

An Exploratory Study of the Effect of National Culture on Knowledge
Management Factors, Expectations and Practices:
A Cross-Cultural Analysis of Taiwanese and U.S. Perceptions

by

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Abstract

Knowledge management (KM) is an important part of international corporate strategy; however, there is a lack of empirical research on how KM is influenced by national culture. This study adds value to the understanding of the relationships between national culture and KM with a focus on Taiwan. The research question is: Are Taiwanese and U.S. knowledge workers' beliefs about the success factors, expectations and practices of knowledge management significantly different? Three hypotheses are formulated:

1. Taiwanese respondents' beliefs about the critical key elements of KM *are* significantly different from beliefs of U.S. respondents.
2. Taiwanese respondents' expectations about the benefits of KM *are* significantly different from expectations of U.S. respondents.
3. Taiwanese respondents' practices *are* significantly different from practices of U.S. respondents.

Statistical comparisons of perceptions on KM factors, expectations, and practices support all hypotheses in the study. In general, the KM beliefs, expectations, and practices of knowledge workers in Taiwan and the U.S. do differ significantly.

Additional analysis has provided some understanding of how the specific cultural traits of collectivism and Confucian Dynamism impact specific KM factors, expectations, and practices. The implications are that organizations from either country engaged in business, government, or educational objectives in the other country should adjust their implementations of KM practices to accommodate the differing perceptions of the people served.

Moreover, the Taiwanese knowledge workers agree more strongly with pro-KM statements than U.S. knowledge workers, suggesting that knowledge workers in Asian nations would respond even better to implementations of KM than U.S. knowledge workers. The difference in responsiveness is shown to be a result of their different national culture traits and values, particularly collectivism and Confucian Dynamism.

Asian workers have become knowledge workers because of the global transfer of technology and the increase in knowledge-based jobs. With the sustainable advantage of knowledge integration, Taiwanese organizations potentially can enhance their global competitiveness in the knowledge economy. Additionally, the collectivist culture of Taiwanese knowledge workers suggests that they would adopt new technology more readily and faster than their U.S. counterparts.

Dedication

This Dissertation is Dedicated to:

My Parents

Maw-Shiun Wang, Su-Mei Lin Wang

And

My Love

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Chapter 1

Introduction

*“Real value is created when we begin to discover the yin and yang of east and west, north and south in the knowledge economy.”
Banerjee and Richter, 2001, p.xi*

Knowledge management (KM) is defined as the way people “do things and how they might do them better.” (Davenport, 1998, p. x) In other words, it is the process of effectively and efficiently managing knowledge and using it wisely to solve problems in the quickest and best possible ways.

KM is a sub-discipline of management (Martin, 2000) and is intended to manage the human mind to improve performance (Davenport, 98, p. xi). KM facilitates the motivation of people’s thinking and behavior. Coordinating technology with KM improves the efficiency of all kinds of processes, especially those to increase productivity, as used in business.

The practice of KM is growing in global enterprises, yet the impact on national culture has not been fully explored or validated. A company’s attitudes and actions are influenced by the values and patterns of culture (Harris, 1991, p.23). KM can help competing and cooperating companies to bridge cultural gaps in order to effectively do business with people in other countries. To accomplish this goal requires knowing the relationship between KM and national culture and where the true value of each is created. Also required is to know the ways that organizations compete and cooperate across national borders, and to combine expertise to obtain full benefits from opportunities in

the knowledge economy. These would help one to take advantage of the merit that cultures attribute to competition and cooperation with foreign countries that may have unfamiliar value systems (Banerjee and Richter, 2001, p. x).

The overall culture, which is at the national level, affects values and practices of every entity at all lower levels of analysis. In particular, it affects the values and practices of individual and business groups. Therefore, the relation between national culture and KM involves issues important to individuals as well as to businesses and nations in the global economy (Banerjee and Richter, 2001, p.12).

These relationships were investigated by comparing views on the intersection of KM and national culture in Taiwan and the U.S. This study compares Taiwan and the U.S. by using Hofstede's model and statistical data collected; and, the surveyed differences between the two countries' KM and national cultures are analyzed.

According to Ernst (2000), "Only [a] large, diversified multinational enterprise can compete in industries that combine high knowledge-intensity and a high degree of internationalization." However, the experience of a nation that is not so large, such as Taiwan, tells something different. "Taiwan's economic miracle is a remarkable story, almost without parallel in the post-war world." (Long, 1991, p.75) Taiwan's economy in part "can be attributed to the congruence of Taiwanese cultural traditions with the rapid rates of economic growth known since the 1950s." (Long, 1991, p. 87)

Taiwan is a strikingly successful case of development for China (Mellor, 2001).

Although there are some political conflicts between Taiwan and China about the issue of

reunification of Taiwan Republic of China (ROC) and the People's Republic of China (PRC, Mainland China), businessmen reunite more readily than politicians do by their investments into and cooperation with Chinese businesses. Taiwanese businessmen also have 'inside knowledge' about Chinese businesses and customs, so they have an advantage over other nations in their abilities to serve the Chinese (PRC) market. The improving relations between Taiwan and China will boost the welfare of all stakeholders including individuals, businesses and, most importantly, nations. (For example, U.S. firms can benefit from those Taiwanese connections when dealing with China.) "From a purely economic viewpoint, there are plenty of opportunities for trade and investment between Taiwan and China." (Chen and Chang, 2000, edited by Chiou and Liew, p.179) Taiwanese investments have rapidly expanded to cover the entire coast of China and some part of the interior (Leng, 1996, p.115). From the turn of the twenty-first century, Taiwan and Mainland China have begun plans for closer economic relations and to deliver more mutual economic rewards.

Some researchers are interested in culture and the economic development that took place in the 1960s (Adelman and Morris, 1967; Higgins, 1968); others are interested in the role of national culture and the economic development that emerged in the 1990s (Franke, Hofstede and Bond, 1991; van den Bosch and van Prooijen, 1992; Yeh and Lawrence, 1995). Hofstede's work, Culture's Consequences: International Differences in Work-Related Values (1980), shows that he is among those interested in national culture.

Although researchers are embroiled in a debate over the reliability of Hofstede's work about national culture and its relationship to nations' economic performance (Yeh and

Lawrence, 1995), his work is still the most often cited. His valuable research has contributed to the understanding of national culture and international management.

Initiative

Before I came to the U.S. for graduate study, I was a purchasing assistant in Taiwan. During a research trip in Korea and Japan with a group from a business consulting company (Elite Management Consulting Company, Taipei, Taiwan), the management methods of the various companies were impressive. After each host company's presentation about the small group management meetings it held to discuss improvements in productivity in its own business, we toured the host company's facilities to see the production processes. Some of the host firms included: Sempio Food Company, Nissan Motor Co. Ltd., Panasonic Electronic Industrial Co. Ltd., Daiwa House Industry Co. Ltd., and Kikkoman Corporation.

The main purpose of the trip was to learn the 'know-how' of quality circles (which are a teams of people who meet regularly to discuss quality related work problems so that they may examine and generate solutions to these). The circle is empowered to improve the quality and quantity of their products. Specifically, we were exposed to how their best practices in total quality control (TQC) and small team knowledge sharing improved the overall performance of the enterprise. As mentioned in Takeuchi and Nonaka's The Knowledge-Creating Company, a business organization does not merely process knowledge but creates it as well (1995, p. viii). In Taiwan, at that time (and even now), businesses needed to learn better ways of processing and creating knowledge to maintain their international competition. Taiwanese firms were learning how to create their own

knowledge, to innovate continuously and to leverage their knowledge for competitive advantage.

Taiwan is a small island with few natural resources, so any additional knowledge provides an advantage—this is necessary for Taiwanese firms to compete with large foreign companies. Because Taiwan imports almost all of its raw materials from overseas, the best way for firms in Taiwan to compete with foreign multinationals is to maintain high efficiency, to practice sound methods of manufacturing and management, and to continually improve their methods. Lessons learned from these overseas firms could help Taiwanese businesses (and Taiwan overall) to maintain and create their competitive edge by shortening the learning curve and promoting improvements in the quality of training and manpower. These practices, accompanied with a good knowledge base (and the continued improvement of it), would help Taiwan innovate and produce products quickly without sacrificing quality. This could help Taiwan expand its markets in the global economy.

The trip provided my fellow researchers and me with additional knowledge on how Japanese and Korean manufacturers were efficiently lowering costs and maximizing output and profit. It also inspired me to understand continuous and incremental knowledge improvement, which is part of KM now. How national culture (NC) impacts KM at the decision making level is even more interesting than KM at the level of organizations. National culture is the root characteristic of the individual person and it influences the two kinds of knowledge that the individual holds: explicit and tacit knowledge.

Explicit knowledge is formalized or codified knowledge and can be easily and formally transmitted between individuals, e.g., any kind of documented knowledge. Tacit knowledge is the complement; it is non-formalized or non-codified knowledge. It is also considered to be much more important than explicit knowledge (Takeuchi and Nonaka, 1995, viii). Knowledge is embedded in each individual's experience and involves intangible factors such as personal beliefs, perspectives, and values, all of which are reflected in their strategic decisions. National culture is a critical component of collective human behavior and an important source of competitiveness for the individual or group that holds it (Takeuchi and Nonaka, 1995, ix).

The following sections briefly explore knowledge, globalization, and national culture as a theoretical domain for this research.

Knowledge Economy and Globalization

Many scholars and practitioners espouse the belief that the world has entered a new phase of social development: the knowledge economy. Many attribute this shift to “[the move of] the main source of wealth in market economies ... [away] from natural assets, through tangible created assets [towards] intangible created assets. ... As the core competencies of firms become more knowledge-intensive, the use of those assets is becoming a more critical competitive advantage.” (Dunning, 2000)

Our current knowledge is based on past knowledge, and the knowledge belonging to each different culture has its own distinct historical development—specific regions have their

own particular knowledge. Knowledge is a tool for social activities and provides upward mobility in terms of social status.

“Knowledge has become an important topic of research in international business in the context of the multinational enterprise.” (Kogut and Zander, 1995; Love, 1995; Grant and Baden-Fuller, 1995; McFetridge, 1995; Carla C. J.M. Miller, Robert M. Grant, and Chong Ju Choi. 2000) The increasing changes currently seen in the world’s economies present challenges to business enterprises. In recent years, companies have been using knowledge as a strategic weapon and so have intensified their competition within and across national borders (Beschoner, Lang and Russ, p.74, edited by Banerjee and Richter, 2001).

Kelly (1998) describes the three distinguishing characteristics of the new economy as being global, as favoring intangible things (i.e., ideas, information, knowledge), and as being intricately interwoven. The way to handle those characteristics is to use “knowledge management as a powerful enabler of success in the future economy” (Bahra, 2001, p.198) and create values anywhere, anytime for now and for the future.

“Globalization is driven by the firms that are seeking out new markets and new sources of competitiveness. Globalization has drastically reduced the cost of transporting not just material goods but also information across geographic space.” (Dunning, 2000, p.77) In addition, “The theory of the MNEs [multi-national enterprises] has long viewed value creation through the exploitation of technology and other knowledge-based assets as central to the processes through which international firms create value.” (Miller, 2000, p.102)

These forces of globalization and knowledge transfer are creating new challenges for firms. External forces, including new work force demographics, quality expectations, productivity, customer satisfaction, and new technologies affect the operating environment in organizations worldwide. Internal forces, like financial constraints, requirements to do more with less, cross-functional teams, and empowered workers, affect organizations' abilities to compete in the global marketplace (APQC, 1997).

“[The] market and product demands are changing faster than ever: customers are demanding greater product choice and customization; product life cycles are getting shorter and shorter; market boundaries are rapidly shifting; demands for globalization and technological innovation are becoming the rule, not the exception.” (Boynton, 1993, p.59) In order to keep pace with this radical change, firms are finding new ways to build and deliver high-quality, customized goods and services to market quickly, while at the same time keeping costs down (Boynton, 1993. p.59). This is knowledge management.

Competencies like these have to be learned and accumulated over time and improved continuously (Tidd, 2000, p.295); a firm needs to employ the methods, skills, and all aspects of KM to manage an increased amount of knowledge. Because global business is so competitive, corporations must use the knowledge that they have and can gain to lower costs, to exploit market capacity, and to innovate products. “The competencies required to handle the complexities of global business include broad training, multicultural competence and sensitivity, integrity and ethical values, flexibility and responsiveness, communications and interpersonal skills, command of information systems and technology, and fluency in key languages.” (Vieira, 2001)

The strategic value of collective knowledge is widely accepted by practitioners and scholars, especially those mentioned throughout this study. Bennis said, “None of us is as smart as all of us.” (Bennis, 1997) KM networks the intangible assets of the individuals’ and groups’ tacit and explicit knowledge and then enables leverage of that knowledge with the help of technology in order to enhance the competitive edge and/or to improve human welfare. In business, the future of the market of all products and services is full of uncertainty, and this uncertainty amplifies the value of these intangible assets (Banerjee and Richter, 2001, p.6).

One needs to manage both the tangible, codified knowledge and the intangible, non-codified knowledge and must be able to assign measures of quality to each kind of knowledge assets within these two groups. According to Raeside and Walker (2001, p.159), “Knowledge will become ... the key differentiator between successful enterprises and those that fail in the early part of the twenty-first century.”

