadership styles were all greater than .05; therefore, there were no significant differences between these two leadership styles and years of leadership in all companies.

Table 29

ANOVA for Executives' Leadership Styles on Years of Leadership in All Companies

Dimensions		SS	df	MS	F	p
Telling	Between Groups	14.217	2	7.108	.969	.416
	Within Groups	66.033	9	7.337		
	Total	80.250	11			
Selling	Between Groups	94.167	3	31.380	4.082	.022*
	Within Groups	138.424	18	7.690		
	Total	232.591	21			
Participating	Between Groups	29.933	3	9.978	.318	.812
	Within Groups	345.000	11	31.364		
	Total	374.933	14			
Delegating	Between Groups	13.810	3	4.603	.273	.844
	Within Groups	421.500	25	16.860		
	Total	435.310	28			

Note. N = 78

Some significant differences were found between executives' leadership styles

and their demographic categories. Therefore, null hypothesis four was rejected. In

addition, the Student-Newman-Keuls (S-N-K) follow-up procedure was used when the

one-way ANOVA produced significant findings. The S-N-K analysis was performed to

determine which groups were significantly different by executives' leadership styles.

There was a significant difference among executives' telling leadership style and

years of leadership in the company. In this case, there was a significant finding in the

overall ANOVA, F = 4.084, p =.05 (see Table 29). Therefore, the S-N-K was used to

determine individual differences between each of the possible category comparisons for

years of leadership in the company.

The differences were between the executives' years of leadership category of 3–5

years (M = 84.0000) > 1–2 years (M = 78.0000) = 11–15 years (M = 78.5000) = 6–10

years (M = 79.6000).

There were significant differences among executives' selling leadership style according to their title, age, years of leadership in the company, and total years of leadership management experience.

Table 30

F Value and p-Value of Executives' Categories Under Selling Leadership Style

Leadership Style	Title	Age	Years of Leadership in the Company	Total Years of Leadership in All Companies
Selling	$t = 2.182$	$F = 6.182$	$F = 3.124$	$F = 4.082$
	$p < .05$	$p < .05$	$p < .05$	$p < .05$

Note. N = 78

The differences were between the executives' title category of CEO ($M = 88.2143$) > department manager ($M = 85.2500$) and the executives' age category of 50 years and older ($M = 90.0000$) > 30–39 years ($M = 86.8000$) = 40–49 years ($M = 85.3000$).

Additionally, the differences were between the executives' years of leadership in the company category of 6–10 years ($M = 84.5000$) < 3–5 years ($M = 86.1667$) < 1–2 years ($M = 88.0000$) < 11–15 years ($M = 89.5714$) = 15 years and more ($M = 90.0000$). Also, the differences were between the executives' total years of leadership in all companies category of 15 years and more ($M = 90.1429$) > 6–10 years ($M = 85.5000$) = 11–15 years ($M = 85.6000$) = 1–5 years ($M = 86.3333$).

There was a significant difference among executives' delegating leadership style according to their educational level. In this case, because the overall ANOVA showed that $F = 4.559, p < .05$ (see Table 25), the S-N-K was used to determine individual differences between each of the possible category comparisons for educational level. The differences were between the executives' educational level category of college or under ($M = 75.0000$) > university ($M = 71.0500$) = master's or doctorate ($M = 67.6667$).

Sub-Hypothesis Four: There Is No Significant Difference in Executives' Leadership Styles and Different Dimensions of Demographic Categories Based upon Different Dimensions of Practicing Knowledge Management in the Company

This hypothesis was tested using the two-way analysis of variance (ANOVA) statistic method. A two-way ANOVA was performed to determine if any significant differences exist in the executives' leadership styles (telling, selling, participating, and delegating) and their demographic categories (age, level of education, years with the present company, years of leadership with the present company, and years of total leadership with all companies) among their knowledge management practices (externalization, combination, socialization and, internalization) in the company.

As shown in Table 31, with combination knowledge management processes regarded as the dependent variable, the p values of gender and the combination knowledge management processes were not significant at $p = .920$. However, the p value of leadership styles and combination knowledge management processes were significant at $p = .009$. There were no significant differences existing in gender and leadership styles based on the combination knowledge management processes ($F = .237$, $p > .05$).

Table 31

Analysis of Two-Way ANOVA for Different Genders, Leadership Styles, and Combinational Knowledge Management Processes

Source	SS	df	MS	F	Sig.
Gender	.062	1	.062	.010	.920
Leadership Styles	76.764	3	25.588	4.145	.009*
Gender* Leadership Styles	2.925	2	1.463	.237	.790

Note. Computed using alpha = .05

The S-N-K was used to determine individual differences between leadership styles and the combination knowledge management processes. The differences were between the executives' leadership styles of telling ($M = 15.1667$) = selling ($M = 15.5909$) = participating ($M = 14.4000$) > delegating ($M = 13.1034$).

As Table 32 shows, with internalization knowledge management processes as the dependent variable, the p values of gender and the internalization of knowledge management processes were not significant at $p = .218$. However, the p value of leadership styles and the internalization knowledge management processes were significant at $p = .034$. There were no significant differences in gender and leadership styles based on the internalization knowledge management processes ($F = .617, p > .05$).

Table 32

Analysis of Two-Way ANOVA for Different Genders, Leadership Styles, and Internalization Knowledge Management Processes

Source	SS	df	MS	F	Sig.
Gender	5.370	1	5.370	1.544	.218
Leadership Styles	31.817	3	10.606	3.050	.034*
Gender* Leadership Styles	3.383	2	1.692	.487	.617

Note. Computed using alpha = .05

The S-N-K was used to determine individual differences between leadership styles and the internalization knowledge management processes. The differences were between the executives' leadership styles of telling ($M = 17.0000$) > selling ($M = 16.1364$) = participating ($M = 15.3333$) > delegating ($M = 14.5172$).

As Table 33 shows, with combination knowledge management processes as the dependent variable, the p values of title and combination knowledge management processes were not significant at $p = .962$. However, the p value of leadership styles and

the combination knowledge management processes were significant at $p = .014$. There

were no significant differences in executive's title and their leadership styles based on the

combination knowledge management processes ($F = .478$, $p > .05$).

Table 33

Analysis of Two-Way ANOVA for Different Titles, Leadership Styles, and Combination Knowledge Management Processes

Source	SS	df	MS	F	Sig.
Title	.014	1	.014	.002	.962
Leadership Styles	70.244	3	23.415	3.794	.014*
Title* Leadership Styles	8.859	3	2.953	.478	.698

Note. Computed using alpha = .05

The S-N-K was used to determine individual differences between leadership

styles and the combination knowledge management processes. The differences were

between the executives' leadership styles of telling ($M = 15.1667$) = selling ($M = 15.5909$)

= participating ($M = 14.4000$) > delegating ($M = 13.1034$).

As presented in Table 34, with combination knowledge management processes as

the dependent variable, the p values of age and the combination knowledge management

processes were not significant at $p = .467$. However, the p value of leadership styles and

the combination knowledge management processes were significant at $p = .009$. There

were no significant differences in executive's age and their leadership styles based on the

combination knowledge management processes ($F = .705$, $p > .05$).

Table 34

Analysis of Two-Way ANOVA for Different Ages, Leadership Styles, and Combination Knowledge Management Processes

Source	SS	df	MS	F	Sig.
Age	9.355	2	4.677	.770	.467
Leadership Styles	75.829	3	25.276	4.163	.009*
Age * Leadership Styles	25.683	6	4.280	.705	.647

Note. Computed using alpha = .05

The S-N-K was used to determine individual differences between leadership styles and the combination knowledge management processes. The differences were between the executives' leadership styles of telling ($M = 15.1667$) = selling ($M = 15.5909$) = participating ($M = 14.4000$) > delegating ($M = 13.1034$).

As presented in Table 35, with internalization knowledge management processes as the dependent variable, the p values of age and the internalization knowledge management processes were not significant at $p = .789$. However, the p value of leadership styles and the internalization knowledge management processes were significant at $p = .001$. There were no significant differences in executive's age and their leadership styles based on the internalization knowledge management processes ($F = 1.773, p > .05$).

Table 35

Analysis of Two-Way ANOVA for Different Ages, Leadership Styles, and Internalization Knowledge Management Processes

Source	SS	df	MS	F	Sig.
Age	1.644	2	.822	.238	.789
Leadership Styles	67.254	3	22.418	6.493	.001*
Age * Leadership Styles	27.703	6	4.617	1.337	.253

Note. Computed using alpha = .05

The S-N-K was used to determine individual differences between leadership styles and the internalization knowledge management processes. The differences were between the executives' leadership styles of telling ($M = 17.0000$) > selling ($M = 16.1364$) = participating ($M = 15.3333$) > delegating ($M = 14.5172$).

As presented in Table 36, with combination knowledge management processes as the dependent variable, the p values of length of employment and the internalization knowledge management processes were not significant at $p = .070$. However, the p value of leadership styles and the combination knowledge management processes were significant at $p = .001$. There were no significant differences in executive's length of employment and their leadership styles based on the combination knowledge management processes ($F = 1.488, p > .05$).

Table 36

Analysis of Two-Way ANOVA for Different Length of Employment, Leadership Styles, and Combination Knowledge Management Processes

Source	SS	df	MS	F	Sig.
Length of Employment	41.162	3	13.721	2.466	.070
Leadership Styles	108.113	3	36.038	6.478	.001*
Length of Employment * Leadership Styles	74.518	9	8.280	1.488	.172

Note. Computed using alpha = .05

The S-N-K was used to determine individual differences between leadership styles and the combination knowledge management processes. The differences were between the executives' leadership styles of telling ($M = 15.1667$) = selling ($M = 15.5909$) = participating ($M = 14.4000$) > delegating ($M = 13.1034$).

As presented in Table 37, with combination knowledge management processes as the dependent variable, the p values of years of leadership in the company and the

combination knowledge management processes were not significant at $p = .424$. However,

the p value of leadership styles and the combination knowledge management processes

were significant at $p = .017$. There were no significant differences in executive's years of

leadership in the company and their leadership styles based on the combination

knowledge management processes ($F = .310$, $p > .05$).

Table 37

Analysis of Two-Way ANOVA for Different Years of Leadership in the Company,

Leadership Styles, and Combination Knowledge Management Processes

Source	SS	df	MS	F	Sig.
Years of Leadership in the Company	24.657	4	6.164	.983	.424
Leadership Styles	68.547	3	22.849	3.643	.017*
Years of Leadership in the Company * Leadership Styles	17.478	9	1.942	.310	.969

Note. Computed using alpha = .05

The S-N-K was used to determine individual differences between leadership

styles and the combination knowledge management processes. The differences were

between the executives' leadership styles of telling ($M = 15.1667$) = selling ($M = 15.5909$)

= participating ($M = 14.4000$) > delegating ($M = 13.1034$).