In the new economy, the best competitive advantage a company can have is to learn faster than its competitors (Bahra, 2001, p.231). Competitive advantage comes from the strength of each firm’s particular profile of competencies within its marketplace. This set of competencies determines what makes that company’s products or services stand out from those of its competition (Barnatt, 1996, p.17). Each of these competencies derives from the knowledge base of the firm. “Achieving an advantage in knowledge means a direct gain in competitive advantage.” (Beschoner, Lang and Russ; edited by Banerjee and Richter, 2001, p.77)

Moreover, adding to the complexity of the global economy is the situation that “The world is full of confrontations between people, groups and nations who think, feel, and act differently.” (Hofstede, 1991, p.3-4) These confrontations can become problems, and may not stop at national or regional borders. Therefore, it is important to seek understanding of the differences between people in order to minimize such problems. This understanding is a critical prerequisite for bringing about worldwide solutions (Hofstede, 1991). In other words, the world is a practical laboratory for intercultural cooperation (Hofstede, 1991, p.239). When a company enters another culture, it adapts its competencies to accommodate that culture to promote customer and employee relations and to minimize potential problems.

The Role of National Culture in Global Economy

The risk of not succeeding in the market of a new country is almost inevitable for MNEs (Wu, 2001). “Global competition requires firms and their members to continually work with and learn from people worldwide.” (Joynt, 1996, p.27) Therefore, as more and more organizations extend across national borders, people of every culture need to broaden their views on foreign markets, and more importantly, on other national cultures.

Culture is defined as “collective programming of the mind” by Hofstede (1984). Culture affects “the way people think and learn” (Harris, 1991), is internalized in the human mind, and “involves how people organize and process information.” (Harris, 1991) “[Culture] not only affects our daily practices; ...it also affects the theories we are able to develop to explain our practices.” (Hofstede, 1988) “Socially, the individual is a system [himself] and is a subsystem of larger social systems.” (Lawrence, 1972) The individual

and the organization of which he is a member both can be seen as interrelated parts of a big system-culture. “Culture, as the ‘shared understanding of meaning’, is the core of stability in societal organizations. ... A person’s nationality is a sufficient indicator of [his] culture, ... culture is the norm of that nationality.” (Joynt, 1996, p.33)

The development and use of knowledge depend on person-to-person contacts to promote quality improvements and bring them through to fruition, and they contribute to the building of KM that links people and profit together in the global village. “Every civilization develops people to become knowledgeable, however, [it is] how this knowledge is used [that] is important.” (Bahra, 2001) “[Management quality] depends on the qualities of the people to be managed. [This] begs the question of how an entire nation can collectively produce better management than another nation ... for the real explanation we must turn to the domain of culture.” (Hofstede, 1988)

Hsing asks, “If the production network is socially embedded and territorially grounded, what happens when the network expands from one territory to another? Under which conditions will investors from outside the region be able to establish effective social and business networks in the new territory? What kind of network will that be? And, how do we connect the question of border-crossing networks with that of transnational capital flows?” (Smart, 2000) The answer is to establish and manage good relationships across different cultures (Joynt, 1996) in order to secure long-term business success in the global economy. In other words, culture matters. You need to understand your customer, especially when running a business across borders. In addition, employees at all levels in

[such] organizations need to communicate with colleagues as well as customers in different countries (Joynt, 1996, p.34).

National culture is the foundation of any kind of development, not only of knowledge but also for business in general. (Beschoner, Lang and Jochen Russ, edited by Banerjee and Richter, 2001, p.85) Because “cultural values affect the practices and theories of organizations” (Hofstede 1991, p.239), it is most important to adjust business structures to the local (business) environment in order to match the surrounding culture.”

(Beschoner, Lang and Jochen Russ, edited by Banerjee and Richter, 2001, p.85)

Management controls that are effective in one national setting may have different levels of effectiveness if used elsewhere (Chow, 1999). Innovation and knowledge creation processes are embedded in the society and bonded to its culture. Corporations’ practices and activities should be transformed into general practices that can accommodate everyone concerned (Banerjee and Richter, 2001, p.11).

So, national culture profoundly impacts organizational management and KM in particular. National culture affects the methodologies of organizations and the people within them and the organizations’ overall philosophies, but differences in national cultures can put up barriers to the transfer of knowledge (Banerjee and Richter, 2001, p.13). For example, an employee from one nation may have difficulty in effectively conveying information in a conversation to another employee in different nation because of preconceptions or assumed understandings that each forms on the basis of his own local culture.

The following sections explore the background economic environment of Asia and Taiwan and the role of national culture.

Asian Economy and Chinese Culture

Lasserre and Probert (1992) said that western executives confront the fact that attitudes and behaviors of their business partners in the Asia Pacific region are fundamentally different from their own expectations. Recognizing these differences, some authors suggest that East Asia will increase in economic importance in the years ahead (Kong-Yam Tan and Chow-Hou Wee, 1995), and others suggests that East Asia will likely continue to grow in factors of both production advantage and of market potential (Turcq, 1995). According to those authors, it is important that all the stakeholders (i.e., practitioners, policy-makers, scholars, and others) understand how the growth will occur and the trend will be (Davis and Schulte, 1997, p.1).

Asian economics have experienced great change and uncertainty and, in cases, have collapsed to some extent (Banerjee and Richter, 2001, p.2). However, some nations recovered more easily because of solid economic foundations. (Banerjee and Richter, 2001, p.2). Overall economic recovery and technological strength vary by individual countries (Yoshida, 2001). Taiwan, Hong Kong, China, and Korea have been growing rapidly while others like Indonesia and the Philippines still struggle (Yoshida, 2001). Not only do all Chinese people play a very important role in the economic development of the little dragons (i.e., Taiwan, Hong Kong, Singapore and Korea), and in the big dragon of Mainland China, but they also play an important role in the economies of other

countries, such as Indonesia, Malaysia, the Philippines, and Thailand, even though they are an ethnic minority there (Hofstede, 1993).

All of the “Asia-Pacific region ... recognizes the importance of new technology and innovation as one of the most critical factors to sustaining future economic growth” (Yoshida, 2001). This recognition came about over the past several decades during a remarkable economic transformation in East and South-East Asia. All of the Asian economies share a common vision of continued success. “Their continued success as leading commercial and manufacturing centers in a global knowledge-based economy depends on their ability to harness science and technology and, importantly, their people’s capability for innovation.” (Yoshida, 2001) Asian countries like Japan, Korea, Singapore, and Taiwan are “taking full advantage of their full access to the global economy and to scientific advances wrought by advances in information technology (Yoshida, 2001).

Those four little dragons have all been influenced by the teaching of Confucius and have shared a common culture of “hard work, thrift, perseverance, hierarchical ordering of relationships and scholarship.” (Hofstede and Bond, 1988; Joynt and Warner, 1996) “The three main driving forces behind Asia are prevalent education, a high-quality labor force and fast regional integration.” (Chow and Chow, 1997, p.21)

The nations of East Asia have succeeded in increasing their standards of living over the long term. This makes them a model for other emerging nations in the world. In addition, their successes could serve as examples of effective management principles and public

policies regarding the industrialized world. These successes have been important in the recent explosion of the Chinese economy.

“Knowledge is driving the pace and scope of globalization faster and wider than ever before, and therefore, [Asia’s] economic success” depends on its “ability to take full advantage of and contribute to global science and technology advances.” (Yoshida, 2001) In order to keep up with such rapid changes in all-desirable directions, Asian countries need new ways to interpret the big economic transformations that have occurred. So they need to use KM in collecting, leveraging, and transferring their knowledge assets within or out of the country in order to gain competitive advantage. KM will not only work to enrich the capabilities of MNEs that venture in Asian countries but it also will enable “cultural understanding among peoples around the world.” (Chow and Chow, 1997, p.128)

Taiwan’s Profile

Taiwan is a small island located in the western Pacific, just southeast of China. Its formal title is the Taiwan, Republic of China (ROC) or the Republic of China on Taiwan (Copper, 1999; Maguire, 1998). Taiwan, with an area of 13,814 square miles, is about the same size as Holland or as the combination of three U.S. states—Massachusetts, Rhode Island, and Connecticut (Copper, 1999, p.2). With a population of 22 million, Taiwan is the most densely populated country in the world (Copper, 1999, p.7). Though Taiwan has very few natural resources, it has “achieved an astonishing record of economic growth since 1950.” (Maguire, 1998, p. 49) The educational levels in Taiwan are rated very highly (Copper, 1999, p. 75-79). In short, “Taiwan has almost no natural

resources and a very unfavorable land-to-population ratio. Its only resource of any importance is its human talent.” (Copper, 1999, p. 143)

Economic Achievements

Despite its small population and limited size, Taiwan is now the world’s 17th largest economy and the 14th largest trading nation. Taiwan is undergoing transition from a high tech manufacturing economy to a high tech services economy. In 1991, manufacturing accounted for 41 percent of Taiwan’s gross domestic product (GDP), and it has dropped to 31 percent in 2003. In 1991, services accounted for 55 percent, and it went up to 67 percent (special advertising section in a 2003 magazine—unknown source). “Taiwan’s business tended to be relatively smaller in scale and this relates to historical, political and ethical backgrounds.” (Freeman, 2001) Even so, Taiwan ranked as 20th GDP richest country in the world and 22nd highest globally in average personal income (McBeath, 1998, p. 246). Taiwan also ranks as 15th in the world in terms of research and development (R&D) expenditures (Yoshida, 2001). The following table is a summary:

Table 1.1
Taiwan Economic Statistics

Category	Rank
Largest economy	17 th
Largest Trading Nation	14 th
GDP richest country	20 th
R & D Expenditures	15 th
Service Industry	60%

In addition to the above rankings, the following is a statistical table provided by Taiwan's government. It compares Taiwan with China from various sources.

Table 1.2
Statistical Comparison of Taiwan's and China's
Economies (year 2001)

	Taiwan	China
Land Area	13,969 Square Miles ¹	3,706,566 Square Miles ²
Population	22.42 Million ¹	1.27 Billion ²
Per Capita GNP	US \$ 12,876 ¹	US \$ 840 ²
Foreign Trade	US \$ 230.1 Billion ¹	US \$ 509.8 Billion ²
Foreign Exchange Reserves	US \$ 132.9 Billion ¹	US \$ 233.8 Billion ²
Foreign Debt	US \$ 34.3 Billion ¹	US \$ 170.1 Billion ²
Global Growth Competitiveness	7 th / 75 ³	39 th / 75 ³
Investment Climate	5 th / 50 ⁴	21 st / 50 ⁴

¹ ROC Statistics

² PRC Statistics

³ World Economic Forum

⁴ Business Environment Risk Intelligence (BERI)

Bond and Hofstede quote Kahn's 1979 suggestion that it is the common cultural heritage of Confucianism that is the reason for Chinese economic success (Bond, Hofstede, 1989).

"Taiwan has close historical and cultural ties with Mainland China" (Simon and Kau, 1991, p.71), and "the Chinese cultural values that have proven their worth in predicting economic growth." (Bond; Hofstede, 1989) "Growing economic links between China, Hong Kong and Taiwan may eventually reshape East Asia." (The China Business Review, Engholm, 1994, p.1)

Taiwanese firms' "competitive advantages are obtained from having their people management capabilities built on core cultural value of flexibility, that willingness to act

to maximize the benefits derived from altered conditions.” (Tsang, 1999) This flexibility enhances their people management capabilities, and it facilitates their international competition with lower cost structures (Tsang, 1999). This value can be seen in their attitude towards social stature, and they “accept upward mobility as a result of one’s talent and capability.” (Tsang, 1999)

“Manufacturing has long been Taiwan's strong suit, and it still is. The country's workforce is well trained and well educated, which lends itself to [explain why there is] the surge in information-technology companies that are locating there.” (Orton, 2001) “Taiwan today has the most broadly based computer industry in Asia outside of Japan.” (Ernst, 2000, p.223) It is a world leader in information technology industries behind only the United States and Japan (Yoshida, 2001). Taiwan’s other leading industries include the manufacture of precision machinery and specialty chemicals (Yoshida, 2001).

Chinese do business ‘the Chinese way’, according to successful traditional practices, even when they are educated abroad. This system originates in the history of Chinese society, having been guided by the general principle of Confucian virtue (Hofstede, 1993). Chinese business outside of Mainland China has created a collective GNP of 200 to 300 billion dollars (U.S.) (Hofstede, 1993). “There is no denying that it [the Chinese way] works.” (Hofstede, 1993)

Taiwan has become increasingly integrated into the world economy and has been seeking to become better integrated into world organizations, such as the World Trade Organization (WTO) and the United Nations (UN), so that it may enhance its prestige and better defend its economy (Ferdinand, 1996, p. 107). Taiwan secured its membership

in the WTO on Nov. 11, 2001, which “will provide a freer and more open market for goods and services as well as a fair and transparent trade and economic environment for other members.” (Lin, 2001) Furthermore, Taiwan still wants to join the UN in the future.

Taiwan’s miraculous economic success (Copper, 1999, p.140) now is expanding into the global economy through efforts of its government and business (Long, 1991, p.75) into Southeast Asia, China, and worldwide. Taiwan is usually considered a good model for developing Third World countries (Copper, 1999, p.153). It is Taiwan’s culture that is the foundation for Taiwan’s success stories; and that culture has its roots in its own basic tradition and in Chinese tradition (Copper, 1999).

Gateway to China and Southeast Asia

Taiwanese, being Chinese, have the network of overseas Chinese (Chinese people who are in countries outside mainland China) in East Asia that has facilitated access for Taiwanese business in Southeast Asia and Mainland China. Entry into these two markets provides huge opportunities. Because access to these two markets benefits Taiwanese businesses, many foreign multi-national corporations (MNCs) also want to use Taiwan as a gateway or regional operations center to service the PRC market (Maguire, 1998, p. 80), which will be the biggest market in the future and which is in Southeast Asia.

China’s huge development and infrastructure needs can provide enormous export and investment opportunities for U.S. companies (Weidenbaum, 2000). Taiwanese (and

Chinese communities elsewhere) have brought with them much of the money and managerial skills that have been so essential to the economic success of China, especially in moving towards a modern capitalist economy (Weidenbaum, 2000). Taiwanese companies have been so successful in Mainland China that Taiwan is becoming the interface between China and those foreign businesses who want to manufacture in China but lack the expertise or infrastructure (Norman, 2001). “[Taiwanese businesses] can provide contacts and strategic advice that may greatly facilitate the entrance of Western companies into the PRC.” (Weisert, 2001) “Taiwanese owned or managed companies now [in 2001] account for nearly two-thirds of China’s IT [Information Technology] exports.” (Norman, 2001).

Taiwan provides China entrepreneurial and business skills enhanced by substantial flows of capital—over \$40 billion to date (Weidenbaum, 2000). Michael Ding, President of International Investment Trust Co., one of Taiwan’s largest fund-management companies, said that this direct link would help companies cut down costs and “enable them to participate more fully in China’s growth, which is expected to top 7% [in 2001 and 2002].” (Pao, 2001) The Taiwanese businessman recognizes that China is where the future lies; he needs the economic resources that Mainland China can offer—cheap land, labor, and a vast potential market. (Pao, 2001)

“Taiwan’s geographical location makes it a natural springboard for Southeast Asia and for most market destinations in the western Pacific Rim. Most of Southeast Asia is no more than four or five hours by air from Taipei.” (Orton, 2001) Almost all Asian countries’ cultures are influenced by Chinese culture and they are “deeply rooted in

Confucianism.” (Beschoner, Lang and Jochen Russ, edited by Banerjee and Richter, 2001, p. 85) Countries such as Korea, Japan, Vietnam, and Singapore have been influenced by the Chinese culture for thousands of years. Confucian values have proven their worth in growing economies (Bond, 1989).

Management Implications in Asia Regarding Knowledge Workers

The following are recommendations to management that can be drawn regarding the growth of knowledge workers in Asia. Bureaucratic management must not stifle innovation.

There are several things that managers can do to recognize and support workers' needs for personal growth. They should: ensure that communication is open and free, encourage and reward knowledge sharing, encourage better communication between workers, and change their leadership style from bureaucratic to collegial and supportive. Managers should encourage learning from mistakes more so than punishing errors, and they should reward risk-taking and initiative. They should build on extensive social, professional, personal, and community networks which are already in place in Asian culture (EIU Report, 1998, pp. 63-66).

In addition, investments for KM should be encouraged. Some suggestions include the following: Investments should be made in infrastructure to support, capture, and leverage knowledge of individuals and teams; KM systems must be allowed to evolve; and, building a KM system is not a unique one-time activity since the needs of the knowledge worker and the content of knowledge work are constantly changing.

The above trends and implications for KM in Asia add to previous discussions regarding the understanding of KM in the international arena.

Knowledge Worker Trends and Implications for Asia and Taiwan

The following section provides a brief summary of worldwide knowledge worker characteristics, knowledge work trends, general traits of the knowledge worker, knowledge work best practices, global KM challenges, the Asian challenge, conclusions about growth in knowledge workers in Asia, management implications for growth in knowledge workers in Asia, and investment implications for growth in knowledge workers in Asia and Taiwan. The following Tables 6.1, 6.2, 6.3, 6.4, and 6.5 provide abbreviated summaries of these trends. For a more detailed explanation, refer to the report drafted by the Economist Intelligence Unit (EIU) and Anderson Consulting (1998).

Table 1.3
Knowledge Worker Characteristics
 (Anderson Consulting/EIU Report 1998, p. 16)

Knowledge Work Factors:	Requirements of Organizations:	Implications for Leaders:
Complexity, Uncertainty, Ambiguous, Unstructured, Difficult to observe and measure, and High risk	Individuals with high pattern recognition skills, flexibility and tolerance for ambiguity Teams that can collectively make sense of issues and problems	Organizations that develop knowledge worker novices into experts, rapidly build effective virtual teams, build a culture of improvisation and balance creativity with risk management

Table 1.4
 Traits of the Knowledge Worker
 (Anderson Consulting/EIU Report 1998)

Knowledge workers are in high demand.
Retaining knowledge workers in a tight labor market requires ingenuity and empathy.
Promotion prospects and intrinsic rewards lead to job satisfaction.
Knowledge workers need interesting work to remain motivated.
Professional advancement has different meanings for different workers.
Retaining knowledge workers requires building emotional bonds.
Involvement in decision-making is only desired if it impacts the knowledge worker's specific responsibilities.
Management must learn to lay down the ground rules and then get out of the way.
Knowledge workers derive satisfaction through team dynamics.
Organizations are wise to foster team cohesion.
Managers must proactively build loyalty to the organization.

Table 1.5
 Knowledge Work Trends
 (Anderson Consulting/EIU Report 1998)

Information and data processing capabilities are multiplying daily.
A new knowledge work-friendly management is required.
Knowledge workers are the key to high value-added creativity.
Identifying and managing knowledge workers remains an elusive task.
Knowledge workers require new management and support systems.
Technology has created the age of the knowledge worker.
Globalization accelerates the trend toward knowledge work.
Knowledge and innovation drive long-term growth.
Re-evaluating a company's assets (tangible and intangible)
Devising new ways to measure and grow intellectual capital
Knowledge is now recognized as a critical success factor.
Technological systems are not enough to guarantee knowledge sharing.
Knowledge workers defy conventional categorization.
Knowledge work incorporates complexity and uncertainty.
Working in independent teams is growing and increases complexity.

Table 1.6
 Knowledge Work Best Practices
 (Anderson Consulting/EIU Report 1998)

Knowledge work is organized around logic of improvisation.
Embracing uncertainty creates room for innovation.
Management by control stifles knowledge worker productivity.
Organizations must strike a balance between risk management and workers autonomy.
Too much control must be balanced with free reign and creativity.
Knowledge workers combine analysis with intuition.
Communication within independent teams must be actively encouraged.
Team building requires flexible approaches to structure and management when managing knowledge workers.
Traditional models do not apply.

Table 1.7
 Global Knowledge Management Challenges
 (EIU Report, p. 38-39)

How to cultivate individuals' skill sets so they are able to cope with uncertainty
Building interdependent knowledge teams
Building high trust and high discretion into work roles and relationships
Balancing autonomy with appropriate control mechanisms
Aligning HR systems with knowledge-work demands
Integrating knowledge teams and their knowledge into the wider organization and managing tensions that arise from operating different support systems for different niche workforces.

The Asian Challenge

According to a number of sources (EIU, CSPAN news reports), knowledge workers are a growing proportion of workers in Asia. Many technology jobs are being exported to Asia.

“Companies are now realizing that their knowledge workers are the key to growth through innovation and constant adaptability. Successful change lies squarely in the hands of managers – it is their job to foster the high trust and commitment needed to establish and maintain flexibility. Those

visionary enough to adapt and evolve will emerge as the growth engines of an Asian recovery.” (EIU report, 1998, p. 67)

Taiwan is Now a Knowledge-Based Economy

The technology brought to Taiwan by foreign business for manufacturing has been critical to its economic progress, and Taiwanese business has been excellent in absorbing, adopting, and innovating foreign technologies (Simon, 1991, p.131). This is one way Taiwan increases knowledge resources as a country. Not only does Taiwan “see a technology-dominated future for itself, [but it also pushes] new programs and reforms to ensure its continued success in the global knowledge-based economy.” (Yoshida, 2001)

In August 2000, the Taiwanese cabinet adopted a plan that identified major issues associated with the global knowledge-based economy for developing new strategies and programs. “The plan represented another step forward for Taiwan in strengthening its science and technology.” (Yoshida, 2001) The plan continues with its objectives being to develop:

- an innovation mechanism to support venture enterprises,
- an Internet application infrastructure,
- the application of information and communication technologies to daily life,
- the workforce and training programs,
- a customer- and service-oriented government, and
- reduced social and economic costs.

Additionally, “the government has declared a set of clear goals: developing Taiwan as a ‘green [environmentally safe] silicon island,’ establishing a technology research and development center, and getting high-tech companies to keep their roots in Taiwan.” (Commercial Times, November 20, 2001)

The 'Challenge 2008', a Taiwanese government program with funding equivalent to \$75 billion, is aimed to increase global competitiveness by introducing professionals, technology, resources, and systems as the enforcement to the foundations for Taiwan's manufacturing industry. So, businesses will be able to maintain their international lead in the highest technology standards, and Taiwan should advance in core technologies and R&D capabilities.

In fact, “the government will encourage national R&D expenditures to reach 3 percent of the GDP in 6 years, making Taiwan the ideal Asian base for research, development, and innovation”, turning Taiwan into a 'green silicon island'. (Government Information Office (GIO), Executive Yuan, Taiwan, R.O.C.)

Several internationally renowned companies have already expressed their interest in setting up R&D centers in Taiwan. According to the Ministry of Economic Affairs (MOEA), many MNCs like Apple, Compaq, Dell, Gateway, HP, IBM, Intel, Microsoft, Motorola, RadioShack, Solectron, Sony, and Philips are setting up or are interested in setting up R&D centers of excellence; and, they are increasing the purchase of IT products in Taiwan. (Asia Times, 2/8/2002; DocMemory, 2002)

Conclusion and Expected Contribution

As exponential developments in information technology and telecommunications advance and shrink the world, one's understanding of others must not lag behind. Research on KM and national culture could enhance the understanding of local and regional cultures. Moreover, all stakeholders (i.e., scholars, executives, policy-makers, and students) should share cultural information "to reduce the uncertainty and fear of the unknown" in international markets. (Davis and Schulte, 1997, p. xxiii)

Chapter 2

Literature Review

*“In an economy where the only certainty is uncertainty, the one sure source of lasting competitive advantage is knowledge”
Takeuchi Nonaka, 1998, p.21*

According to Barkema, Bell, and Pennings (1996), “national culture plays an important role in the learning curve and international experience of firms.” The results of their study show that expanding firms can shorten the learning curve if they can adapt previous experiences in the same country and in other countries of the same cultural block (Davis and Schulte, 1997, p. xv).

The following literature review presents relevant research on KM, national culture, and management in Asia. The primary domain of this study is depicted in Figure 2.1.

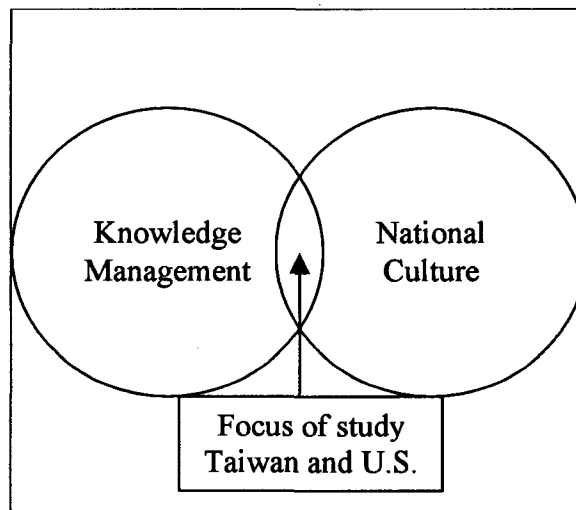


Figure 2.1
Domain of Research

Knowledge Management

Economic success largely depends on how successfully the firm taps into human knowledge (intellectual capital) and how they systematically share it within the firm and across the national border (Woods, 2001). Individuals make up the core of knowledge but “no one person has absolute knowledge.” (Bahra, 2001) To manage people requires managing their knowledge: systematic integration and leveraging of that knowledge will enable better achievements, and faster and more innovative services and products. In the knowledge-based economy, KM is a primary competitive advantage; in the world of the knowledge economy, the only real advantage comes from managing more quickly and efficiently than your competitors.

Much work has been done on understanding the important dimensions of KM, including leadership, organization, learning, technology, organizational culture, and others (Stankosky, 1997; Calabrese, 2000; Bixler, 2000, Ribiere, 2001). However, there is a lack of empirical research on the impact of the individual’s national culture on KM beliefs, expectations, and practices. So there remains a need for significant and conceptual empirical assessments on the relationship between the national culture and KM.

Information technology enables KM by facilitating the exchange of knowledge. “Today knowledge exchange must keep pace with the explosion of new knowledge and is magnified by the pervasive use of information technology.” (Phillips, Vollmer, 2000) “Countries with different cultures had different IT perceptions and priorities.” (Tai,

Phelps, 2000) “IT perceptions ... are affected by the type of culture (in particular Western or Chinese) dominant in their firm.” (Tai, Phelps, 2000)

This research does not pursue the technological dimensions of these relationships; but, it is important to point out that technology is a key factor of success in international strategy, KM, and understanding national cultures (Schulte, 1999). In other words, information technology is an enabler and provides new ways of handling and managing knowledge in the modern world. However, culture has a significant influence.

Additional interesting KM-related thoughts and comments can also be found in the literature, but to get a more complete picture of KM and national culture one must turn to the international strategic management and national culture research for more guidance. This study follows a review of the literature on global, regional, organizational, environmental, and national culture and mines research to discover interesting findings at the intersections of KM and national culture in East Asia.

Global Environment

The book, Managing Across Borders, extends the global integration/local responsiveness paradigm. “[The] two powerful forces affecting the shape of the international business environment are globalization and localization. Globalization involves a worldwide convergence of consumer preferences and increased economies of scale in production because of technological innovations. Localization involves diverse consumer preferences, varied distribution channels, [and] localized government regulations ... [It also involves] different national, sub-regional and local cultures and inconsistent levels of

industrial, economic, transportation, political, social and information infrastructure.”

(Schulte, 1999, p.43) These two forces pressure firms to become sensitive and responsive to global and local needs. Bartlett also stated that “within any industry, ... companies can and do respond in many different ways to the diverse and often conflicting pressures to coordinate some activities globally, and to differentiate others locally.”

(Bartlett, 1986, p.370)

The primary challenge is to build multiple sources of competitive advantage in a complementary and flexible manner (Bartlett and Ghoshal, 1992, p.33). In other words, there is no single best choice and solution; the appropriate strategy must fit organizational context, the nature of the industry/nation, and the value chain.