As presented in Table 38, with internalization knowledge management processes

as the dependent variable, the p values of years of leadership in the company and the

internalization knowledge management processes were not significant at $p = .702$.

However, the p value of leadership styles and the internalization knowledge management

processes were significant at $p = .012$. There were no significant differences in

executive's years of leadership in the company and their leadership styles based on the

internalization knowledge management processes ($F = 1.109$, $p > .05$).

Table 38

Analysis of Two-Way ANOVA for Different Years of Leadership in the Company,

Leadership Styles, and Internalization Knowledge Management Processes

Source	SS	df	MS	F	Sig.
Years of Leadership in the Company	7.817	4	1.954	.547	.702
Leadership Styles	42.498	3	14.166	3.966	.012*
Years of Leadership in the Company * Leadership Styles	35.638	9	3.960	1.109	.370

Note. Computed using alpha = .05

The S-N-K was used to determine individual differences between leadership styles and the internalization knowledge management processes. The differences were between the executives' leadership styles of telling ($M = 17.0000$) > selling ($M = 16.1364$) = participating ($M = 15.3333$) > delegating ($M = 14.5172$).

As presented in Table 39, with externalization knowledge management processes as the dependent variable, the p values of years of leadership in all companies and the externalization knowledge management processes were significant at $p = .037$. However, the p value of leadership styles and the externalization knowledge management processes were not significant at $p = .142$. There were no significant differences in executive's years of leadership in all companies and their leadership styles based on the externalization knowledge management processes ($F = .666$, $p > .05$).

Table 39

Analysis of Two-Way ANOVA for Different Years of Leadership in All Companies, Leadership Styles, and Externalization Knowledge Management Processes

Source	SS	df	MS	F	Sig.
Years of Leadership in All Companies	248.326	3	82.775	3.002	.037*
Leadership Styles	155.653	3	51.884	1.882	.142
Years of Leadership in All Companies * Leadership Styles	146.991	8	18.374	.666	.719

Note. Computed using alpha = .05

The S-N-K was used to determine individual differences between years of leadership in all companies and the combination knowledge management processes. The differences were between the executives' years of leadership in all companies of 15 years and more ($M = 24.6522$) > 1–5 years ($M = 19.4286$) = 11–15 years ($M = 21.9130$) = 6–10 years ($M = 24.6522$).

As presented in Table 40, with combination knowledge management processes as the dependent variable, the p values of years of leadership in all companies and the combination knowledge management processes were not significant at $p = .723$. However, the p value of leadership styles and the combination knowledge management processes were significant at $p = .012$. There were no significant differences existing in executive's years of leadership in all companies and their leadership styles based on the combination knowledge management processes ($F = .463$, $p5$). T

Table 40

Analysis of Two-Way ANOVA for Different Years of Leadership in All Companies, Leadership Styles, and Combination Knowledge Management Processes

Source	SS	df	MS	F	Sig.
Years of Leadership in All Companies	8.481	3	2.827	.443	.723
Leadership Styles	75.535	3	25.178	3.944	.012*
Years of Leadership in All Companies * Leadership Styles	23.628	8	2.954	.463	.878

Note. Computed using alpha = .05

The S-N-K was used to determine individual differences between leadership styles and the combination knowledge management processes. The differences were between the executives' leadership styles of telling (M = 15.1667) = selling (M = 15.5909) = participating (M = 14.4000) > delegating (M = 13.1034).

As presented in Table 41, with internalization knowledge management processes as the dependent variable, the p values of years of leadership in all companies and the internalization knowledge management processes were not significant at p = .079. However, the p value of leadership styles and the internalization knowledge management processes are significant at p = .006. There were no significant differences in executive's years of leadership in all companies and their leadership styles based on the internalization knowledge management processes (F = 1.819, p >.05).

Table 41

Analysis of Two-Way ANOVA for Different Years of Leadership in All Companies, Leadership Styles, and Internalization Knowledge Management Processes

Source	SS	df	MS	F	Sig.
Years of Leadership in All Companies	22.780	3	7.593	2.364	.079
Leadership Styles	44.479	3	14.826	4.616	.006*
Years of Leadership in All Companies * Leadership Styles	46.744	8	5.843	1.819	.090

Note. Computed using alpha = .05

The S-N-K was used to determine individual differences between leadership styles and the internalization knowledge management processes. The differences were between the executives' leadership styles of telling ($M = 17.0000$) > selling ($M = 16.1364$) = participating ($M = 15.3333$) > delegating ($M = 14.5172$).

Summary

This research explored the possible relationship between executives' leadership styles, their practices of knowledge management, and their demographic data. Data were collected by distributing survey instruments to 163 executives; 78 of these were valid. Results were analyzed using the Statistical Package for Social Science (SPSS) edition 12.0 for Windows 2000, which includes descriptive and inferential statistical methods of analysis.

As Table 7 shows, the Cronbach alpha coefficients of the survey instruments all were greater than .80, showing that the instruments were highly reliable. The descriptive analyses of the executives' demographic variables were presented in Tables 9–15.

The primary hypothesis and sub-hypotheses one and two were tested using Pearson product-moment to examine the relationship between executives' leadership styles, their practices of knowledge management, and their demographic categories. Tables 20 and 21 showed that correlation coefficients between the variables ranged from .237 to .615 and presented those variables were correlated. The primary hypothesis and sub-hypothesis one were rejected. However, sub-hypothesis two was not rejected.

Sub-hypothesis three assessed the differences between executives' leadership styles and their demographic categories, and was tested by one-way ANOVA. The results, presented in Tables 23–29, showed that some demographic category differences existed

in different leadership styles. Hence, sub-hypothesis three was rejected. The results

follow:

1. There were no significant differences among executives' leadership styles according to their gender and years of working in the company.

2. There was a significant difference among executives' telling leadership styles according to years of leadership in the company.

3. There were significant differences among executives' selling leadership styles according to their title, age, years of leadership in the company, and total years of seeing leadership management experience.

4. There was a significant difference among executives' delegating leadership styles according to their educational level.

Two-way ANOVA was used to test the differences between executives' leadership styles and their demographic categories based on their knowledge management practices in sub-hypothesis four. Results showed that there was no significant interaction of executives' leadership styles and their demographic categories based on their knowledge management practices. Also, there were no significant mean differences in executives' leadership styles and their demographic categories based on socialization knowledge management processes. However, there were significant mean differences in: (a) executives' years of leadership in all companies and externalization knowledge management processes; (b) executives' selling leadership styles and combination knowledge management processes; and (c) executives' telling leadership styles and internalization knowledge management processes. Therefore, sub-hypothesis four was rejected.

Chapter 5: Discussion, Conclusion and Recommendation

Introduction

This chapter briefly reviews the methodology, presents the important findings, and discusses these results in relation to other researchers' work. Furthermore, recommendations for further research are made based upon these comparisons with the findings.

This research investigated the possible relationship between Taiwanese executives' leadership styles and their practices of knowledge management in Mainland China. A quantitative approach was used in this research. The study participants were executives who work in Taiwanese companies in Mainland China. The Leader Behavior Descriptive Questionnaire–Form XII and the State of Knowledge Management: An Assessment Questionnaire were examined for reliability by using the Cronbach alpha. Both instruments were determined to be internally consistent and valid for this study.

The significant findings of this study were that the Taiwanese executives in the Kun-Shan area of Mainland China used the delegating leadership style most frequently, followed by the selling leadership style, then the participating style, and finally the telling style. The results show that most executives recognized their own leadership style as either low consideration and low initiating structure or high consideration and high initiating structure (see Table 17). Awareness of the former tended to relate to low use of knowledge management and low satisfaction with the knowledge available compared to other leadership styles. The latter was related to the high use of knowledge management and high satisfaction with the knowledge available (see Table 18).

Moreover, positive correlations were found between executives' leadership styles

and their practices of knowledge management and between executives' leadership styles and their demographics. Furthermore, significant differences were found between executives' leadership styles and different knowledge management processes and between executives' demographics and different knowledge management processes.

Discussion of the Results

Chinese Cultural Influences

Confucian ideology has been thoroughly discussed in Asian management literature. Xing (1995) and Bond and Hwang (1993) indicated that throughout the long history of the Chinese people, Confucian ideology has been firmly established as a system that governs nearly all aspects of Chinese life. They further proposed that thousands of years of a feudalistic system have dominated the Chinese view of themselves and the world. The three dominant cultural influences in modern Mainland China are "Neo-Confucianism," "Legalism," and the mixed rejection, adaptation, and modification of these two philosophies in the ever-changing Chinese Communist Party doctrine since 1949 (Littrell, 2002).

Chinese culture has obvious rules of behavior that are derived from Confucian teaching (Littrell, 2002). It can be argued that the values and prescriptions of these teachings are instilled in Chinese children, even if explicit reference is not made to Confucian texts. The rules of *guanxi* are prescribed by *lun*, as a set of Chinese feudal ethics that define the hierarchical relationships between the noble and the humble, the close and the distant, as well as the individual and the group. Specifically, the three cardinal guides (ruler guides subject, father guides son, and husband guides wife) and the five constant virtues (benevolence, righteousness, propriety, wisdom, and fidelity) work

as the traditional ethical codes that still prescribe the differentiations among role relationships.

Indeed, the idea of Confucianism guided Chinese for almost several thousands years. It encouraged people to open their minds and accept something new. In Taiwan, the close trade links between various businesses and the West has meant a cross-cultural exchange and has been a means for the spreading and acceptance of Western values in Taiwanese society. Taiwanese culture is based upon Confucian values so that some management concepts are different from those found in Western culture (Punnett, 1995). Different cultures may require different management styles, and Chinese values do affect some organizational behavior of Taiwanese leaders and their subordinates (Silverthorne & Wang, 2001). The identification of effective managers is a critical task facing all organizations, so any tools that can be identified and used to facilitate this process will greatly assist all organizations.

The Situation in Taiwan and Mainland China

Even though Taiwan and China are the two largest Chinese societies in the world, there are substantial political, economic, and social variations between them. For example, China's government and the party are still inextricably linked in a system of state socialism (Child, 1996). Moreover, Taiwan and China have different regional development histories, hold diverse social customs and systems, and are influenced to various extents by foreign cultures and powers, although they are both collectivist societies with Confucian traditional roots (Lu, Cooper, Kao, & Zhou, 2003).

Taiwan's accession to the World Trade Organization (WTO) holds great challenges, and this move needs to be seen as an opportunity to change rather than as

either an economic disaster or as an economic miracle. The WTO has indicated rising profitability in the service industry sector due to worldwide competition (Price, Pollock, & Shaoul, 1999). Many changes have already happened in Taiwan since deregulation. Deregulation has been a wake-up call for the Taiwanese government, businesses, and industry; they have had to rise to the challenges of competing in an international market by changing regulations and outdated business practices. Taiwan has transformed its autocratic one-party political system into a multi-party democracy (Chu, 2001). Its political parties are independent of social and economic institutions. Conversely, the politics in China influence economic activities.