This study now drills down from the global (or international) view to the regional view and then to the specific region of Asia.

Regional Environment

The notion of “go global or die” was the battle cry of many firms in the 1990s. However, managers are realizing more and more that the world is not a homogenous global market. Some firms are ignoring potential global opportunities because executives have concluded that the hypothesized above-average rents from globalization are highly theoretical.

Regional production is more scale-efficient and more responsive to local needs than global responses. Regional organizational structures are also more easily managed.

Also, by focusing on a region for configuration of production, the firm is perceived as an insider and has more rapid access to consumer level information. The firm is better able to respond quickly. Regionalization necessitates firms' analyses of their competitive situations on a region-by-region basis.

Organizational Factors

Adding to the effects of external regionalization forces, organizational factors can provide either support or barriers to a regional strategy. The same logic for understanding a firm's ability to develop and implement a global strategy (Yip, et al, 1992; Yip, 1995) leads to what is illustrated in Table 2.1, which provides a typology and brief descriptions of the organizational factors affecting the formulation and implementation of a regional strategy. One of the key factors that should be considered when developing a global strategy is culture.

Table 2.1
Organizational Factors Influencing the Formulation
and Implementation of a Firm's Regional Strategy

Organizational Dimensions	Description of Organizational Forces
Organizational Structure	<ul style="list-style-type: none"> • centralization of regional authority • absence of national and regional split
Human Resources	<ul style="list-style-type: none"> • use of regional nationals • regional experiences by executives • frequent travel within region • actions support regional structure and strategy
Management Processes	<ul style="list-style-type: none"> • cross-nation within region coordination • regional strategic planning • regional budgeting and accounting • regional compensation and reward systems • regional groups, forums and information systems (regional intranet)
Cultural Dimensions	<ul style="list-style-type: none"> • regional versus national identity • regional versus national commitment to employment • interdependent versus autonomous businesses in a region

Before turning to the specific region of East Asia, an overview of national culture-related issues is explored.

National Culture and Global Competitiveness

Many agree that the world has become a global marketplace. Firms are expanding abroad through foreign mergers and acquisitions. The importance of understanding foreign national cultures has become imperative. A national focus may enable a firm to understand cultures, legal and social norms, and other factors that may be important to

achieving strategic competitiveness (Davis and Schulte, 1997, p. xv). National culture shows up as an important determinant in each strategic option. Kogut (1988, p. 429) stated, “When economic choice is compared across countries, cultural characteristics are likely to have profound implications.” “Only those competitive advantages that are derived from the appropriate core cultural values can be sustained in the international market in the long run; hence MNEs should [reorient] themselves to product areas that capitalize on their [own] national cultures.” (Tsang, 1999)

Generally speaking, “MNCs prefer to operate in markets populated by culture not too different from their own [because] lack of knowledge is an important obstacle to the development of international operations.” (Li, 1994) The need for knowledge of national culture, to know all aspects of a country (i.e., economics, politics, history, etc.), is the key factor. Increased knowledge about a foreign country can reduce both the costs and the uncertainties of operating in that foreign market (Buckley, 1976). “National culture plays an important role in formulating strategic choices..., [and it] is an important determinant in each strategic option.” (Davis and Schulte, 1997, p. xv) Firms must decide whether to compete in all of the world markets or regions or select only some of them. Competing in many international markets may enable the firm to achieve economies of scale because of the size of the combined markets, but this can happen only if consumer preferences in the multiple markets are similar (Davis and Schulte, 1997, p. xv).

Firms confront numerous challenges, including a number of different problems when entering new international markets. Firms need to have the ability to serve the widest ranges of customers and changing product demands, while building on long-term process

capabilities and the collective knowledge of the organization (Boynton, 1993). A firm needs more information about the target nation or region's culture for better strategy development and implementation. Key among these difficulties is a lack of foreign market knowledge (Lord, 1997), which will make entry strategies difficult when the firm goes global. "With business becoming more international, effective strategic management requires accounting for fundamental national differences, [so] ... profiles of national culture(s) can become tools for strategic choices in corporate boardrooms." (Franke, 1991)

So far, no one has developed a perfect strategy that would enable a country to make all of its industries internationally competitive (Ricks, 1990). Deciding what to do in each country requires a firm to be sensitive to cultural variables (Franke, 1991). Achievement of any desired result can be hastened by the acquisition of knowledge and skills of the local country. (Harris, 1991, p. 201)

Although there is no single best strategy to fit one's business into the global world, an appropriate strategy must fit into the organizational context and the nature of the industry and industrial value chain. (Schulte, 1999, p. 42) In order to operate in both familiar and unfamiliar countries, a firm needs to develop its competencies by internally spreading knowledge and developing KM capabilities in order to foster knowledge fusion across borders.

To deal with people who are surrounded by a culture is to deal with the culture itself. In a sense, all life is an intercultural experience (Harris, 1991, p. 201). The issue is how effectively one copes with cultural differences. National culture is the way people handle

problem solving and how they cope with challenges in their particular environment (Harris, 1991, p.23). All people within the environment particular to a certain culture could not but accept the notion of problem solving approaches that they accept as normal behavior. “Culture shock occurs between values, beliefs, and assumptions when various culture contradiction or confrontation [occurs].” (Harris, 1991, p. 201)

Sun Tzu said, “If you know the enemy and know yourself, you need not fear the result of a hundred battles. If you know yourself, but not the enemy, for every victory gained you will also suffer a defeat. If you know neither the enemy nor yourself, you will succumb in every battle.” (Giles, 1944) This applies in business competition as well as to competition in war.

Cultures of the world are characterized by both differences and similarities (Keegan, 1999, p.59). Business should recognize the differences between cultures and incorporate accommodations into business processes and strategies; additionally, they should use the shared cultural characteristics to avoid unneeded and costly waste in globalization.

(Keegan, 1999) In the cultural dynamics of the global marketplace, the differences and similarities are equally important and together “express the fact of cultural universals.”

(Keegan, 1999) (Cultural universals are modes of behavior that exist in all cultures.)

Understanding differences in national cultures represents opportunities for companies who are ‘going global’ to standardize some or all elements of a marketing program . This is] because the cultural diversity in the world turns out to be merely the different ways of accomplishing the same thing (Keegan, 1999, p. 61). Harris observes that, “universally,

each culture has a reasoning process, each manifesting the process in its own distinctive way.” (Harris, 1991, p. 210)

Knowledge of culture provides insight into people, especially into their values and behavior (Harris, 1991). “Values are specific to national cultures, never universal.” (Hofstede, 1999) Cultural values and behavior affect work culture, the process of globalization, and the global economy. “Culture gives people a sense of identity, whether in nations or corporations,” (Harris, 1991, p.24) and it “changes the way national economies work.” (Gaske, 1999)

Cultural competencies and talents are essential for multinational corporations to avoid cultural blunders and for creating cultural synergy as well as for them to become more effective and profitable in their practices (Harris, 1991). The need to understand the differences between one’s own culture and others will lead to better cultural comprehension between peoples and then result in better international business exchanges (Harris, 1991, p.27).

National Culture and Economy Development

The World Bank published The East Asian Miracle: Economic Growth and Public Policy in 1993. This volume highlighted the remarkable economic growth of the economies of East Asia (Davis and Schulte, 1997, p. xv). According to the World Bank, East Asia has accumulated a “remarkable record of high and sustainable growth.” Those countries included Japan, Hong Kong, the Republic of Korea, Singapore, the People’s Republic of China, the Republic of China-Taiwan, Indonesia, Malaysia, and Thailand. Additionally

the World Bank reported that from 1965 to 1990, the economies of these and the remaining 14 countries in East Asia had a faster growth rate than all other regions of the world combined. Researchers have considered many factors to explain this impressive economic growth: education, population, nutrition, technological progress, capital formation, international trade, and national culture (Yeh and Lawrence, 1995; Meier, 1989).

The following section briefly describes Hofstede's framework and seminal work on national culture and management provides the foundation for the empirical research in this study. A more detailed analysis of the framework and the comparisons between the U.S. and Taiwan along these dimensions is explained in Chapter 3 of this study.

Hofstede's Five National Culture Dimensions

Hofstede (1999) said, "Human nature has not changed in the past centuries and is unlikely to change with the coming of the next." He also said, "national culture changes only very slowly if at all." (Hofstede, 1993) Extending this concept, the multi-national culture, made up of many cultures of individual nations, will not change faster than its parts. (Each linguistic group forms a culture of its own within a country.)

National culture can be described using five bipolar dimensions. The position of a country on these dimensions reveals how its society functions, including how management processes and theories apply to management strategy. As a construct, national culture is not directly accessible to observation, but it must be inferred from

other measures useful to predicting observable and measurable behavior. The five dimensions of national culture according to Hofstede are:

- **Power distance:** the degree of inequality among people which the population of a country considers as normal; from relatively equal to unequal;
- **Individualism versus collectivism:** the degree to which people in a country prefer to act as individuals rather than as members of groups;
- **Masculinity versus femininity:** the degree to which tough values, like assertiveness, performances, success, and competition (which nearly all societies associate with the role of men), prevail over tender values, like the quality of life, maintaining warm personal relationships, service, care for the weak, and solidarity (which most societies associate with women's roles);
- **Uncertainty avoidance:** the degree to which people in a country prefer structured over unstructured situations; and
- **Long term/short term (Confucian Dynamism):** comparison of the tendencies (or preference) to practice long-term future-oriented values, like thrift and persistence, and present (past)-oriented short-term values, like respect for tradition and fulfilling social obligations, and finding a balance among them.

The following section of the literature review provides some insights from the integrated concepts and lessons from previous research on national culture, international strategic management, and KM.

Literature Review Insights

Table 2.2a and 2.2b summarizes insights obtained by literature review of articles related to national culture.

Table 2.2a
Literature Review Insights Summary (part a)

Author	Main Point of Article
Denise Tsang, 1999	<ul style="list-style-type: none"> • Culture provides a people with identity and context. • This context and cultural values condition their values, beliefs, evaluations, and judgments. • Overall capabilities at any level, individual or corporate, are affected by culture. • No fixed rules and regulations to win a battle
Geert Hofstede, 1993, 1994	<ul style="list-style-type: none"> • The ways people solve problems and form objectives differ according to their backgrounds (culture). • U.S. management theories contain a number of idiosyncrasies not necessarily shared by management elsewhere. • Management scientists are affected by culture. • No such things as universal management theories.
Phillips and Vollmer, 2000	<ul style="list-style-type: none"> • Significant problems require re-framing or thinking about them differently. • [It is] an advantage to have a variety of ways of thinking available and knowledge management provides a way to organize them. • Culture is recognized as the most difficult component of knowledge management.
Casson, 1995	<ul style="list-style-type: none"> • Learning by doing is an important aspect of problem solving and so learning [cause and effect by experience] will give each culture a distinctive kind of problem solving expertise. • The developed culture is that which best grows economically.
Ernst, 2000	<ul style="list-style-type: none"> • People also learn from each other so specific knowledge or problem-solving processes circulate within specific groups/region of people. • Their specific knowledge (internal or external) can build up the capability of a company staffed by these people and it will directly affect its growth; conversely, limitations to that knowledge can impede that company's growth.
Martin, 2000	<ul style="list-style-type: none"> • Culture building is a slow process.
Bartlett, Ghoshal, 1988	<ul style="list-style-type: none"> • Integrate both local and global knowledge and then [be] locally sensitive and globally conscious in the global world.
Johansson, 2000	<ul style="list-style-type: none"> • [Total globalization of] all activities is not always achievable or desirable
Lawrence & Lorsch, 1986	<ul style="list-style-type: none"> • There is no single best strategy for every situation; so a firm must fit its strategy to its business capabilities and the external competition and operating environment.

Table 2.2b
Literature Review Insights Summary (part b)

Author	Main Point of Article
Barlett and Ghoshal, 1986	<ul style="list-style-type: none"> • Globalization and localization work simultaneously to transform many industries.
O'Dell, Cindy Johnson, 1998	<ul style="list-style-type: none"> • Knowledge management is really about recognizing that regardless of what business you are in, you are competing based on the knowledge of your employee.
Prahalad and Doz, 1987	<ul style="list-style-type: none"> • The knowledge-based view of the firm, firms learn more about doing their business and are more likely to see new opportunities and problems as they operate, solving challenges that arise than they would learn if there were no challenges.
Davenport, 1998	<ul style="list-style-type: none"> • Knowing how to do things.
Adams, 1998	<ul style="list-style-type: none"> • The success is determined by the “competitive advantage [that] varies with national cultural norm.”
Porter,	<ul style="list-style-type: none"> • Cultural factors that bear on the work ethic, on the nature of domestic demand, on preferences for one type of organizational structure over another, and on attitudes towards risk-taking and experimentation, are particularly important elements of the set of factor conditions, which are used to determine national competitiveness.
Gaske, 1999	<ul style="list-style-type: none"> • The most important resources of production are technology and human capital.
Keegan, 1999	<ul style="list-style-type: none"> • Values and beliefs influence thoughts and behaviors and so provide a major cultural influence on what happens in the marketplace. • The culture influences products around the globe. • The culture must be recognized before formulating a globalization strategic plan. • Cultural factors are hidden from view—the culture is learned behavior passed on from generation to generation, and it is difficult to fathom.
Stewart, 1997	<ul style="list-style-type: none"> • People’s skills, knowledge, and creativity have become increasingly important in the creation of economic value.

From the intersection of the literature on KM and national culture, several important points can be delineated. They include: national culture affects problem solving; overall capabilities at any level, individual or corporate, are affected by culture; management

scientists are affected by culture; KM facilitates transferable skills for global integration and local responsiveness; KM enables learning about opportunities and problems; national culture affects global competition; and desire fulfillment and capability utilization is a part of KM.

National Culture Affects Problem Solving

National culture affects problem solving abilities, skills, and approaches. Culture provides a people with identity and context. This context and cultural values condition their values, beliefs, evaluations, and judgments. (Tsang, 1999) Ideas of people who grew up in a particular place and period “cannot help but reflect the constraints of their environment.” (Hofstede, 1993) So one can conclude that the ways in which people solve problems and form objectives differ according to their backgrounds. In fact, Phillips and Vollmer (2000) point out: “Significant problems require re-framing or thinking about them differently. These significant problems occur as culture, new technologies, evolving business processes, and an emphasis on relationships and knowledge creation transforms simple business problems into complex business dilemmas.” So it would be an advantage to have a variety of ways of thinking available, and KM provides a way to organize them.

Using KM for managing both the tacit and explicit components of human knowledge can provide a company a competitive advantage over its competitors. KM deals with not only the knowledge within an organization but also knowledge assets throughout multiple organizations and across national borders.

Culture Affects Capabilities

Overall capabilities at any level, individual or corporate, are affected by culture. Tsang (1999) indicated that management capabilities are built on core cultural values that can hinder or enhance knowledge accumulation. A company's core cultural values will affect its capabilities for creating and sustaining economic benefits when it tries to compete internationally. Capability-related knowledge matters both in global and local strategies. Firm-specific resources, capabilities, and knowledge requires KM; so, transnational capabilities must include knowledge integration.

“Learning by doing is an important aspect of problem solving and so learning [cause and effect by experience] will give each culture a distinctive kind of problem solving expertise.” (Casson, 1995, p.89) People also learn from each other, so specific knowledge or problem-solving processes circulate within specific groups/region of people. The specific knowledge (internal or external) of these people can build up the capability of a company staffed by them, and it will directly affect the company's growth; conversely, limitations to that knowledge can impede growth (Ernst, 2000). Thus, there exists a need for KM to integrate internal and external knowledge of capabilities and competencies of human resources.

Management Scientists are Affected by Culture

“*Management*, as the word is presently used, is an American invention. In a global perspective, U.S. management theories contain a number of idiosyncrasies not necessarily shared by management elsewhere.” (Hofstede, 1993) In various parts of the

world, not only do management practices differ, but the entire concept of management may differ from place to place, and the theories needed to understand it may deviate considerably from what is considered normal and desirable in the U.S.”

Since people are encompassed by their local culture, they form distinct ways of thinking and distinct ways of practice, and they tend to have their own management theory.

Management scientists are not exempt (Hofstede, 1994). KM is affected by culture too, since it is part of management. Therefore, KM theory and practice are also affected by culture.

Any organization will be affected by the culture of its national environment: the collective mental programming of its members and managers, and even management scientists who offer their theories will affect the management process (Hofstede, 1994). The national culture in which the management scientists find themselves highlights the influences of that particular culture, their research questions, and the theories they formulate (Hofstede, 1994).

Because beliefs, expectations, and practices differ by culture, “there are no such things as universal management theories.” (Hofstede, 1993) “[The] cultural dimension to knowledge infrastructure is absolutely fundamental to successful KM.” (Martin, 2000) But it is recognized as the most difficult component of KM (Phillips, Vollmer, 2000). Culture building is a slow process (Martin, 2000); and large cultures have subcultures that are more localized. Organizational culture is surrounded by the national culture. Big environments affect smaller environments within them. Therefore, national culture should be treated as the main issue in KM because it is such a large influence factor. But

to what extent is KM affected by national culture? This is the main question being addressed in this study.

Knowledge for Strategies

Knowledge matters both in global and local strategies. The management of knowledge is vital to the success of firms in a global economy. During globalization, businesses need to integrate both local and global knowledge. They must use KM so they can be both “locally sensitive and globally conscious.” (Bartlett, Ghoshal, 1988)

A strategy that “totally globalizes all activities is not always achievable or desirable.” (Johansson, 2000) There is no single best strategy for every situation; so a firm must fit its strategy to its business capabilities and the external competition and operating environment (Lawrence & Lorsch, 1986). This is analogous to Sun Tzu’s reference to flexibility by saying that “water shapes itself according the shape of the ground,” and “an army should manage its victory in accordance with the situation of the enemy.” (Tsang, 1999) Barlett and Ghoshal “found that globalizing and localizing forces are working simultaneously to transform many industries.” (1988, also Schulte, 1999)

Once a business builds flexible central and local management capabilities, their next challenge is to organize those capabilities in a way that allows the company to do what it must to survive in today’s international environment, and then to make a profit. To quote Cindy Johnson, “knowledge management is really about recognizing that regardless of what business you are in, you are competing based on the knowledge of your employee.” (O’Dell, 1998, p.3) Knowledge is all-important for survival and economic prosperity.

Firms must practice KM to integrate resources within and outside of the firm and across the borders to where they do business.

Knowledge Management for Opportunities and Problems

KM enables learning about opportunities and problems. Sun Tzu said that there are no fixed rules and regulations to win a battle (Tsang, 1999), and only those who know themselves and their enemy can win (Giles, 1944). Similarly, understanding industry itself is a good way to see new opportunities and problems, but still there is no single best solution to the KM problem either. Prahalad and Doz (1987) discuss the knowledge-based view of the firm and point out that firms learn more about doing their business and are more likely to see new opportunities and problems as they operate and solve challenges that arise than they would learn if there were no challenges.

Only through “knowing how to do things” (Davenport, 1998) and leveraging knowledge can the firm find ways to fit into a category of global, local, or both. Therefore, businesses need to understand aspects as cost structure, political pressure, market, competitive focus, customer relations and behavior, and re-segmentation of products into various markets; they need to develop abilities to do better with the current rules of the business game and to become able to change the rules. They need to take advantage of opportunities to learn and adapt their business over time.

National Culture Affects Global Competition

Adams asks why are some nations more successful in the international market than others. (Adams 1993) He claims that the success is determined by the “competitive advantage [that] varies with national cultural norm.” Different national industries all have access to essentially the same market information, capital, and technology, and they can develop similar expertise (Adams, 1993); but, countries are very specialized in terms of what kinds of technologies their firms patent (Patel, 1991; Dunning, 2000). The developed culture is one that best grows economically (Casson, 2000).

“The world economy has changed profoundly since World War II ... perhaps the most fundamental change is the emergence of global markets.” (Keegan, 1999, p.38) The global market encompasses exchange of foods, services, capital, and technology.” (Berry, Conkling, Ray, 92, p. vii) Additionally, world trade is considered to be the best chance to maintain global peace and prosperity (Harris, Moran, 1991) by providing situations where everyone can profit.

“Porter (90) pointed to cultural factors that bear on the work ethic, on the nature of domestic demand, on preferences for one type of organizational structure over another, and on attitudes towards risk-taking and experimentation, as particularly important elements of the set of factor conditions which are used to determine national competitiveness.” (Berry, 92, p.10)

In the age of knowledge economy, “the most important resources of production are technology and human capital.” (Gaske, 1999, p.121) The knowledge held in people’s

heads will lead them toward a specific trait, and the knowledge to organize, select, learn, and judge originates in values and beliefs. Values and beliefs influence thoughts and behaviors and so provide a major cultural influence on what happens in the marketplace (Keegan, 1999, p.58).

Desire Fulfillment and Capability Utilization

Desire fulfillment and capability utilization are parts of KM. People's desires for fulfillment are strongly influenced by culture. Culture influences products around the globe (Keegan, 1999). Products made and services provided at one place and time cannot be guaranteed to be successful in another country in the future. Some products or services become more homogeneous (mass produced), whereas others become the opposite (customized) in the global market. So an understanding of national culture can speed up the process of localization and at the same time help a company to maintain global competitiveness (Bartlett, Ghoshal, 1988). Therefore, the culture must be recognized before formulating a globalization strategic plan (Keegan, 1999).

“People's skills, knowledge and creativity, have become increasingly important in the creation of economic value.” (Stewart, 1997, p49) “As long as the world's markets remain open, companies of all sizes in various industries from many countries will continue to compete.” (Jahansson, 2000, p.4) Each country's capabilities provide it a competitive advantage that others can hardly imitate. This is partly because cultural factors are hidden from view—the culture is learned behavior passed on from generation to generation.” (Keegan, 1999, p.68)

Chapter 3

Methodology

*“The act of arranging information becomes an act of insight.”
Edward Tufte, Professor of Information Design and Statistical Evidence,
Yale University (Jensen, 2000, p.140)*

Purpose of the Study

Hofstede describes culture as a collective phenomenon. “Although we may get our information about culture from individuals, we have to interpret it at the level of collectivities.” (1993) (Collectivities are characteristics that apply to or describe groups as opposed to those describing individuals.) To compare two different cultures would be a case of comparing apples with oranges (Hofstede, 1998). To quote Hofstede (1993): “Culture can be compared to a forest, while individuals are trees. A forest is not just a bunch of trees: it is a symbiosis of different trees, bushes, plants, insects, animals and micro-organisms, and we miss the essence of the forest if we only describe its most typical trees. In the same way, a culture cannot be satisfactorily described in terms of the characteristics of a typical individual. There is a tendency in the U.S. management literature to overlook the forest for the trees and to ascribe cultural differences to interactions among individuals.”

Hofstede’s viewpoint is that “management problems remain the same over time, but [management’s] solutions differ from country to country, [which] isn’t popular in an age in which business is supposed to be globalizing. Global business looks for global management solutions which one would like to work the same way everywhere.”

(Hofstede, 1999) But he further anticipates “a breakthrough in the development of theories of management that will become more adapted to national cultural value systems in different parts of the world.” (Hofstede, 1999)

To make such a breakthrough, more knowledge and statistics pertaining to the different national cultures must be analyzed (Raeside and Walker 2001, p. 157). Therefore, this research samples and compares values held by people from both Taiwan and the U.S. to examine how differences between national cultures affect KM. Specifically, the purpose of the study is to find out how inter-country variance, particularly of national culture, affects KM at this point in time; and, based on that, to attain insight that might be useful for future researchers. This research itself is a piece of KM and so is part of the continuous process of KM improvement—it is one of the steps in “the constant step by step improvement towards perfection” (Tsang, 1999), which is critical in the acquisition of new capabilities for mankind.

Question to be Answered

The primary question is: To what extent is KM affected by national culture?

Specifically, are Taiwanese and U.S. beliefs, expectations, and practices about KM significantly different? (To answer this requires familiarity with what they are.) The primary question breaks down into three hypotheses:

1. Taiwanese respondents’ beliefs about the critical key elements of KM *are* significantly different from beliefs of U.S. respondents.
2. Taiwanese respondents’ expectations about the benefits of KM *are* significantly different from expectations of U.S. respondents.

3. Taiwanese respondents' practices *are* significantly different from practices of U.S. respondents.

The following details the research methodology.

Cross-Cultural Management Theories and Research Methods

In a 1986 article on cross-cultural management research, Nancy Adler, Robert Doktor, and S. Gordon Redding proposed that the center of business had shifted from the Atlantic to the Pacific Basin, so East-West cultural differences have become ever more important. These authors indicate that there are five central issues in cross-cultural management research that need to be addressed: (1) cross-cultural variance, (2) cultural determination, (3) convergence versus divergence, (4) intercultural interaction, and (5) synergy from cultural diversity.

Geert George Hofstede (1993) points out that the present view of management is the view of the West, especially the North American perspective, even though the entire concept of management may vary in other parts of the world. However, the theories used to understand it may differ considerably from what is considered desirable in the U.S.

Hofstede offers a model to help explain the global difference of management practices and theories, which are explained later. According to Tung (1991), western executives who take the time to understand the East Asian perspective on culture will improve their advantage at doing business in East Asia.

Taiwan and U.S. National Culture Comparisons using Hofstede's Framework

All societies share the same basic problems, but different societies have 'chosen' (historically rather than consciously) different solutions to these problems. Recall Hofstede's observation, "The world is full of confrontations between people, groups, and nations who think, feel, and act differently." Hofstede (1991) When one looks across borders one sees that people have developed all kinds of solutions to problems. Understanding the differences of how people think, feel, and act will help reduce the cost of solving problems and improve the quality of solutions. A solution found in one region may be applied to another region—if the people accept it.

Culture is learned, not inherited (Hofstede, 1991, p.5). People in a region have specific patterns of behavior that they have learned throughout their lifetime and partly shared with other people in the same social environment where they live and learn. This collective pattern of life is culture. But how do you measure a collective pattern?

Hofstede developed an instrument to measure national culture in the 1970s to 1980s—a questionnaire covering culture sent out to IBM and 72 IBM subsidiaries. Responses numbered 116,000 and provided a large global sample size, so his measure has high statistical reliability.

Although there has been some recent discussion on the validity of Hofstede's scales, Hoppe validated them in 1990. Hofstede's measures have been replicated in many studies: Kogut & Singh, 1988; Li, 1994; Schneider, 1989; Franke, Hofstede and Bond, 1991; Van den Bosch, 1992; and Yeh and Lawrence, 1995. Despite some criticism of

Hofstede's use of only a few items in his questionnaire to capture the dimensions of his cultural study, his work presently represents the largest sample of nations in any culture study and is the benchmark for future work. In addition, Professor Hofstede has continued to update his research instrument.

“Hofstede's work deals primarily with the differences between national cultures.” (Joynt, 1996, p.35) The position of a country within Hofstede's five bipolar dimensions on national culture reveals how that society functions (including management processes) and the types of theories applicable to management strategy for that society. As a construct, national culture is not directly accessible to observation, but must be inferred from other measures that are useful in predicting observable and measurable behavior. The U.S. and Taiwan are compared in five dimensions of national culture in Table 3.1.