Redding (1990) suggested that political ideology may not have taken roots in people's minds and been handed on to the succeeding generation as part of the Chinese culture. The socialist ideology is an aspect of the foregone political economy rather than an indigenous part of the culture. China is a socialist society undergoing transition toward a market economy. The transition is from a command economy to a market-based one. Although the economic scene changes almost daily in China, some features of the underlying economic structure and systems can be noted, which have important implications for observable organizational behaviors (Lu et al., 2003).

Chinese people in both Taiwan and China share the same traditional value of respect for age, authority, and hierarchy, but the cultural characteristics and hierarchical centralized command structure of China's economy under socialism mutually reinforce each other. Taiwan is a new democracy continuing its rapid industrialization; it is economically more Americanized. A recent study using Hofstede's value scheme found greater power distance in China than in Taiwan (Cheng & Chow, 1995).

Because of over-investment in some industries, China is now suffering an energy shortage; rigorous quotas for electricity usage have been imposed everywhere, especially in areas where Taiwanese companies are concentrated. Although China has already reformed, the society is short all three foundations for a free economy: a sincere and honest society, a free market, and property rights protected by the government. Government officials retain the right to examine and approve every aspect of a business and to interfere at any time (Chang, 2004).

Additionally, the Chinese government's recent tightening of policies toward foreign-funded firms seems to suggest that China's long-term aim is to establish internationally competitive indigenous industries under Chinese control. Under these conditions, Taiwanese firms investing in China would encounter an unfamiliar operation environment. However, economic progress with political and social stability has been the guiding principle for both governments.

Correlation Between Executives' Leadership Styles and Their Practices of Knowledge Management (Primary Hypothesis)

The guiding role of leader for any knowledge management strategy is crucial (Pan & Scarbrough, 1998). As Table 20 shows, there was a significant correlation between executives' leadership style and their practices of knowledge management. This result was consistent with other studies. William (2003) conducted mixed methodology research to explore human resource executives' perception of knowledge management and to see if these perceptions are influenced by leadership style. William found that these factors represent a critical step toward enabling organizations to more effectively manage organizational knowledge in order to achieve a sustainable competitive

advantage in the 21st-century knowledge age.

Moreover, Greengard (1998) found that ensuring that senior management understands the value of knowledge management is important and supports the development of programs and policies to make it a reality. Fitz-enz (2000) determined in his study that a collaborative environment and strong support from top management must be established in order to build a knowledge community and a knowledge database.

Politis (2001) mentioned that leadership style factors that are characterized by participative behavior and mutual trust and respect for subordinates' ideas and feelings are positively related to knowledge acquisition attributes when compared with the leadership style factors that are characterized by task oriented and relationship behavior. The same results were found in the study of Taiwan (Chang, 2004; Huang, 2003). Therefore, organizational leaders are recognizing the new and rapidly changing operational demands that accompany business in the knowledge age.

Executives' Leadership Styles and Their Demographics (Sub-Hypotheses One and Three)

In this research, executives' leadership styles had positive correlation with their working title, years of working in the company, years of leading in the company, and years of total leadership in all companies. However, leadership styles had a negative correlation with executives' educational level.

A top business executive can expect members of a management team to act as a cohesive unit. Over time a self-selection process becomes evident by which only those who embrace certain norms and perspective are willing or allowed to stay in an organization (Pfeffer, 1983). The longer an executive is at a company, the more pronounced his or her leadership style becomes.

Allen and Cohen (1969) found that background and work experiences in an organization shape the ways that people process information. Katz (1982) pointed out that those managers are likely to depend increasingly on their past experiences and routine information sources rather than on new information with growing organizational experience.

Moreover, research suggests that homogeneity on length of time of leading in the organization can lead to similar interpretation of events (Allen & Cohen, 1969; Lawrence & Lorsch, 1967) and a common vocabulary (Rhodes, 1991), and can enhance communication among group members (March & Simon, 1958; Zenger & Lawrence, 1989). Additionally, Hambrick and Mason (1984) said that a manager's personal experiences and values can be concluded from demographic categories such as years of experience. These factors can influence executives' leadership styles.

It is interesting to note that college undergraduates were likely to have more obvious leadership styles than those with further training after a 4-year university degree. Work experiences of the former can serve as a significant tool in helping managers develop higher-level thinking and management skills.

Significant differences were found in executives' demographics. CEOs were more likely to prefer using a selling leadership style than department managers; people who are older than 50 were more likely to prefer using a selling leadership style than others; people who have more experience in leading prefer using a selling leadership style; and people whose education level is less than college prefer using a delegating leadership style.

After thousands of years Confucianism and feudal dynasties, Chinese people are

obedient, concerned about and cooperative with others, and good at predicting others' moods by observing their expressions and their behaviors. For the most part, Chinese culture strongly emphasizes respectfulness and adaptability. It also encourages people to avoid conflict and be cooperative. These basic concepts lead most Chinese to have flexible attitudes and to value commitment and cooperation. Redding (1990) said that based on the traditional Chinese approach to management, it could be predicted that the telling and selling styles of leadership would predominate. In this study, 22 of 78 executives (28%) used the selling leadership style.

As this research shows, older, more experienced executives and those in higher positions prefer to use a leadership style that is high in consideration and initiating structure (selling). Few executives used the telling style in the current research; however, Ryan and Avery (2002) studied the leadership styles used by managers across countries and found that Australian managers avoid using the telling leadership style (low consideration and high initiating structure).

Executives' Leadership Styles, Demographics, and Practices of Knowledge Management (Sub-Hypotheses Four)

Two main results were found when testing this hypothesis. First, executives' prefer selling leadership style the most when they practice combination knowledge management processes. Combination processes may help integrate several codified areas of knowledge and provide explicit knowledge. It also is the most obvious method to organize knowledge, which leaders in this study believed followers were willing to do but may not have had the ability to do. In this situation, it is important for leaders to be supportive of followers' motivation and commitment. Therefore, they prefer selling

leadership style the most to combine the knowledge.

Second, executives' prefer to use the telling leadership style when they practice internalization knowledge management processes. Internalization processes need to keep learning and focus primarily on more tacit knowledge. Executives in this study were aware of subordinates' unwillingness to convert explicit knowledge into tacit knowledge; hence, they prefer to use the telling leadership style.

Conclusions

This research explored the relationship between Taiwanese executives' leadership styles and their practices of knowledge management in Mainland China. The results created numerous significant contributions to business fields. The research also may help executives improve and develop their leadership and possibly advance knowledge management in their organization.

This study found that executives who used a leadership style of high consideration and high initiating structure used knowledge management the most and were the most satisfied with the knowledge available. On the contrary, executives who used a leadership style of low consideration and low initiating structure had the lowest usage of knowledge management. Additionally, the telling leadership style had the second highest use of knowledge management.

In this study, Taiwanese executives used the delegating leadership style the most, and the selling leadership style was the most effective leadership style in use of knowledge management. This finding is inconsistent with some previous studies, such as those mentioned in Silverthorne's (2000) study, which found that Taiwanese managers have a fairly high level of trust in their employees with a predominant group or

participative leadership style. In addition, Chien (2003) found that participating

leadership matches the background of today's situation because a dynamic society needs

a creative thinking style. He also said that the participating leadership style is effective in

the high-tech manufacturing field in Taiwan.

These results are somewhat surprising given the historically paternalistic nature of

Chinese management. Considering the characteristics of Confucianism, managers and

leaders in such cultures are to be respected, obeyed, and not questioned. Such an attitude

will produce generally higher ratings of managers as compared to most non-Confucian

cultures.

Many previous studies presented the idea that the ideal manager in Chinese

cultures was more controlling and directive and that Chinese workers seem to prefer a

more directive, authoritarian approach from their leaders.

"... subordinates in Chinese groups prefer a leadership style in which the

leader maintains a harmonious, considerate relationship with the followers

and defines clear-cut tasks for each member of the group" (Bond &

Hwang, 1993, p. 135).

In addition, a leader has vast, unquestioned authority in collectivist systems. The

effective model is the loving father, leading to a leadership style labeled *paternalism* by

Redding (1990). It seems that Chinese prefer an authoritarian leadership style in which a

benevolent and respected leader is not only considerate of his followers but also able to

take skilled and decisive action.

Because of greater power distance in China than in Taiwan, subordinates in China

are unlikely to report high-position superiors who fail to exercise self-restraint (He, 1998;

Rong, 1996). The business culture in Taiwan is more Westernized and less Confucian than in China. Therefore, Taiwan and China have different starting points, different political ideologies, and different managing styles (*Wall Street Journal,* 1999).

However, due to the different environments and concepts in Taiwan and Mainland China, the executives could change their leadership styles to adapt to the various situations from participating leadership style in Taiwan to selling leadership style in China.

One reason that the executives studied used the delegating leadership style more than selling leadership style may be that most Taiwanese managers are expatriates and temporary leaders in Mainland China. Most of them lead companies in China for only a few years; only a few move to China. Therefore, it is difficult for managers to keep everything within their span of control. Furthermore, local managers constitute a point of reference of prevailing leadership behavior and leadership style in the host country. Thus, demands of scale and complexity push the Taiwanese managers toward more a Western style of management, that of delegating.

This research also found that socialization knowledge management processes were used less often than any of the other knowledge management processes. It is a difficult and ambiguous process to transfer individual or group experiences, values, and knowledge through implicit learning to another people or group.

Additionally, most Taiwanese companies in Mainland China were established within the past 15 years, and leaders have spent most of their time adapting to the environment, establishing relationships, and earning a profit. The businesses have not matured enough for leaders to consider how to pass along knowledge to the next

generation. Knowledge management also is a relatively new idea that has not been applied in many fields and companies. Thus, high initiating structure leadership behavior is the best way to practice new knowledge management systems and guide followers to learn what to do and how to do it.

The results of testing the research hypotheses follow.

Primary Hypothesis

Positive correlations between executives' total leadership styles and their practices of knowledge management were found in this study. The results indicated that executives' leadership plays an essential role in total knowledge management processes by applying consideration behavior and initiating structure behavior.

Sub-Hypothesis One

The research found there were positive correlations between executives' total leadership styles and their demographics such as title, years of working in the company, years of leadership in the company, and total years of leading in all companies. There also was a negative correlation between executives' total leadership styles and their educational level. However, there were no correlations between executives' total leadership styles and their gender and age.

Sub-Hypothesis Two

There was no correlation between executives' practices of knowledge management processes and their demographics, but there was a correlation between executive's demographics and their satisfaction of knowledge available.

Sub-Hypothesis Three

Significant differences were found in executives' leadership styles based upon

their demographics such as title, age, educational level, years of leadership in the company, and total years of leadership management experience. However, no significant differences were found between executives' leadership styles based upon their gender and title.