Table 3.1
Hofstede's Table of the Five Dimensions of National Culture Measure

Country	Power Distance		Individualism		Masculinity		Uncertainty Avoidance		Confucian Dynamism	
	Index	Rank	Index	Rank	Index	Rank	Index	Rank	Index	Rank
Taiwan	58	29-30	17	44	45	32-33	69	26	87	2
U.S.	40	38	91	1	62	15	46	43	29	14

Source: Hofstede, Geert, Bond, Michael Harris. “The Confucius Connection: From Cultural Roots to Economic Growth.” *Organizational Dynamics*, Volume 16, Issue 4 (Spring 1988): 4-21.

The following section further details the five dimensions and the comparison of Taiwan and the U.S.

- 1 **Individualism versus collectivism:** the degree to which people in a country prefer to act as individuals rather than as members of groups, or “the degree to which individuals integrate into groups” (Hofstede, 88, p. 10)

In this dimension, the U.S. seems to be very high in individualism (Hofstede, 91, p.53). Taiwan and the other little dragons seem to have low individualism but have retained considerable collectivism in spite of industrialization (Hofstede, 1991, 74). This dimension is more related to a country's degree of economic development (1991, p.84).

In the West, personality is a separate entity, distinct from society and culture, and it is an attribute of the individual (Hofstede, 1991, p.74). In the U.S., “doing one’s own thing” is the theme. People are more self-actualized; when lower priorities are satisfied up to a certain level then can higher priorities be addressed (Hofstede, 1991, p.73).

Taiwanese/Chinese people favor doing things according to the interest and honor of their in-groups. (A person’s in-group is his family members and close friends, a peer-pressure influence group). Also, they need to align themselves with the in-group’s objectives. For the Chinese, personality “stands for 'person' as a 'human constant', which includes not only the individual but also his or her intimate societal and cultural environment which makes his or her existence meaningful.” (Hofstede, 1991, p.74)

2. **Power distance:** the degree of inequality among people which the population of a country considers as normal; from relatively equal to unequal; “All societies are basically unequal but some are more unequal than others.” (Hofstede, 88, p. 10)

The U.S. is low in power distance but not extremely low (1991, p.26). That means limited dependence of subordinates on bosses and a preference for consultation, that is, interdependence between boss and subordinate (1991, p.27).

The Taiwanese/Chinese people are high in power distance (1988, p.11-13; 1991, p.26; 1991, p.27). Chinese people accept and appreciate inequality, but feel that the use of power should be moderated by a sense of obligation. There are considerable dependences of subordinates on bosses (1991, p.40).

3. **Masculinity versus femininity:** (MAS score) the degree to which 'tough' values like assertiveness, performance, success, and competition (which in nearly all societies are associated with the roles of men), prevail over tender values like the quality of life, maintaining warm personal relationships, service, care for the weak, and solidarity (which in nearly all societies are associated more with women's roles);

The U.S. is more toward masculinity (high in MAS score) while Taiwan/Chinese is relatively balanced (medium in MAS score). "Masculinity is unrelated to a country's degree of economic development." (1991, p.84)

4. **Uncertainty avoidance:** The degree to which people in a country prefer structured over unstructured situations; or will feel either uncomfortable or comfortable in unstructured situations (Hofstede, 88, p. 11).

Mere human beings do not know what will happen tomorrow, and all have to live with it.

The feelings of uncertainty reflect the collective values of a society (Hofstede, 1991, p.111).

The U.S. is low in uncertainty avoidance and Taiwan is midrange in uncertainty avoidance. In other words, people in the U.S. remain relatively more comfortable in unstructured situations than people in Taiwan/Chinese who are not comfortable in unstructured situations.

5. **Long term versus short term (Confucian Dynamism):** long-term values are oriented toward the future, like thrift and persistence-dynamics, and a “more future-oriented mentality” (Hofstede, 88, p. 16); short-term values are oriented towards the past and present, like respect for tradition and fulfilling social obligations, and a “more static, tradition oriented mentality.” (Hofstede, 88, p. 16) It is to live with what you live and do what you should do. In other words, one should live his life dutifully and in contentment. Confucian Dynamism comes from Confucius’ search for virtue, but he left the question of truth open (1991, p.171). (“Confucian values are associated with economic growth.” (1991, p.167))

Taiwan is high in Confucian Dynamism (Hofstede, 1988, p.11-13). “Chinese minds seem to take a position different from [the] Western one when it comes to the need for defining Truth.” (Hofstede, 1991, p.164)

The U.S. is low in Confucian Dynamism. Generally speaking, the long term versus short-term value orientation will probably puzzle many Western readers. A Westerner would not normally find the comparison important (1991, p.168). The long-term values are persistence and perseverance, ordering relationships by status and observing this order, thrift, and having a sense of shame. The short-term values are personal steadiness and stability, protecting your ‘face’, respect for tradition and reciprocation of greetings, favors, and gifts.

Factors Used in This Study and Hypothesis

The U.S. and Taiwan are very different in culture but both are very successful in business and economic growth. It would be interesting to know how different they are in the five dimensions of culture, especially in **Individualism** and **Confucian Dynamism**, and to know how the differences affect the use of KM. Consider three research hypotheses according to the Hofstede's findings (exemplified by Table 3.1 above and mentioned in the section of "Questions to be answered):

- H1. Taiwanese respondents' beliefs about the critical key elements of KM *are* significantly different from beliefs of U.S. respondents.
- H2. Taiwanese respondents' expectations about the benefits of KM *are* significantly different from expectations of U.S. respondents.
- H3. Taiwanese respondents' practices *are* significantly different from practices of U.S. respondents.

Foundations of the Research

The methodology used in this study is to use statistics to analyze the relation between KM and national culture and present the information about that relationship in a way that management can easily use it. The main theme is how to integrate information and use it strategically within and across businesses and borders. This study is itself an example of knowledge creation and management. It uses a Hofstede-based framework at the national level of aggregation, with the data collected from individuals and analyzed at that national level following Hofstede's procedure, which describes how to compare nations and analyze the research data, the major part of which is collected from individuals.

The theoretical justification is the consideration of the differences between nations and their effects on national culture. Various social science disciplines analyze such data at their own levels of aggregation: the individual, the group, the organization, the tribe, and the country. (Hofstede, 1995) The keys for understanding management issues are data collection and measurement, and as mentioned in chapter one, the analysis in this study uses statistics from analysis of the research data to try to understand the relationship between KM and national culture.

This relationship for comparing Taiwan and the U.S. is measured using two factors: one is the difference in degree between individualism and collectivism, and the other is the degree of Confucian Dynamism present in each country. Because “people in different countries have different mental programming” (Hofstede, 1988), one must remember that the people who construct the questionnaires and do the research have different ideologies, and that affects the research too.

Statistics are critical to data collection and its analysis (Raeside and Walker, 2001, p.156). Statistical results are more reliable indicators of the choices actually made by the majority than choices made by an individual (Hofstede, 1991, p.10).

Hofstede claims that the main cultural differences among nations lie in their values (Hofstede, 1991, p.236). Researchers have developed various types of questionnaires to determine people’s preferences and opinions. This study uses the Lickert five-point scale. The technique presents a set of attitude statements. Subjects are asked to express agreement or disagreement on a five-point scale. Each degree of agreement is given a

numerical value from one to five. Thus, a total numerical value can be calculated from all the responses with the range of choices being: strongly agree, agree, neutral, disagree, and strongly disagree. Although people do not always precisely indicate what they actually think on the questionnaire, the questionnaire still provides useful information that distinguishes between groups or categories of respondents.

Knowledge derives from information as information derives from data, which is the raw material essential for the creation of information. To make that data into meaningful information requires considering it in the context of its original purpose, categorizing it for analysis by its key components, assuring its correctness, and summarizing it.

Knowledge is produced upon comparison of the situations in which the information was collected with the historical cultural framework of similar situations in the past, by considering implications of the information, by relating the information to other information available, and by discussing it with others to find out what they think (Davenport, 1998, p.6).

The Plan and Process

This dissertation research methodology focuses on the impact of cultural differences between Taiwan and the U.S. on KM in those countries.

The plan was to survey a sample of people in Taiwan, and the U.S. with the unit of analysis being the individual. These surveys are used to assess perceptions and opinions on forty-one important factors. The questionnaire is based on input from various sources and modified to fit these research questions (KPMG, Charles Bixler, and Frank

Calabrese). Statistical analysis of the data, including analysis of responses and analysis of variance (ANOVA), has been conducted using SPSS 10.0 software to measure relationships between the variables. Demographics and other variables have been collected to provide an interesting story and picture of the sample in the study.

The variables and measures include beliefs, expectations, and practices in three areas: elements of KM according to Stankosky, Bixler, Calabrese, Schulte and KPMG; dimensions of National Cultural in Individualism versus Collectivism; and Confucian Dynamism (Schulte, Hofstede, Bond et al). The research questions are designed to be straightforward and easy to understand by the interviewees (see Appendix 3). Statistical data obtained from the research questionnaire provides answers to the three sub-research questions and supports forty-one corresponding hypothesis items.

Questionnaires were distributed through mail, fax, and person-to-person delivery. The target populations are scholars and general businesspersons including: university professors, graduate students, IT professionals, bankers, international trading companies, government employees, as well as many other occupational types. This provides a wide variety of populations with relatively wide demographic characteristics.

Statement of the Problem

In order to focus on the question “To what extent is KM affected by national culture?” this research has integrated theory from national culture literature and current KM thinking. It explores the overall effects on KM by the national culture and in particular, it explores the extent to which the factors of individualism, collectivism, and the long-

term/short-term thinking of Confucian Dynamism will affect beliefs, expectations, and practices pertaining to KM in the real world.

Individualism is defined as the measure of the expectations of people in a community that each one should look after himself and his immediate family only and that others should do the same. “Individualism is the most important dimension of national culture, especially when contrasting Western and Oriental culture.” (Triandis, 1995; Chow, 1999) “[It] has the largest effect on the design of and preference for management controls.” (Chow, 1999)

The opposite of individualism is called Collectivism, and is defined as “the extent to which people in a society from birth onwards are integrated into strong, cohesive in-groups, which, throughout the people’s lifetimes, continue to protect them in exchange for unquestioning loyalty.” (Hofstede, 1998)

Confucian Dynamism describes ways of doing things and interactions between people. (Confucius was the most revered Chinese philosopher who lived around the 5th century B.C. and he promoted both long-term thinking and short-term thinking.) The more dynamic, future-oriented Confucian values, such as ‘thrift’ and ‘perseverance’ on one side are complemented by the more static past- and present-oriented values like ‘tradition’ and ‘reciprocation of greetings, favors, and gifts.’ (Hofstede, 1998) Table 3.2 provides values associated with Confucian Dynamism.

Beliefs attribute importance to particular KM policies and actions that might be applied; expectations are anticipated benefits of such applications; practices are the actual current

implementation of KM processes. (The study polls beliefs, expectations, and practices to infer individualism versus collectivism and Confucian Dynamism.)

Table 3.2
Values (long-term and short-term) Associated with
Confucian Dynamism

Future oriented values: (Long-term, relatively important)	Past- and Present-oriented values: (Short-term, relatively unimportant)
Persistence (perseverance)	Personal steadiness and stability
Ordering relationships by status and observing this order	Protecting your face [saving face]
Thrift	Respect of tradition
Having a sense of shame	Reciprocation of greetings, favors, and gifts

Source: Hofstede 1998.

KM helps reduce the uncertainty of an unknown future.

Limitations in Cross-Cultural Research

All research has some kind of limitation. The primary limitations in this research are cross-culture limitations. This is accompanied by others, mainly exploratory limitations and limitations due to the sample selection and collection.

Data Collection Limitations

Data collection techniques included collecting preliminary survey data and control group survey data through mail and person-to-person delivery. Although these techniques receive much criticism for low response rates and potential bias, they still may be used/suitable for this study

Confidentiality

As mentioned in the questionnaire information sheet, the study assured confidentiality. The record will remain confidential and will in no way identify any individual participant in this study with any kind of information. That means no name, social security number, telephone, or address will be used for identification. The questionnaires collected were tracked by using number codes at the time the data were entered in the database.

Measurement Validity

This study used previously validated measures from KPMG, Dr. Charles Bixler, and Dr. Frank Calabrese, and the items in this survey were carefully connected to theoretical constructs to ensure measuring the relevant constructs and concepts.

Cross Culture Limitations

The questionnaire is designed to obtain individuals' opinions, but people from different cultures might not see or interpret the question the same way—their differing backgrounds will bias their answers in different ways. However, even though there are potential biases of respondents, the responses still can be used to measure the proposed hypotheses. It is suitable for this type of exploratory cross culture research.

Davis and Shulte refer to Nasif, et al (1990) and their specifications and discussion of cross-cultural research problems such as “criterion problems (definition, contingency, cultural biases); methodological simplicity (ethnocentricity, functional equivalence and time frame); sampling errors (number and selection of cultures, culture representativeness

and independence); instrumentation (equivalence of administration, response, timing, status of researcher, and the problem of cross-sectional data); data analysis (qualitative, non-parametric statistics and univariate analysis); and, level of analysis (data collection and analysis at one level of inferences).” (Davis and Schulte, 1997, p. xxii)

Hofstede (1998) also mentioned cross-culture research problems in his work. He said that value comparisons between nations should not be based on single representative samples spanning the nations’ entire populations, but that they should be based upon many samples matching functional groups within the populations. If one sampling were sufficient for the entire nation, very few comparative value studies would ever be done. It would be best to have truly representative samples, but normally that is unattainable. “Strictly speaking the samples of respondents for comparative national value studies need not be representative; they should only be matched, i.e., functionally equivalent. One should compare like with like. This justifies innumerable comparative cross-national values studies using students, managers, teachers, or civil servants as respondents – although not all of these meet the matching criterion.” (Hofstede, 1998)

Exploratory and Descriptive Limitations

This research is an exploratory study for the purpose of finding out something interesting and descriptive that describes statistical analysis of the hypothesis based on this data collection. Although the study was carefully designed, it does not rule out potential competing factors or explanations. The study assumes that all things beyond its scope are held even (or *ceteris paribus* in economics terminology). The comparisons between

beliefs, expectations, and practices are made within and across countries in order to speculate whether KM will be impacted by national culture. This study does not attempt to suggest causality.