Sub-Hypothesis Four

Significant differences exist among some knowledge management processes (combination and internalization) relative to certain leadership styles (selling and telling). However, no significant differences were found between executives' leadership styles and demographics under socialization knowledge management processes.

Recommendation

The study of executives' leadership styles and their practices of knowledge management continues to be a rich field for research. Management has a history of being exposed to and being a part of change, and adaptive leaders are more able to accept change.

According to the findings, executives who used the leadership style of high consideration and high initiating structure (selling leadership style) had the highest usage of knowledge management and the most satisfaction with the knowledge available. Based upon the concept of Confucianism, which has influenced Chinese culture for ages, selling leadership style is the most suitable leadership style for Taiwanese executives in Mainland China. Bond and Hwang (1993), Hofstede (1989, 1994), and McKenna (1998) believed that for Chinese managers "selling" is similar to paternalism; it is fundamentally a dependent relationship.

Moreover, organizational knowledge is created through a knowledge spiral across

four knowledge management processes: externalization, combination, socialization, and internalization of knowledge. Individuals' tacit knowledge is the basis of organizational knowledge creation. The organization mobilizes the tacit knowledge created and accumulated at the individual level and expands it to the whole organization (Krough, Roos, & Kleine, 1998). Therefore, leaders should use these four processes to improve organizational performance. In addition, today, many knowledge-oriented companies have created executive level management positions tasked with driving cultural change toward becoming knowledge cultures. This action illustrates that the leader is the key person in knowledge management application.

Executives should try to understand the features of tasks, and then based upon task field and orientation, identify and develop appropriate knowledge management processes. This would be a better strategy than efforts to develop all four knowledge management processes, especially under limited resource conditions.

This research adds to the body of academic knowledge on the relationship between leadership styles and knowledge management practices. It also contributes to the effectiveness of Taiwanese businesses in Mainland China. However, it also raised some interesting questions to be discussed. Based upon these issues, the following recommendations are presented.

Recommendations for the Future Researcher

First, Taiwan is a traditional society, and its leaders generally have been reluctant and unaccustomed to sharing information with academicians, which creates a problem when recruiting participants for a study (Chien, 2003). Moreover, organizations are concerned about showing their strengths and weaknesses to avoid malevolent competition.

Moreover, the return rate suffered because of a different location and government between Taiwan and China. The number of participants is a limitation of this study. Future researchers should attempt to increase the sample size of their studies.

In addition, *guanxi* (literally, interpersonal connections) has been identified as one of the key factors leading to business success in Chinese society (Abramson & Ai, 1999; Davies, Leung, Luk, & Wong, 1995; Lee, Pae, & Wong, 2001). Su and Littlefield (2001) distinguished favor-seeking *guanxi*, which is culturally rooted, from rent-seeking *guanxi*, which is institutionally defined. Demonstrating *guanxi*, there is a Taiwanese Association in almost every area of Mainland China to assist Taiwanese businessmen in solving problems, cooperating, and sharing information.

Meeting with a key person in the organization was decisive to breaking through barriers and entering the companies to conduct a study. The researcher met with the chief leader of Kun-Shan Taiwanese Association; this proved to be the main channel to get responses and assistance. Hence, it is quite impossible to ignore the factor of *guanxi* in Chinese society.

Second, the research was limited to high-tech Taiwanese companies in the Kun-Shan area of Mainland China. Further research can proceed in different areas and types of companies in Mainland China, with results compared to existing research.

Third, executives' leadership style is important for the company and is influenced by national culture. Although Taiwan and China share the same language and ethnicity, their national cultures have diverged as a result of the different political systems. Thus, further research can focus on monitoring new situations and the adjustments Taiwanese executives in Mainland China are making in leadership styles as they face a growing

competitive environment.

Fourth, the executives' leadership styles and their demographics were used in this study to appraise the influence on knowledge management practices. Other variables such as knowledge transfer, the performance of using knowledge management, and knowledge management models are potential factors that can be examined in future research. Furthermore, organizational learning, organizational culture, and national culture may have an impact on executives' practices of knowledge management, and future research can explore these subjects.

Fifth, this study found that the executives' leadership style of high consideration and high initiating structure (selling) was the most effective and guided the high use of knowledge management. Therefore, there can be further research on leadership styles to assist leadership training for the Taiwanese executives in Mainland China.

Sixth, this research only examined the relationship between executives' perception of their own leadership style and knowledge management practices. Future research can survey the issues from the subordinates' perspective. The results of such future studies can be compared to this research.

These recommendations could aid in finding answers to other questions. Many leadership practitioners and scholars (Bass, 1985; Kreiner, 1994) have proposed that followers need leadership to inspire them and enable them to enact revolutionary change in today's organizations. Situational Leadership® style is intuitively appealing and popular with practicing managers in such areas as business, research and development, communications, project management, health care, and education (Yukl, 1989).

In this research, the researcher found that both consideration and initiating

structure leadership behavior had a significant, positive correlation with knowledge management practices. Employee-leader trust was a key element and supported the strong match between the leader and followers. Both leaders and followers seem to have a good sense of the reality of leadership styles. Thus, an effective leader would need to combine both consideration and initiating structure leadership behaviors.

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Appendix A

Application for Institutional Review Board Approval Form

University of the Incarnate Word

1. Principal Investigator (type name): Hsin Kao

2. Dissertation Chair: Dr. Annette E. Craven

3. Division/Discipline: Ph. D. in Education / Organizational Leadership / Business

4 Research Category: a. __x__ Exempt b._____ Expedited Review c._____ Full Board Review

5. Purpose of Study

The purpose of the study is to investigate the possible relationship between executives' leadership styles and knowledge management practices in Taiwanese-investment high-tech companies in Kun-Shan, Mainland China.

6. Number of Subjects:___163___ Controls: ___None___

7. Does this research involve any of the following:

	Yes	No
Inmates of penal institutions	_____	_X_
Institutionalized mentally retarded	_____	_X_
Institutionalized mentally disabled	_____	_X_
Committed patients	_____	_X_
Mentally retarded outpatient	_____	_X_
Mentally disabled outpatient	_____	_X_
Pregnant women	_____	_X_
Fetus in utero	_____	_X_
Viable fetus	_____	_X_
Nonviable fetus	_____	_X_
Dead fetus	_____	_X_
In vitro fertilization	_____	_X_
Minors (under 18)	_____	_X_
	_____	_X_

For each "Yes", state what precautions you will use to obtain informed consent.

8. Duration of study: Six months — one year

9. How is information obtained?

    (1) Demographics information.

    (2) Leaders leadership styles' investigation (LBDQ).

    (3) The state of knowledge management: an assessment questionnaire

10. Confidentiality – (Are identifiers used for subjects? ____ Yes __X_ No

11. Benefit of research:

    This study contributes to the theory of knowledge management and leadership style in the context of the Taiwanese culture. In order to motivate the economic activities of Taiwan, the Taiwanese government encourages Taiwan's enterprises and supports them to help them have strong competitive abilities in the world. This study can provide clues for the Taiwanese government and enterprises to improve their managers' leadership styles and knowledge management systems.

12. Possible risk to subjects: With confidentiality safeguards, no risk to participants is anticipated.

IF CHANGE IN RESEARCH OCCURS THE BOARD MUST BE NOTIFIED BEFORE RESEARCH IS CONTINUED.

Principal Investigator signature_____ Date_____

IRB Approval signature _____ Date_____

Application # 04-08-002

Appendix B

Survey Consent Form (English)

Dear Prospective Participant:

I am Hsin Kao, a graduate student at University of the Incarnate Word working towards a doctorate degree in education with a concentration in organizational leadership. As follows is a notification to a respondent, please read it carefully:

You are being asked to take part in a research study of business executives' leadership styles and their practices of knowledge management. We want to learn the possible correlation between different leadership styles and knowledge management practices in Taiwan. You are being asked to take part in this study because your company has been selected for my study. You hold one of the following position: board chairman, vice chairman, chief executive officer (CEO), president, and any vice president of the in charge of a principal business unit, division or function (such as sales, administration or finance), any other officer who perform a policy making functions.

If you decide to take part, we will use Chinese to communicate with you, and it is very easy to answer this questionnaire according to your feeling in your workplace. It will take approximately twenty to thirty minutes to complete the survey, and your participation in this research will be greatly appreciated. You will receive a research package, including an informed consent form, and survey instruments in an unsealed envelope.

We do not guarantee that you will benefit from taking part in this study, but it may be useful for Taiwanese government and Taiwanese-invest companies in Mainland China. Everything we learn from you in the study will be confidential and cannot be used to identify with you. If we publish the results of the study, you will not be identified in anyway.

Your decision to take part in the study is voluntary. You are free to choose not to

take part in the study or to stop taking part at any time. If you choose not to take part or to stop at any time, it will not affect your future status at your company.

You may contact the researcher if you need to know general results of this research. Moreover, if you have any questions about your rights in the research, the Institutional Review Board at the University of the Incarnate Word will be glad to help answer your question. (210-829-2757 ---Dean of graduate Studies and Research). You will be given a copy of this form to keep. Completion and return of the questionnaire indicates your consent to participate in this research.

Your cooperation in participating in this research is deeply appreciated.

Sincerely,

Hsin Kao

210-979-0525 (US)

0912-403-855 (Taiwan)

hsinkao@mail2000.com.tw

I have read the information provided and agree to participate in this study.

_____   _____/_____
Signature of Subject   Date   (Time)

_____   _____
Phone Number   E-mail address

Appendix C

Survey Consent Form (Chinese)

給受試者的信　有關領導風格與知識管理的研究

親愛的敬啓者：

我是高欣，目前在聖道大學就讀有關領導及組織管理的博士班課程，此信之目的爲邀請您參與本人博士論文之研究。

本研究之目的爲了解台商主管的領導風格以及知識管理的應用。您受邀參與這項研究是因爲貴公司爲最合適的研究對象之一，現擬向貴公司的高階主管進行問卷調查，您如果具有以下某一種職務：董事長、總經理、總裁、主席、副總裁以及任何專業部門的高階主管，包括財務或會計主管；廣告或行銷企劃主管；工廠或採購主管等等均可。

如果您決定參與，問卷的問題相當容易，只要依據您在工作場所的情形回答即可。非常感謝您花費二十至三十分鐘來完成本問卷。您將會收到一個未封口信封，內有受試者須知與同意書以及問卷。

我們不能保證您的參與一定對您有多大的益處，但是這項研究對台灣政府和大陸台商將有很大的幫助。有關從您那裡取得的訊息，我們會負責保密，即使發行研究結論也不會影響您的權益。

感謝您願意參與此項專題研究，您也可以隨時停止參與。此外，有關此項研究調查之事，若有任何問題，歡迎隨時利用下列之電話或電子郵件信箱，來電或信件查詢。本校博士論文倫理道德審查委員會亦樂於回覆您參與本研究調查之權利問題(210-829-2757--研究所系主任)。請全部填完問卷以及簽名後寄回本人。

謝謝您的參與及合作！

本人已詳閱上列資訊，並同意參與本研究調查。

<div align="right">

高　欣　敬上

美國　210-979-0525

台灣　0912-403-855

hsinkao@mail2000.com.tw

民國九十三年九月二十五日

</div>

_____　　_____/_____
　　　　受試者簽名　　　　　　　　　　　日期　　　時間

_____　　_____
　　　　聯絡電話　　　　　　　　　　　　電子郵件信箱(E-Mail)

Appendix D

Survey Instrument (Chinese)

Questionnaires of business executives' leadership styles and their knowledge

management practices

Ladies and Gentleman:

This is an academic questionnaire; the purpose of this research is to examine the

possible correlation between business executives' different leadership styles and their

knowledge management practices.

The questionnaires are composed of three parts (Part I , II and III). There is no

right or wrong answer what you think or feel is what is important for this survey.

Your answer to this questionnaire will be anonymous. Neither your supervisor nor your

colleagues will see your questionnaire. So please feel free to express your true opinions

on these questions.

Thank you in advance for your cooperation and support.

The University of Incarnate Word

Professor: Dr. Dr. Annette E. Craven

Student: Hsin Kao

E-mail: hsinkao@mail2000.com.tw

Telephone: 210-979-0525

Part I : Demographics information (Place a check mark ∨)

�Gender:	_____ Male	▶ Your Title: _____
	_____ Female	_____
▶ Age: _____		▶ Years of working in the present company: _____
▶ Level of education: College or under University Master or Doctor _____ Other		▶Years of leadership at the present company: _____
		▶ Years of total leadership with all companies: _____

Part II : Leader Behavior Description Questionnaire (LBDQ)

This questionnaire is used to describe the leadership style of you as a business executive in the company. Please answer all items on this answer sheet. Please select one of the following. Mark your answer clearly on the Scantron.

Use the following rating scale:

| A = Always, | B = Often, | C = Occasionally, |
| D = Seldom, | E = Never |

		E	D	C	B	A
01	I let group members know what is expected of them	◯	◯	◯	◯	◯
02	I encourage the use of uniform procedures	◯	◯	◯	◯	◯
03	I try out my ideas in the group	◯	◯	◯	◯	◯
04	I make my attitudes clear to the group	◯	◯	◯	◯	◯
05	I decide what shall be done and how it shall be done	◯	◯	◯	◯	◯
06	I assign group members to particular tasks	◯	◯	◯	◯	◯
07	I make sure that my part in the group is understood by the group members	◯	◯	◯	◯	◯
08	I schedule the work to be done	◯	◯	◯	◯	◯
09	I maintain definite standards of performance	◯	◯	◯	◯	◯
10	I ask that group members follow standard rules and regulations	◯	◯	◯	◯	◯
11	I am friendly and approachable	◯	◯	◯	◯	◯
12	I do little things to make it pleasant to be a member of the group	◯	◯	◯	◯	◯
13	I put suggestions made by the group into operation	◯	◯	◯	◯	◯
14	I treat all group members as my equal	◯	◯	◯	◯	◯
15	I give advance notice of changes	◯	◯	◯	◯	◯
16	I keep to myself	◯	◯	◯	◯	◯
17	I look out for the personal welfare of group members	◯	◯	◯	◯	◯
18	I am willing to make changes	◯	◯	◯	◯	◯
19	I refuse to explain my actions	◯	◯	◯	◯	◯
20	I act without consulting the group	◯	◯	◯	◯	◯

Part III: The State of Knowledge Management: An Assessment Questionnaire

This questionnaire has three sections. Section1 asks questions about the tools and processes used to manage knowledge at your organization. Section 2 asks some questions about your satisfaction with knowledge management. Section 3 asks some questions about a specific type of knowledge relevant to your work.

Section 1: Knowledge Management Processes

Please indicate how frequently each of the following knowledge management processes and tools are used to manage knowledge at your organization.

Use the following rating scale:

VI = Very Infrequently (1)   I = Infrequently (3),   MF = Moderate Frequency (3)

F = Frequently (4)   VF = Very Frequently (5)

	VI	I	MF	F	VF
1. Case studies and stories	O	O	O	O	O
2. The use of apprentices and mentors to transfer knowledge	O	O	O	O	O
3. Brainstorming retreats or camps	O	O	O	O	O
4. Employee rotation across areas	O	O	O	O	O
5. Face-to-face meetings	O	O	O	O	O
6. Cooperative projects across departments	O	O	O	O	O
7. Modeling based on analogies and metaphors	O	O	O	O	O
8. Simulations and game playing	O	O	O	O	O
9. Drawing inferences from trends in historical data	O	O	O	O	O
10. On-the-job training	O	O	O	O	O
11. Learning by doing	O	O	O	O	O
12. Learning by observation	O	O	O	O	O
13. Repositories of information, best practices, and lessons learned	O	O	O	O	O
14. Development of prototypes	O	O	O	O	O
15. Learning from prototypes	O	O	O	O	O
16. Learning from concept maps and experts' knowledge	O	O	O	O	O
17. Capture and transfer of experts' knowledge	O	O	O	O	O
18. Chat groups/ Web-based discussion groups	O	O	O	O	O
19. Groupware and other team collaboration tools	O	O	O	O	O
20. Web pages (Intranet and Internet)	O	O	O	O	O
21. Databases	O	O	O	O	O
22. Web-based access to data	O	O	O	O	O
23. Decision support systems	O	O	O	O	O
24. A problem-solving system based on a technology like case-based reasoning	O	O	O	O	O
25. Pointers to expertise (skills "yellow pages")	O	O	O	O	O

Section 2: Satisfaction with the Knowledge Available

The researcher would like to access your satisfaction with the knowledge available to you, to your department in general, and to your organization at an overall level.

Use the following rating scale:

SD = Strongly Disagree (1)   D = Disagree (2)   N = Neither Disagree nor Agree (3)

A = Agree (4)   SA = Strongly Agree (5)

	SD	D	N	A	SA
1. You have access to the knowledge needed to perform your tasks.	○	○	○	○	○
2. The available knowledge improves your effectiveness in performing your tasks.	○	○	○	○	○
3. Knowledge shared effectively among individuals at your tasks.	○	○	○	○	○
4. The available knowledge improves the effectiveness of your department.	○	○	○	○	○
5. Individuals in your department have access to the knowledge needed to perform their tasks.	○	○	○	○	○
6. Knowledge is shared effectively among individuals in various departments in your organization.	○	○	○	○	○
7. The available knowledge improves your organization's overall effectiveness.	○	○	○	○	○
8. Individuals in your organization have access to the knowledge needed to perform their tasks.	○	○	○	○	○

Section 3: Evaluation of One Specific Type of Knowledge

Please identify one specific area of knowledge that you consider very important for performing your tasks. This could be a knowledge area that only affects your tasks, or one that affects your department in general, or one that affects your entire organization.

Use the following rating scale:

SD = Strongly Disagree (1)   D = Disagree (2)   N = Neither Disagree nor Agree (3)
A = Agree (4)   SA = Strongly Agree (5)

	VI	I	MF	F	VF
1. A manual describing the knowledge in this area can be written.	○	○	○	○	○
2. This knowledge can be easily expressed in the form of notes and documents	○	○	○	○	○
3. Large parts of this knowledge can be embodied in computer software.	○	○	○	○	○
4. There is extensive documentation describing critical parts of this knowledge.	○	○	○	○	○
5. New personnel can easily acquire this knowledge by talking to skilled employees.	○	○	○	○	○
6. Educating and training new employees is a quick, easy job.	○	○	○	○	○
7. New personnel can easily acquire this knowledge by studying our documents.	○	○	○	○	○
8. This knowledge can be easily taught.	○	○	○	○	○
9. This knowledge is frequently used by yourself in performing your tasks.	○	○	○	○	○
10. This knowledge improves your overall effectiveness.	○	○	○	○	○
11. This knowledge is frequently used by your department in performing its tasks.	○	○	○	○	○
12. This knowledge improves the overall effectiveness of your department.	○	○	○	○	○
13. This knowledge is frequently used by your organization in performing its tasks.	○	○	○	○	○
14. This knowledge improves your organization's overall effectiveness.	○	○	○	○	○

Appendix E

Survey Instrument (Chinese)

敬啓者:

　　您好，後學高欣，目前在美國德州聖安東尼奧 University of the Incarnate Word 博士班修讀學位，由於後學對組織與企業管理深感興趣，因此擬深入探討各個企業領導者所表現的型態。

　　時值現階段知識管理蓬勃發展，大小企業紛紛西進之際，鑑於我國產官學各方面之需要，研究大陸台商高階主管之領導型態及知識管理當可分析各個企業家之異同，並予以評估，俾截長補短互爲觀摩使各個企業體能夠精益求精妥善完美，期能圓滿完成拓展我國經貿領域之任務。

　　本研究定名爲「大陸台商高階主管之領導型態及知識管理之研究」，依據本論文的研究架構，貴公司爲最合適的研究對象之一，現擬向貴公司的高階主管進行問卷調查，希望了解台商企業家之領導型態及知識管理，經過研判分析整合後，將提出改進之建議提供各公司使之能夠提升效率，增加產能。

　　本問卷共分三個部份，您將收到一個封口信封，內有說明信函以及問卷。本研究係以匿名方式爲之，您的相關資料且將受到嚴格保密，並僅用於學術研究上，絕不做其他用途。您填答之問卷亦將於本研究採用後銷毀，如果您對自身權益有任何疑問，本校博士論文倫理道德委員會將樂於回答您的問題，聯絡電話如下，研究所所長 012-1-210-829-2757(美國) mulnix@universe.uiwtx.edu 或直接與後學聯繫。

　　再次爲您的參與敬致十二萬分之謝意

　　敬祝

　　產銷順暢 萬事如意

　　後學 高 欣 敬上 09.29.04

　　電話- 0912-403-855

　　傳真電話-02-2793-0059

　　E-mail- hsinkao@mail2000.com.tw

Part Ⅰ:您的基本資料:

▌ 性別: _____ 男
 	
       _____ 女
	▌ 您的職稱: _____
	
	      (中.英文) _____

▌ 學歷: _____ 專科及以下學歷
           _____ 大學
           _____ 碩士或博士
           _____ 其他
	▌ 年齡
	
	        _____歲
	
	▌ 您在現任公司服務年資:
	
	        _____年

▌ 您在大陸投資的地區: _____ (例如:上海市.昆山市.蘇州.....等等)	▌ 您在現任公司擔任主管的年資: _____年
▌ 您在大陸投資的產業: _____ 傳統 _____ 高科技 _____其他	▌ 您擔任主管的總年數(包括以前的公司): _____年