Non-Probability Sample

Sample selection also affects the research's outcome: The sample gathered from the Taiwan and U.S. populations is not a probability sample because the sample is voluntary it may have a self-selection bias. Also, the sample may not adequately represent the entire population in either Taiwan or U.S., but it is an acceptable convenient sample and suitable for this type of exploratory cross-culture research.

Even so, these limitations have not and should not inhibit scholars from asking the difficult questions and searching for a better approximation to reality.

Chapter 4

Results of Responses

“If you can’t measure it, you can’t manage it.”

-Robert S. Kaplan and David P. Norton

This chapter will present the following information and analysis: a brief review of the data collection methodology, an analysis of the response rate to the field survey, and an analysis of the frequencies of the usable responses of the entire sample of the field survey.

Review of Data Collection Methodology

As mentioned in Chapter 3, this research is focused on exploring the impact of national culture differences on KM by comparing Taiwan and U.S. responses from field surveys. Questionnaires were distributed through mail and by personal delivery. Both distribution methods were effective. The sample includes knowledge workers in businesses, educational institutions, public enterprises, and other organizations.

Survey Response Analysis

Some responses were incomplete and could not be used in this study. The usable response rate was around 41%. The rate of usable surveys from Taiwan is 9.7% higher than the rate from the U.S. Responses are summarized below in Table 4.1.

Table 4.1
Survey Responses Summary

Category	Taiwan	U.S.	Total
Total surveys sent out	700	800	1500
Total surveys returned	409	398	807
Response rate	0.58	0.495	0.538
Total usable response	327	296	623
Rate of usable surveys	0.467	0.37	0.415

The following section provides an analysis of the demographics of the respondents.

Frequencies of Respondents of Entire Usable Sample

Demographics used in this study to help control for variables other than national culture (country) included size of firm, type of firm, and focus of firm. Other variables collected included stage of KM development, organizational level that promotes KM, and departmental and functional budget that contributed most to KM in the respondent's organization.

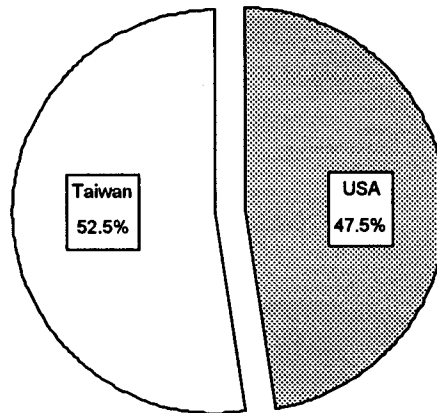
Percent of Responses by Country

According to Table 4.2 and Chart 4.1, the percentage of responses from U.S. and Taiwan knowledge workers were not significantly different (47.5% from the U.S. versus 52.5% from Taiwan).

Table 4.2
Percent of Responses by Country

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	USA	296	47.5	47.5	47.5
	Taiwan	327	52.5	52.5	100.0
	Total	623	100.0	100.0	

Chart 4.1
Percent of Responses by Country



Percent of Responses by Size

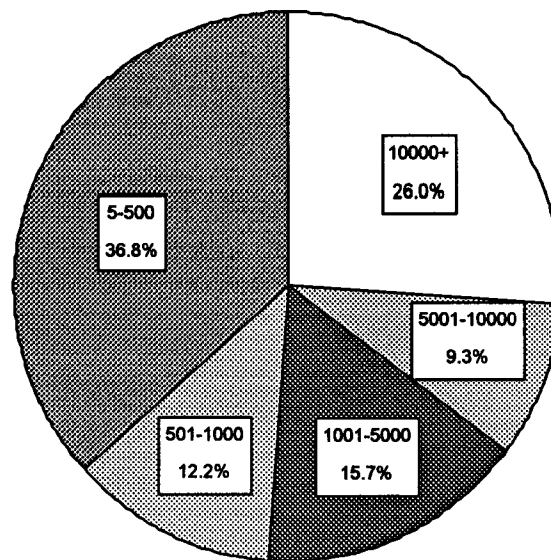
According to Table 4.3 and Chart 4.2, the distribution percentage of the number of responses among different organizational sizes had an interesting U-shaped pattern, with the smallest size organizations (5-500) and the largest size organizations (10,000 or more) sharing 62.8% of the total responses. Medium-sized companies of sizes 501-

1,000, 1001-5,000, and 5001-10,000 had response percentages of 12.2%, 15.7%, and 9.3% respectively.

Table 4.3
Percent of Responses by Company Size

Company size	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 10000+	162	26.0	26.0	26.0
5001-10000	58	9.3	9.3	35.3
1001-5000	98	15.7	15.7	51.0
501-1000	76	12.2	12.2	63.2
5-500	229	36.8	36.8	100.0
Total	623	100.0	100.0	

Chart 4.2
Percent of Responses by Company Size



Percent of Responses by Type

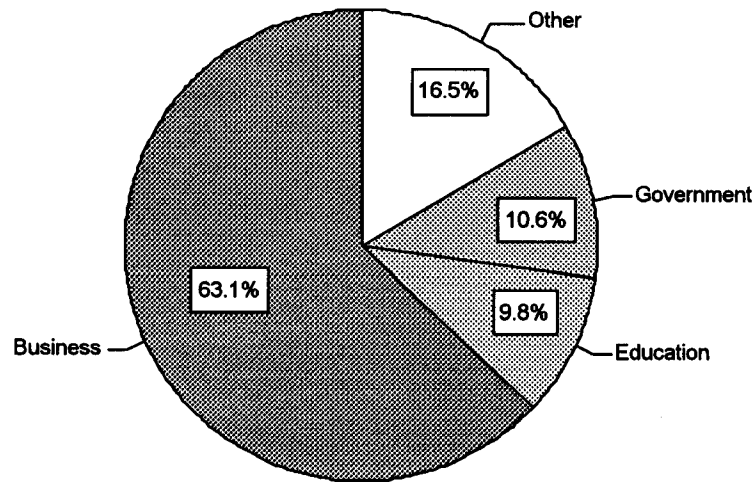
According to Table 4.4 and Chart 4.3, most of the responses (63.1%) were from businesses. The remaining responses were 9.8% for education, 10.6% for government, and 16.5% for others. The ‘other’ category included librarians, political party research

center research associates, doctors, nurses, pharmacists, and programmers who chose this category to describe their organizations. Either their organization fit more than one or none of the category options provided.

Table 4.4
Percent of Responses by Type

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Other	103	16.5	16.5	16.5
Government	66	10.6	10.6	27.1
Education	61	9.8	9.8	36.9
Business	393	63.1	63.1	100.0
Total	623	100.0	100.0	

Chart 4.3
Percent of Responses by Type



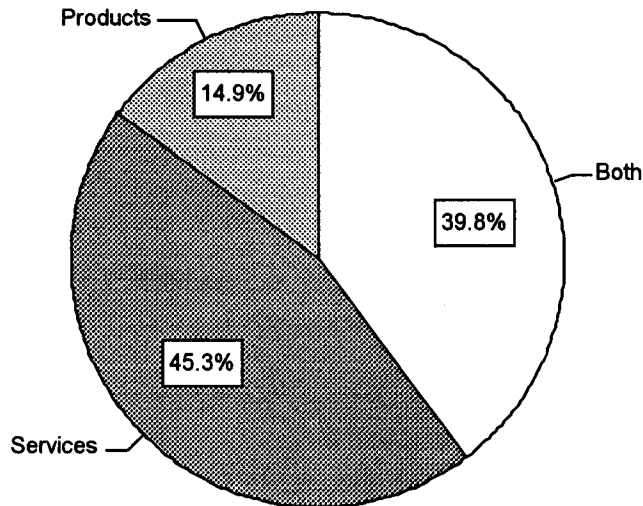
Percent of Responses by Focus

According to Table 4.5 and Chart 4.4, 85.1% of the responses were from service-focused organizations or organizations that focused on both products and services. Product-focused organizations made up only 14.9% of the responses.

Table 4.5
Percent of Responses by Focus

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Both	248	39.8	39.8	39.8
	Service	282	45.3	45.3	85.1
	Product	93	14.9	14.9	100.0
	Total	623	100.0	100.0	

Chart 4.4
Percent of Responses by Focus



Frequencies of KM Traits of Respondents by KM Stage

According to the Chart 4.5 and Table 4.6, around 70% of the respondents' organizations were involved in different stages of KM implementation. More precisely, the percentages of organizations with KM in place, setting up a KM program, and examining the need for KM are 29.2, 23.3, and 16.9 respectively. Slightly over 10% of the respondents stated that their organization either had decided against a KM program or had no KM program.

A significant number of respondents did not know if their organization had a KM program.

Chart 4.5
Frequencies of KM Traits of Respondents by KM Stage

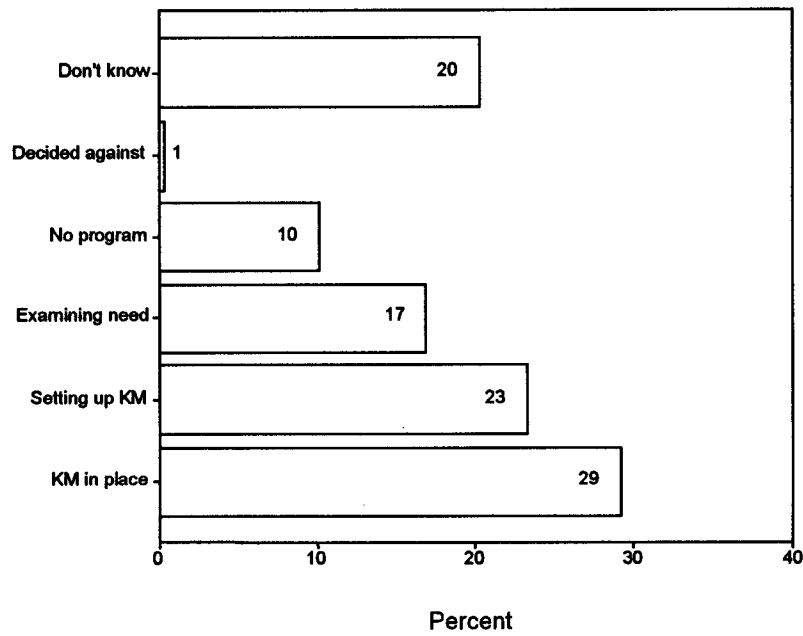


Table 4.6
Frequencies of KM Traits of Respondents by KM Stage

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Don't know	126	20.2	20.2	20.2
Decided against	2	.3	.3	20.5
No program	63	10.1	10.1	30.7
Examining need	105	16.9	16.9	47.5
Setting up KM	145	23.3	23.3	70.8
KM in place	182	29.2	29.2	100.0
Total	623	100.0	100.0	

Organizational Level That Promotes Knowledge Management

According to the Chart 4.6 and Table 4.7, over half (53.7%) of the respondents stated that senior, middle management, and board level were responsible for promoting KM in their organization. The total percentages of senior, middle management, and board level were 34.8%, 18.9%, and 1.6% respectively. Less than one fifth (17.8%) of the respondents selected the grassroots level, and 'across the spectrum' represented the organizational level that promotes KM. Those who did not know were 28.4% of the sample.

Chart 4.6
Organizational Level that Promotes Knowledge Management

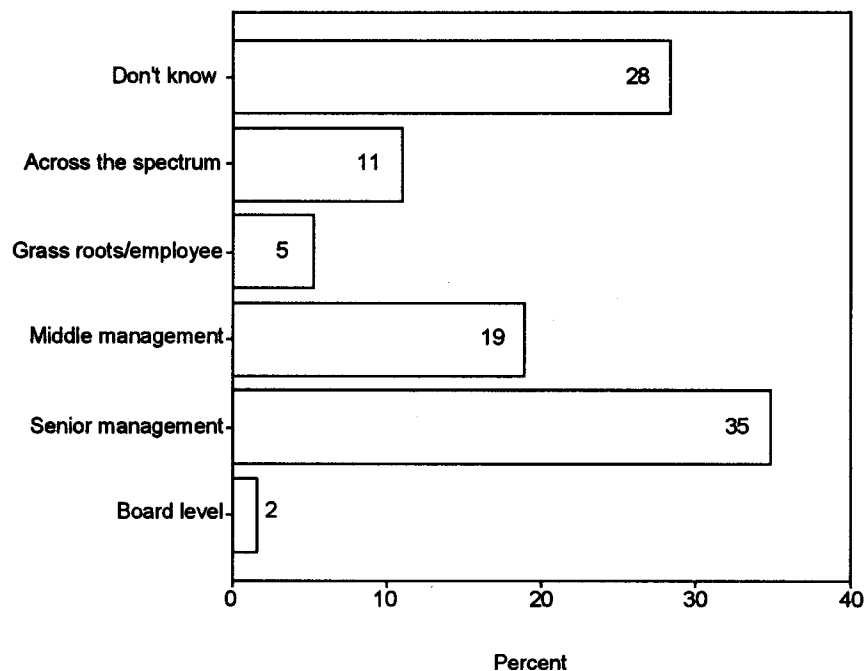


Table 4.7
Organizational Level that Promotes Knowledge Management

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Don't know	177	28.4	28.4	28.4
Across the spectrum	68	10.9	10.9	39.3
Grass roots/employees	33	5.3	5.3	44.6
Middle management	118	18.9	18.9	63.6
Senior management	217	34.8	34.8	98.4
Board level	10	1.6	1.6	100.0
Total	623	100.0	100.0	

Departmental or Functional Budget that Contributed Most to Knowledge Management

According to Chart 4.7 and Table 4.8, around 34% of the respondents expressed that IT and the training departments' budgets contributed more to KM than other departments. Other responses included marketing (5.8%), customer service (0.8%), human resources (8.0%), operations (5.1%), finance (3.9%), R&D (6.9%), and others (4.0%). Nearly one third (31.9%) of the sample expressed that they did not know which department or functional budget contributed the most.