Part Ⅱ：領導型態部分

以下的問題是描述您的領導型態.每題請選擇一個答案並勾選在○適當的位置。測驗強度為：非常少，很少，偶爾，經常，總是

		非常少	很少	偶爾	經常	總是
1	我讓大家知道什麼事情是應該做的	○	○	○	○	○
2	我鼓勵大家使用統一的作業程序	○	○	○	○	○
3	在組織中,我嘗試表現我自己的想法	○	○	○	○	○
4	我讓大家清楚我的領導態度	○	○	○	○	○
5	我決定大家應該做什麼事以及事情要如何進行	○	○	○	○	○
6	我會指派特定的人作特定的工作	○	○	○	○	○
7	我會確定我們在組織中所扮演的角色	○	○	○	○	○
8	我會排定何時該完成何項工作	○	○	○	○	○
9	我會修定與維護標準的工作績效	○	○	○	○	○
10	我會要求大家遵守工作規則	○	○	○	○	○
11	我是一位友善及極易親近的人	○	○	○	○	○
12	我會作一些事情讓大家覺得身為團體中的一份子是很愉快的	○	○	○	○	○
13	我會採納大家所提出的建議	○	○	○	○	○
14	我對待大家就像對待自己一樣	○	○	○	○	○
15	我在事情改變前會先通知大家	○	○	○	○	○
16	我不與員工往來或溝通	○	○	○	○	○
17	我關心員工的福利	○	○	○	○	○
18	我樂意去做改革	○	○	○	○	○
19	我覺得對的就去做,不需要為自己的行為做說明	○	○	○	○	○
20	我在執行命令前不徵詢大家的意見	○	○	○	○	○

Part Ⅲ：知識管理部分

<u>第一部分：知識管理步驟</u>
這一部分共有 19 種知識管理的方法和步驟，請依您對您的組織使用各種方法的頻率勾選○適當的位置。測驗強度為：非常少，很少，偶爾，經常，總是

	非常少	很少	偶爾	經常	總是
1. 故事舉例說明	○	○	○	○	○
2. 師徒制傳授知識	○	○	○	○	○
3. 集體研討	○	○	○	○	○
4. 員工輪流做不同領域的職務	○	○	○	○	○
5. 面對面的集會	○	○	○	○	○
6. 部門間的合作計畫	○	○	○	○	○
7. 模仿學習自類似的組織或典故	○	○	○	○	○
8.　模擬和遊戲	○	○	○	○	○
9.　從以前的資料推斷	○	○	○	○	○
10. 在職訓練	○	○	○	○	○
11. 從工作中學習	○	○	○	○	○
12. 從觀察中學習	○	○	○	○	○
13. 從上課.練習和資料庫中學習	○	○	○	○	○
14. 雛型的發展	○	○	○	○	○
15. 從初步模型中學習	○	○	○	○	○
16. 從專家的知識和概念中學習	○	○	○	○	○
17. 利用專家學者的知識	○	○	○	○	○
18. 聊天室/網路討論	○	○	○	○	○
19. 促進團隊研究的工具方法	○	○	○	○	○
20. 內外部網路	○	○	○	○	○
21. 資料庫	○	○	○	○	○
22. 上網查詢資料	○	○	○	○	○
23. 電腦化決策輔助系統 (決策資源系統)	○	○	○	○	○
24. 利用各種資訊科技來解決問題 EX:專家系統	○	○	○	○	○
25. 有問題可以請教專家	○	○	○	○	○

<u>第二階段：對知識取得的滿意度</u>
以下的問題是想得知您在您組織內可獲得知識的滿意程度，每題請選擇一個答案並
勾選○適當的位置。測驗強度為：非常不同意.不同意.尚可.同意. 非常同意

	非常不同意	不同意	尚可	同意	非常同意
1. 你有管道取得有助於完成你任務的知識。	○	○	○	○	○
2. 知識幫助你有效率的完成你的工作	○	○	○	○	○
3. 在工作中每個人有效的分享知識	○	○	○	○	○
4. 知識有效的改進你的部門	○	○	○	○	○
5. 你部門中的每個人有管道可取得工作中需要的知識	○	○	○	○	○
6. 在你的組織裡,每個不同部門的人可以有效的分享知識	○	○	○	○	○
7. 知識增進組織的整體效率	○	○	○	○	○
8. 你組織中的每個人有管道可取得工作中需要的知識	○	○	○	○	○

<u>第三階段: 對知識的評價</u>

請舉出一個你認為會影響你工作重要的專門知識領域。 它可以是一種知識領域只有
影響你的工作又或是進而影響你的部門或是你的組織.

○ 管理性知識	○系統整合知識	○通路行銷知識	○產品設計知識
○ 生產技術知識	○電腦相關產品開發知識	○製程設計知識	○財務會計知識

其他知識 ＿＿＿＿＿＿＿＿＿＿＿＿＿

承上題，根據您剛剛回答的領域.每題請選擇一個答案並勾選○適當的位置。

測驗強度為：相非常不同意.不同意.尚可.同意. 非常同意

	非常不同意	不同意	尚可	同意	非常同意
這個領域的知識可以寫成手冊	○	○	○	○	○
這種知識可以容易的用便條或是文件的形式表達	○	○	○	○	○
這種知識的大部分可以具體的被表現在電腦軟體中	○	○	○	○	○
有很多文獻敘述這種知識的重要部分	○	○	○	○	○
新進人員能夠透過與有技術的員工談話而容易獲得這種知識	○	○	○	○	○
教育和訓練新雇員是一種快速的, 容易的工作	○	○	○	○	○
1. 新進人員能夠容易的透過我們的文件而獲得這種知識	○	○	○	○	○
2. 這種知識是很容易被傳授的	○	○	○	○	○
3. 你工作中經常要使用這種知識	○	○	○	○	○
4. 這種知識增加整體工作效率	○	○	○	○	○
5. 你部門中經常要使用這種知識	○	○	○	○	○
6. 這種知識增加你部門中的整體工作效率	○	○	○	○	○
7. 你組織中經常要使用這種知識	○	○	○	○	○
8. 這種知識增加你組織中的整體工作效率	○	○	○	○	○

*****請再檢查有無遺漏填答*****

*****請利用回郵信封或傳真電話 *****

再次感謝您的合作與支持

Appendix F

Authorizing Letter for Leader Behavior Description Questionnaire (LBDQ)

FISHER

COLLEGE OF BUSINESS

THE OHIO STATE UNIVERSITY

FISCAL OFFICE

July 29, 2004

Hsin Kao
8610 McCullough Ave Apt 402W
San Antonio, TX 78216

Dear Hsin Kao:

We grant you permission to use the **Leader Behavior Description Questionnaire** for your research. As indicated in the Statement of Policy, the forms should not be used for promotional activities or for producing income.

Please call if you have any questions or if there is any way I can be of assistance.

Sincerely,

Molly M. Wilson
Fiscal Associate
Max M. Fisher College of Business
100H Fisher Hall
2100 Neil Avenue
Columbus, OH 43210
Phone: (614) 292-5031
Fax: (614) 292-1651

Appendix G

Authorizing Letter for LBDQ Chinese Version and the Reliability

of the Translated LBDQ-XII

Dear Hsin Kao:

This is an agreement to utilize the edition of "Chinese Leader Behavior Descriptive Questionnaire" and " The Reliability of the LBDQ XII in Labor Presidents and Reliability of the Translated LBDQ XII" for your dissertation on the topic of "A study of Business Managerial Leadership Style and Knowledge Management Practices in Taiwan" only.
Also, the paper of agreement and the Chinese edition of Leader Behavior Descriptive Questionnaire will be appendices in your dissertation.

Wish you a pleasure study
Sincerely

Chi-Sheng Chien 08. 07. 2004.
(03) 4524537 – Taiwan
mileschien@hotmail.com

Appendix H

Authorizing Letter for The State of Knowledge Management:

An Assessment Questionnaire

Irma Becerra-Fernandez,
Decision Sciences& Information Systems College of Business Administration,
Florida International University, Miami, Florida 33199

Rajiv Sabherwal,
Information and Management Sciences College of Business,
Florida State University, Tallahassee, Florida 32306-1110

Dear Ms. Becerra-Fernandez and Mr. Sabherwal:

My name is Hsin Kao. I am a graduate student at the University if the Incarnate Word working towards a doctoral degree in education with a concentration in Organizational Leadership. Currently I am working on my dissertation with the topic of "A study of Business Managerial Leadership Style and Their Practices of Knowledge Management in Taiwan".

This study was designed to examine the relationship between Business executives' leadership style and knowledge management practices in Taiwanese companies. It is expected that the finding will provide recommendations for effective leadership and knowledge management techniques.

To help knowledge management practices of business executives in Taiwan, I would like your permission to use The State of Knowledge Management: An Assessment Questionnaire. I found the questionnaire attached to the article "Organizational Knowledge Management Process: A contingency Perspective" in Journal of MIS (1999). I also would like to ask for your permission to translate the questionnaire to a Chinese version, which I will include in the appendices in my dissertation.

Could you please advise if you have specific instructions for interpreting the results of your questionnaire that would impact the reliability and validity of my research results.

If these arrangements meet with your approval, please sign your permission on the Permission Form and mail it to me in the enclosed return envelop. Thank you for your kind assistance on my research.

Sincerely,
Hsin Kao
210-663-2631 (America)/ hsinkao@mail2000.com.tw

From: Irma Becerra Fernandez, Ph.D. <becferi@fiu.edu>
To: hsinkao@mail2000.com.tw
副本: Rajiv Sabherwal <sabherwal@umsl.edu> , Irma.Fernandez@fiu.edu
Date: Tue, 17 Aug 2004 09:58:34 -0400
Subject: Re: Thanks for your assistance!

Dear Hsin:
I spoke to Dr. Sabherwal and he says its ok for you to go ahead and use the questionnaire, as long as you properly cite us.
Gook luck on your research endeavors.

Best,

Irma Becerra-Fernandez, Ph.D.
Associate Professor and Director of the Knowledge Management Lab
Faculty Director, Masters of MIS
Florida International University
College of Business Administration
Decision Sciences and Information Systems
University Park, BA250
Miami, FL 33199
www.kmlab.fiu.edu
Voice: (305) 348-3476
Fax: (305) 348-4126

Appendix I

A Framework for Studying Leadership Figure Permission Letter

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Cynthia Aguilera
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For Licensee:

Name _____

Title _____

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Appendix J

Authorizing Letter for Studies of Leadership Traits and Characteristics Table and

Knowledge-Related Constructs and Selected Knowledge Application Tables

Dear Anna:

My name is Hsin Kao. I am a graduate student at the University of the Incarnate Word working towards a doctoral degree in education with a concentration in organizational leadership. Now I am doing my dissertation with the topic of "Leadership Style and Knowledge Management Practices in Taiwan".

To assist the research to identify the leadership traits and characteristics, I would like to get your permission to use "Studies of leadership traits and characteristics" (p. 18) table which I found in the book named " Leadership: Theory and Practice" in my dissertation.

To assist the research to identify the knowledge management concepts, I would like to get your permission to use" Knowledge-related constructs" (p.54) and "Selected knowledge applications" (p. 56) tables which I found in the book named " Knowing in Firms" in my dissertation.

Here is the books' information:

1. Leadership: Theory and Practice, by P. G. Northouse, 2001, Thousand Oaks, CA: Sage.

2. Knowing in firms, by K.M. Krogh, J. Roos and D. Kleine, 1998, London: Sage Publications.

If you have other questions, please contact with me.
Thanks for your assistance.

Best Regard,
Hsin Kao

From: Clifford, Anna <Anna.Clifford@sagepub.com>
To: hsinkao@mail2000.com.tw
Date: Thu, 3 Mar 2005 09:51:41 -0800
Topic: RE: Request for permission!

Dear Hsin Kao,

Please consider this written permission to use the material detailed
below for your dissertation only.

Sincerely,

Anna Clifford
Permissions & Translations Administrator
Sage Publications
2455 Teller Road
Thousand Oaks, CA 91320
805-499-0721, ext. 7713
805-376-9562 fax
anna.clifford@sagepub.com

Appendix K

Path-Goal Theory Figure Permission Form

PEARSON
Education

Legal/Permissions
One Lake Street
Upper Saddle River, NJ 07458
Fax: 201-236-3290
Phone: 201-236-3564

Jan 12, 2005

PE Ref # 108243

HSIN KAO
8610 McCullough #402W
San Antonio, TX 78216

Fax #:

Dear HSIN KAO:

You have our permission to include content from our text, *ORGANIZATIONAL BEHAVIOR-E-BUSINESS UPDATED EDITION, 9th Ed,* in your Dissertation for your Doctoral degree in Organizational Leadership at University of the Incarnate Word, to be completed May 2005.

Content to be included is:
p. 324 Figure 11.4: The Path-Goal Theory

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Sincerely,

Sabrina Paris
Permissions Administrator

Appendix L

Situational Leadership® Model Figure Permission Letter

Dear Julene:

My name is Hsin Kao. I am a graduate student at the University of the Incarnate Word working towards a doctoral degree in education with a concentration in organizational leadership. Now I am doing my dissertation with the topic of "Leadership Style and Knowledge Management Practices in Taiwan".

To assist the research to identify the situational leadership style, I would like to get your permission to use "Situational Leadership Model" diagram which I found in the book named "Management of Organizational Behavior" in my dissertation.

Thanks for your assistance.

Best Regard,

Hsin Kao

From: Julene Burton <julene.burton@situational.com>

To: hsinkao@mail2000.com.tw

Date: Tue, 1 Feb 2005 07:54:37 -0800

Topic: RE: Your Dissertation Permission Request

Mrs. Hsin Kao,

Thank you for your prompt response. Permission to use figure 8-7 - The Situational Leadership Model in your dissertation is granted. Please make sure to use the registered trademark (®) wherever the term Situational Leadership Model ® appears.

Regards,

Julene Burton

Contracts, Copyrights, & Permissions

Leadership Studies, Inc.

Email: julene.burton@situational.com

Appendix M

The Map of East Mainland China Figure Permission Form

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Fill out the top part, sign, and fax sheet to Carrie Meadows at (603) 891-0597:

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Contact Person: ___Hsin Kao___

Address: ___8610 McCullough Ave. Apt. 402W, San Antonio, TX, 78216___

Phone Number: ___(210) 979-0525___ Fax number: _____

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Authorized Signature: ___Hsin Kao_____ 9/9/04

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Sincerely,

Kevin Fitzgerald, Editor in Chief
Date: 9/9/04

Appendix N

Authorizing Letter for Reliable Range of Cronbach Alpha Coefficient

Dear Dr. Wu:

My name is Hsin Kao. I am a graduate student at the University of the Incarnate Word working towards a doctoral degree in education with a concentration in organizational leadership. Now I am doing my dissertation with the topic of "Leadership Style and Knowledge Management Practices in Taiwan".

To assist the research to identify the reliability of Cronbach alpha coefficient, I would like to get your permission to use "Reliable Range of cronbach Alpha Coefficient" table in my dissertation. Also, I would like to ask for your permission to translate it to an English version.

Thanks for your assistance.

Best Regard,

Hsin Kao

來源: txwu <txwu@cc.shu.edu.tw>

收信: hsinkao@mail2000.com.tw

日期: Tue, 1 Mar 2005 02:28:17 +0800

標題: RE: 吳統雄教授您好

同意。 (I agree)

請注明出處即可。(Please Cited where it's from)

謝謝！(Thank you)

吳統雄 敬上

世新大學資訊管理系/ 臺灣大學資訊傳播學程

Wu, Sean Tung-Xiung Ph.D.

Department of Information Management, Shih Hsin University

Interdisciplinary Program of Information Communication, National Taiwan University

No.1, Lane 17, Mu-Cha Rd., Section 1, Taipei, Taiwan, ROC 116

Tel: 886-2-22368225 ext. 3347 Fax: 886-2-22367114 M:0921807365

email: txwu@cc.shu.edu.tw

website: http://tx.shu.edu.tw/

Appendix O

The List of the Companies

Num.	Name of the Company	Address	Contact Number
001	嵩雷精密電子工程(崑山)有限公司	石浦鎮	T:57404111 F:57404000
002	星雲電腦(崑山)有限公司	千燈鎮秦峰北路	T:57468752 F:57461956
003	晟模電子(崑山)有限公司	千燈鎮少卿中路 10 號	T:57468778 F:57468768
004	崑山新力精密五金有限公司	石浦鎮興浦南街 7 號	T:57406899 F:57406999
005	崑山三達紡織機械有限公司	石浦鎮	T:57406828 F:57406838
006	崑山六二豐塑膠電子有限公司	鎮溪鎮開發區	T:57237628 F:57236262
007	采威光電科技(崑山)有限公司	千燈聖祥路 3 號	T:57460102 F:57460104
008	振力機械(崑山)有限公司	鎮溪鎮開發區錦發路	T:57223511 F:57223106
009	崑山登一機械有限公司	山湖鎮雙馬路	T:57486949 F:57486947
010	鑫耀科技五金(崑山)有限公司	千燈鎮機場路	T:57469812 F:57469716
011	大曜電子發展(崑山)有限公司	淀山湖工業區新華路北側	T:57485099 F:57488020
012	富港電子(崑山)有限公司	錦溪鎮東路北側	T:57235288 F:57225356
013	瑋翔精密電子工業(崑山)有限公司	石浦鎮豐收東路 15 號	T:57407286 F:57407300
014	致威電子(崑山)有限公司	千燈鎮秦峰路 137 號	T:57469789 F:57469798
015	崑山榮成電子有限公司	石浦鎮興浦路 168 號	T:57406060 F:57406187
016	崑山銓瑩電子有限公司	千燈鎮少卿西路 8-8 號	T:57460168 F:57460608
017	協易科技精機(中國)有限公司	石浦鎮興浦中路 88 號	T:57407900 F:57407899
018	崑山裕豐自動控制閥門有限公司	花橋鎮曹安經濟開發區	T:57607031 F:57607036
019	崑山雅士達機械製品有限公司	淀山湖鎮新華路 8 號	T:57488127 F:57488130
020	一詮精密電子工業(崑山)有限公司	石浦鎮機電路 1 號	T:57408111 F:57408127

021	崑山勤茂電子科技有限公司	周莊鎮高科技產業國	T:57219501 F:57215731
022	萬道光生金屬工業(崑山)有限公司	花橋鎮經濟開發區雙華路	T:57607330 F:57607335
023	崑山雷城興業機械有限公司	花橋鎮曹安開發區雙華路2號	T:57603979 F:57603983
024	宏茂五金(崑山)有限公司	花橋鎮曹安開發區	T:57697688 F:57697588
025	崑山禾益精密電子工業有限公司	花橋鎮 312 國道南側	T:57696355 F:57696255
026	瀘士電子(崑山)有限公司	開發區黑龍江北路 55 號	T:57356888 F:57309932
027	崑山六豐機械工業有限公司	開發區慶豐西路 179 號	T:57312278 F:57312178
028	今皓電子(崑山)有限公司	開發區今皓路 288 號	T:57330288 F:57338677
029	崑山金利商標有限公司	開發區昆嘉路 1098 號	T:57702530 F:57711743
030	陽興造機(崑山)有限公司	周市鎮青陽北路	T:57624576 F:57624579
031	新光機電(崑山)有限公司	長江北路 368 號	T:57667680 F:57667659
032	耀寧電子工業(中國)有限公司	開發區耀寧路 8 號	T:57908888 F:57718835
033	崑山市怡信機電工程有限公司	開發區珠江北路南苑新村12 號	T:57324522 F:57314749
034	英嵩機械工業(崑山)有限公司	開發區李箕路 19-2 號	T:57327242 F:57329410
035	元春機械工業(崑山)有限公司	開發區青陽南路 75 號	T:57702654 F:57715224
036	崑山東方首席電子商務有限公司	長江南路出口加區金融商務中心 2 樓	T:57359490 F:57359528
037	豐田工業(崑山)有限公司	開發區長江南路 818 號	T:57303181 F:57303184
038	南亞電子材料(崑山)有限公司	開發區長江南路 201 號	T:57357080 F:57351122
039	崑山友誠機電有限公司	周市鎮長江北路及順昶路口	T:57310892 F:57667001
040	優強機械(崑山)有限公司	周市鎮茂源路 68 號	T:57626696 F:57626867
041	東碩電子(崑山)有限公司	長江北路 366 號	T:57096888 F:57096700
042	風冠電機(崑山)有限公司	開發區長江南路 888 號	T:57335551 F:57335559
043	帝華電子(崑山)有限公司	開發區同豐東路 1028 號	T:57711818 F:57711801
044	旺詮科技(崑山)有限公司	開發區前進東路	T:57709898 F:57709977

045	唐威光電(崑山)有限公司	富民經濟開發區慶豐東路 19 號	T:57718199 F:57718399
046	永業電子科技(崑山)有限公司	周市鎮青陽北路	T:57626830 F:57626776
047	崑山宏致電子有限公司	周市鎮青陽北路西側	T:57627562 F:57627565
048	天瑞電子科技發展(崑山)有限公司	開發區南河路 888 號	T:57713288 F:57353285
049	長興電子材料(崑山)有限公司	開發區青陽中路 267 號	T:57717512 F:57717391
050	廣州聯通華建網絡科技有限公司崑山分公司	同豐東路樾城花園 53#806 室	T:57361539 F:57361569
051	益伸科技電子五金(崑山)有限公司	石牌鎮中華路南側	T:57687151 F:57687153
052	歐賓機電科技(崑山)有限公司	經濟開發區黃浦江南路 166 號	T:57716258 F:57716253
053	崑山鈞鼎電子有限公司	玉山開發區江浦北路 307 號	T:57590978 F:57590979
054	奧寶電子(深圳)有限公司崑山分公司	經濟開發區珠江北路 278 號一樓	T:57357745 F:57358628
055	崑山精維電子科技有限公司	石牌鎮塔基路東側	T:57881250 F:57881252
056	崑山華聲網絡系統工程有限公司	樾城路 12 號	T:57922301 F:57363304
057	鴻琦電子科技(崑山)有限公司	石牌鎮昆華南路 23 號	T:57687363 F:57687361
058	立基電子(崑山)有限公司	石牌鎮	T:57681317 F:57681102
059	緯創資通(崑山)有限公司	出口加工區第一大道 25 號	T:57367888 F:57367999
060	維格車料(崑山)有限公司	開發區樾河南路 103 號	T:57701991 F:57701995
061	崑山銳群自動化設備有限公司	前進東路 75#	T:57635336 F:57636709
062	耀登電通科技(崑山)有限公司	陸楊配套區華揚科學工業園區	T:57646998 F:57646996
063	聰縉電子(崑山)有限公司	陸揚鎮迎寶路 9 號	T:57645386 F:57645385
064	昆達電腦科技(崑山)有限公司	出口加工區第二大道	T:57367777 F:57368038
065	凱博電腦(崑山)有限公司	出口加工區第二大道 200 號	T:57376789 F:57376272
066	慶華機電技術顧問(崑山)有限公司	樾河北路 189 號	T:57707015 F:57707017
067	蘇州工業園區仲恒衡器有限公司	蘇州工業園區東環南路 31 號	T:67424833 F:67268603

068	逐鹿系統集成(蘇州)有限公司	蘇州新區獅山路 98 號	T:68251233 F:68095809
069	商亮電腦科技(蘇州)有限公司	新區濱河路 125 號創業大廈 5505 室	T:68082461 F:68082460
070	精雲電腦(崑山)有限公司	出口加工區 24 號廠房	T:57376288 F:57376695
071	崑山雙葉軟件科技有限公司	長江南路留學人員創業園 200 室	T:57308828 F:57375869
072	上海寶進汽車銷售有限公司崑山分公司	開發區朝陽中路 58 號	T:57370432 F:57372107
073	雙鴻電子科技工業(崑山)有限公司	出口加工區中央大道 46 號	T:57708080 F:57701177
074	崑山厚聲電子公司	開發區夏駕北路 21 號	T:57631411 F:57631431
075	嘉聯益電子(崑山)有限公司	開發區配套區金沙江南路	T:57718998 F:57712898
076	合正電子科技有限公司	開發區盛希路 18 號	T:57635605 F:57635605
077	亞伯電子(崑山)有限公司	開發區前進中路 48 號 D 棟 101 室	T:57636690 F:57318809
078	崑山尙亦精密機械有限公司	開發區昆嘉路 475 號	T:57636171 F:57636757
079	瑞芳電子(崑山)有限公司	開發區西部配套區	T:57802718 F:57802738
080	智威電子(崑山)有限公司	開發區昆嘉路 425 號	T:57637188 F:57637100
081	崑山佑興塑膠科技有限公司	昆嘉路 488 號	T:57637688 F:57636641
082	旭東機械(崑山)有限公司	陸家鎮金陽路 6 號	T:57672699 F:57671878
083	富泰淨化科技(崑山)有限公司	開發區東路工業區(金陽東路)	T:57787949 F:57771811
084	天宇通訊科技(崑山)有限公司	陸家鎮孔巷東路 15 號	T:57670088 F:57670188
085	崑山大田汽配有限公司	開發區東部工業區春江路 18 號	T:57873596 F:57873599
086	柏承電子(崑山)有限公司	陸家鎮珠竹路北側合誼路口	T:57876868 F:57876866
087	崑山精華鋁業有限公司	東部工業區金珠路 28 號	T:57873888 F:57873999
088	佳源機電工業(崑山)有限公司	陸家合豐開發區陸豐西路 125 號	T:57876685 F:57876676
089	越峰電子(崑山)有限公司	周市鎮長江北路 333 號	T:57665992 F:57664667
090	崑山元誠電子材料有限公司	蓬朗鎮耀馬路 28 號	T:57618151 F:57618170

091	濱中元川金屬製品(崑山)有限公司	蓬朗鎮昆嘉高科技工業園區	T:57619121 F:57619149
092	崑山鉅泰包裝材料有限公司	蓬朗鎮通銘路	T:57619879 F:57619869
093	崑山東利基電有限公司	玉山鎮開發區鹿城路 181 號	T:57512771 F:57512889
094	蘇州新新電子科技有限公司	玉山鎮江浦路 168 號	T:57510969 F:57510131
095	崑山正日電子有限公司	江浦路 1 號	T:57575501 F:57991128
096	瑋鋒電子材料(崑山)有限公司	巴城鎮巴城工業區	T:57658686 F:57658668
097	明德電器配件(崑山)有限公司	巴城鎮巴城工業區	T:57657188 F:57658088
098	台芝電子(崑山)有限公司	玉山鎮江浦路東側	T:57595577 F:57595578
099	崑山前鋒信息系統工程有限公司	潭子街 38 號	T:57595268 F:57595108
100	星寶電子科技(崑山)有限公司	正儀鎮馬鞍山西路	T:57801168 F:57896188
101	樺城電子(崑山)有限公司	正儀鎮君子亭路	T:57899888 F:57895678
102	崑山乙盛機械工業有限公司	紅峰西路 283 號	T:57573658 F:57575728
103	崑山科華光罩有限公司	震川東路 900 號	T:57900209 F:57704559
104	駿褶電子科技(崑山)有限公司	正儀鎮君子路 188 號	T:57899898 F:57899896
105	精勁電子科技(崑山)有限公司	玉山振經濟開發區民新路 189 號	T:57598800 F:57598811
106	銘振精密模具(崑山)有限公司	朝陽中路 57 號	T:57365899 F:57365897
107	全盛電機(崑山)有限公司	玉山鎮民新路 185 號	T:57590995 F:57590997
108	宏塑光電科技(崑山)有限公司	玉山鎮玉山開發區馬鞍山中路	T:57579268 F:57596031
109	崑山正樺電子有限公司	正儀鎮新城路 9 號	T:57598997 F:57898996
110	崑山威興電子有限公司	玉山開發區民新路 159 號	T:57573907 F:57573917
112	富士康(崑山)電腦接插件有限公司	玉山鎮北門路 999 號	T:57790998 F:57790836
113	鼎鑫電子有限公司	玉山鎮蕭林路與漢浦路首	T:57799168 F:57796383
114	盈勤塑膠電子(崑山)有限公司	玉山鎮市后街 131 號	T:57794588 F:57794788
115	好易通科技(崑山)有限公司	玉山區蕭林路 168 號	T:57780399 F:57797762

116	崑山定宏光電有限公司	玉山鎮北門路 281 號	T:57780268 F:57780278
117	崑山達鑫電子有限公司	玉山鎮高科技工業區	T:57797068 F:57796938
118	鍵祥電腦科技工程(崑山)有限公司	玉山鎮紫竹路 261 號	T:57786040 F:57786556
119	崑山聚達電子有限公司	開發區高科技工業園漢浦路	T:57775591 F:57775595
120	崑山市陞堡電腦有限公司	玉山鎮城北市后街 318 號	T:57770835 F:57781210
121	圓剛多媒體科技(崑山)有限公司	玉山鎮蕭林路 183 號 301 室	T:57780908 F:57780945
122	崑山柏捷電子有限公司	玉山鎮北門路 581 號	T:57781889 F:57781886
123	前瞻電子(崑山)有限公司	玉山鎮	T:57789799 F:57930611
124	崑山凌遠光電科技有限公司	玉山鎮高科技工業園區宴慶路 98 號	T:57780988 F:57780503
125	永茂電子(崑山)有限公司	玉山鎮高科技工業園區環慶路 98 號	T:57786800 F:57930596
126	淳華科技(崑山)有限公司	玉山鎮高科技工業園區漢浦路	T:57783296 F:57783295
127	慧通電腦維修中心	城北鎮同心村新村 39 號	T:57796633 F:57786090
128	博士門精密控濕(崑山)有限公司	玉山鎮花園路 1789 號	T:57782728 F:57782738
129	崑山佳均光電材料有限公司	玉山鎮青松路 8 號	T:57359889 F:57359989
130	凱達電子(崑山)有限公司	玉山鎮高科園凱達路 88 號	T:57772888 F:57772897
131	加百裕(崑山)電子有限公司	高科員漢浦路 1389 號	T:57517991 F:57579079
132	崑山勝格通訊科技有限公司	城北蕭林路 900 號	T:57772367 F:57772371
133	崑山宏邦科技訊息有限公司	富士康路 722 號	T:57775227 F:57775229
134	崑山力固機電工業有限公司	玉山鎮城北蕭林路 802 號	T:57772257 F:57772252
135	奇美特(崑山)電子科技有限公司	玉山鎮北門路西側	T:57773123 F:57773118
136	崑山市創勝自動化設備有限公司	玉山鎮城北北門路 56 號 4 樓	T:57777780 F:57779980
137	崑山驊盛電子有限公司	張浦鎮花園路 128 號	T:57446222 F:57446333
138	捷華機械(崑山)有限公司	張浦鎮新吳街 3 號	T:57358266 F:57446050

139	崑山鑫鐵隆機電工業有限公司	張浦鎮海虹路 88 號	T:57452390 F:57452093
140	崑山立泰電線電纜有限公司	張浦鎮花園路 668 號	T:57449970 F:57447677
141	良特電子(崑山)有限公司	張浦鎮東環路 12 號	T:57450690 F:57450691
142	六方精機科技(崑山)有限公司	張浦鎮新枝浦機場路南側 6 號	T:57448968 F:57441277
143	琨詰電子(崑山)有限公司	張浦鎮東環路 9 號	T:57448185 F:57448187
144	天揚電子(崑山)有限公司	張浦鎮南港衛群路 1 號	T:57426688 F:57426367
145	崑山五宜機械有限公司	張浦鎮南港管理區	T:57426906 F:57426907
146	崑山智聖精密鑄造有限公司	張浦鎮南港管理區富利路 1 號	T:57999132 F:57999133
147	崑山泛亞塑膠光電有限公司	張浦鎮南港機場路 306 號	T:57427288 F:57424999
148	崑山群智精密機械有限公司	張浦鎮新西路 1 號	T:57449980 F:57449337
149	仁仁電機有限公司	南港鎮增光路 1 號	T:57421126 F:57421354
150	崑山映興電子有限公司	張浦鎮陽光路 199 號	T:57425577 F:57425959
151	協禧微機電科技(崑山)有限公司	張浦鎮江豐南路側	T:57451123 F:57451146