Chart 4.7
Departmental or Functional Budget that Contributed Most to Knowledge Management

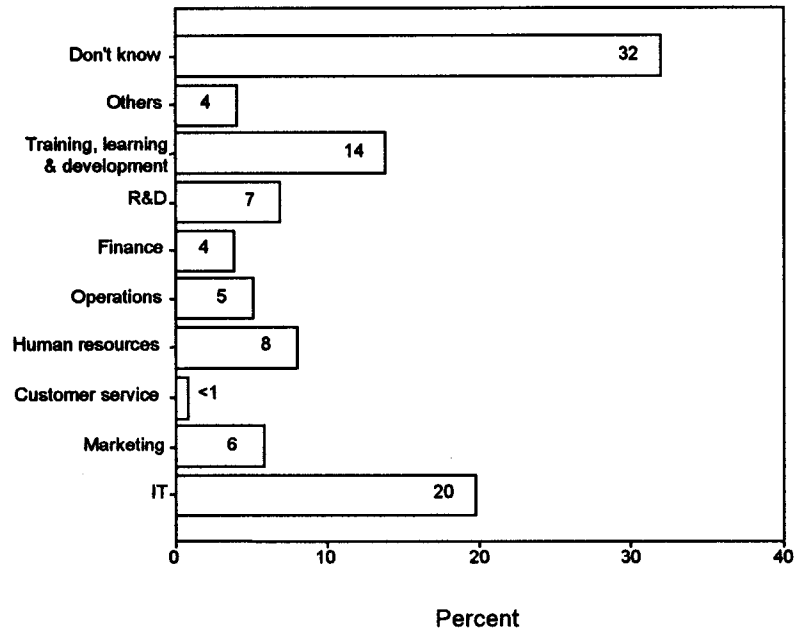


Table 4.8
Departmental or Functional Budget that Contributed Most to Knowledge Management

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Don't know	199	31.9	31.9	31.9
Others	25	4.0	4.0	36.0
Training, learning & development	86	13.8	13.8	49.8
R&D	43	6.9	6.9	56.7
Finance	24	3.9	3.9	60.5
Operations	32	5.1	5.1	65.7
Human resources	50	8.0	8.0	73.7
Customer service	5	.8	.8	74.5
Marketing	36	5.8	5.8	80.3
IT	123	19.7	19.7	100.0
Total	623	100.0	100.0	

Frequencies of KMF Ratio Variables

This section summarizes the responses to the items used to measure factors of successful KM programs. The items were measured on a five-point Likert scale, where: 1 =

strongly agree; 2 = agree; 3 = neutral; 4 = disagree; and, 5 = strongly disagree. Table 4.9 provides a summary of the items from the survey regarding KMF factors.

Table 4.9
Factors of Successful KM (KMF) Variables

1. Improvements in IT infrastructure to support KM
2. Organizational buy-in and support of KM
3. Leadership involvement, support, and advocating of KM
4. Rewards system based on employee KM participation and support
5. Climate of openness and thinking “outside the box”
6. Continuous education of employees
7. KM advocates and champions within the enterprise
8. Identifying enterprise core competencies and necessary knowledge domains to support those core competencies
9. Gathering and formalizing existing internal enterprise knowledge for present and future use
10. Gathering and formalizing existing external knowledge for present and future use
11. Developing an enterprise repository and database of information and knowledge to support KM
12. Allocating resources to manage enterprise knowledge as to relevance, accuracy, and value to the enterprise – ability to eliminate old, outdated, incorrect, or unnecessary information and knowledge
13. Effective and efficient methodology of distributing knowledge to employees (automating information and knowledge to be easily accessible to employees)
14. Developing and promoting employee sharing and collaboration

Improvements in IT Infrastructure to Support Knowledge Management

According to Chart 4.8 and Table 4.10, more than 83% of the respondents strongly agreed or agreed with the survey statement that “improvements in IT infrastructure to support KM is a success factor for KM.” Seventeen percent were neutral or disagreed. None strongly disagreed.

Chart 4.8
Improvements in IT to Support Knowledge Management

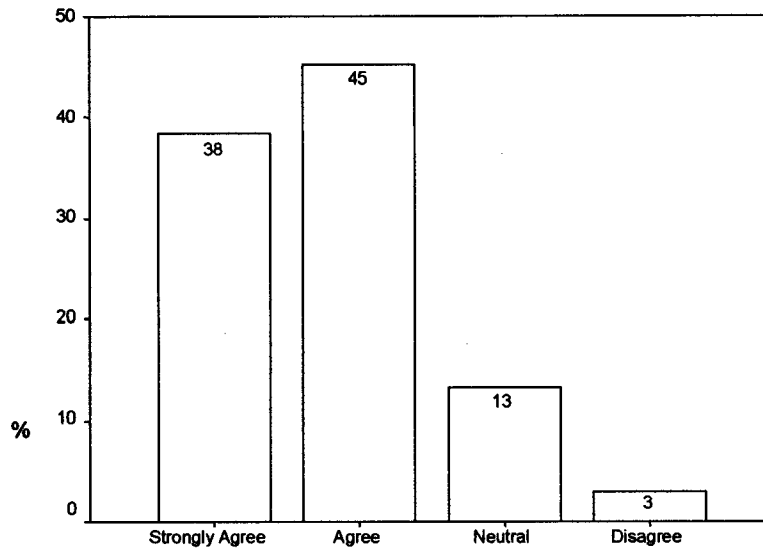


Table 4.10
Improvements in IT to Support Knowledge Management

		Frequency	Percent	Valid	Cumulative Percent
Valid	Strongly Agree	239	38.4	38.4	38.4
	Agree	282	45.3	45.3	83.6
	Neutral	83	13.3	13.3	97.0
	Disagree	19	3.0	3.0	100.0
	Total	623	100.0	100.0	

Organizational Buy-In and Support of Knowledge Management

According to Chart 4.9 and Table 4.11, 78% of the respondents strongly agreed or agreed with the survey statement, “organizational buy-in and support of KM is a success factor

for KM.” Seventeen percent were neutral, 3.9% disagreed; and, only 0.8% strongly disagreed.

Chart 4.9
Organizational Buy-In and Support of Knowledge Management

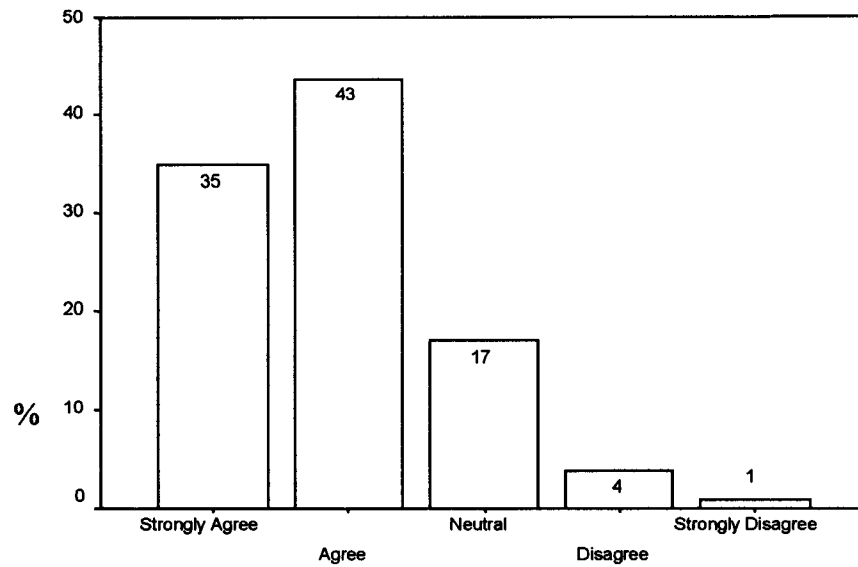


Table 4.11
Organizational Buy-In and Support of Knowledge Management

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	217	34.8	34.8	34.8
Agree	271	43.5	43.5	78.3
Neutral	106	17.0	17.0	95.3
Disagree	24	3.9	3.9	99.2
Strongly Disagree	5	.8	.8	100.0
Total	623	100.0	100.0	

Leadership Involvement, Support, and Advocating of Knowledge Management

According to Chart 4.10 and Table 4.12, 84.4% of the respondents strongly agreed or agreed with the survey statement, “leadership involvement, support, and advocating of KM is a success factor for KM.” Only 15.5% were neutral, disagreed, or strongly disagreed (12.8%, 2.4%, and 0.3% respectively).

Chart 4.10
Leadership Involvement, Support, and Advocating of Knowledge Management

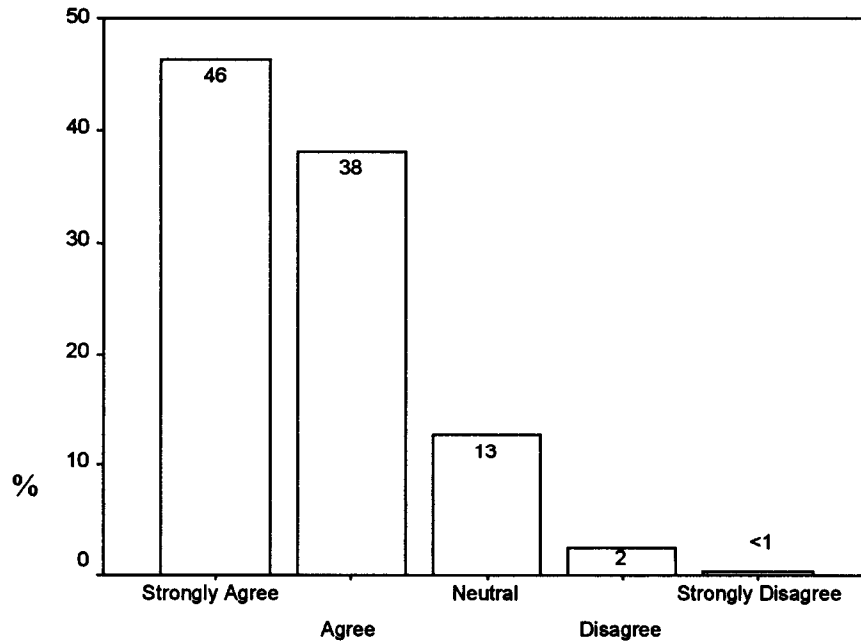


Table 4.12
Leadership Involvement, Support, and Advocating of
Knowledge Management

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	289	46.4	46.4	46.4
Agree	237	38.0	38.0	84.4
Neutral	80	12.8	12.8	97.3
Disagree	15	2.4	2.4	99.7
Strongly Disagree	2	.3	.3	100.0
Total	623	100.0	100.0	

Rewards System Based on Employee Knowledge Management Participation and Support

According to Chart 4.11 and Table 4.13, 67.9% of the respondents strongly agreed or agreed with the survey statement, “rewards system based on employee KM participation and support is a success factor for KM.” Twenty-five and two tenths percent were neutral, 5.9% disagreed, and only 1.0% strongly disagreed.

Chart 4.11
Rewards System Based on Employee KM Participation and Support

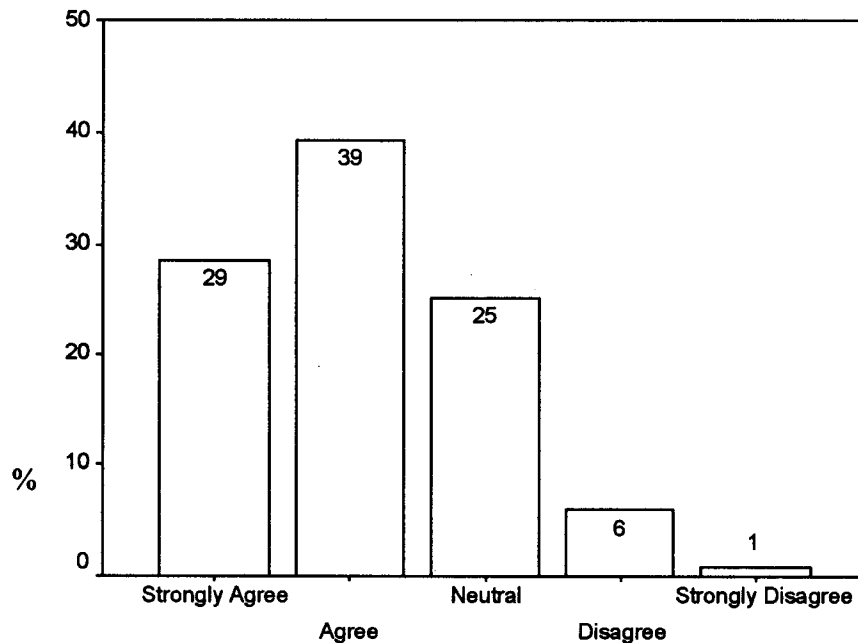


Table 4.13
Rewards System Based on Employee KM
Participation and Support

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	178	28.6	28.6	28.6
Agree	245	39.3	39.3	67.9
Neutral	157	25.2	25.2	93.1
Disagree	37	5.9	5.9	99.0
Strongly Disagree	6	1.0	1.0	100.0
Total	623	100.0	100.0	

Climate of Openness and Thinking “Outside the Box”

According to Chart 4.12 and Table 4.14, 73.5% of the respondents strongly agreed or agreed with the survey statement, “openness and thinking outside the box is a success factor for KM.” Twenty six and four tenths percent were neutral, disagreed, or strongly disagreed (21.3%, 4.5%, and 0.6% respectively).

Chart 4.12
Openness and Thinking Outside the Box

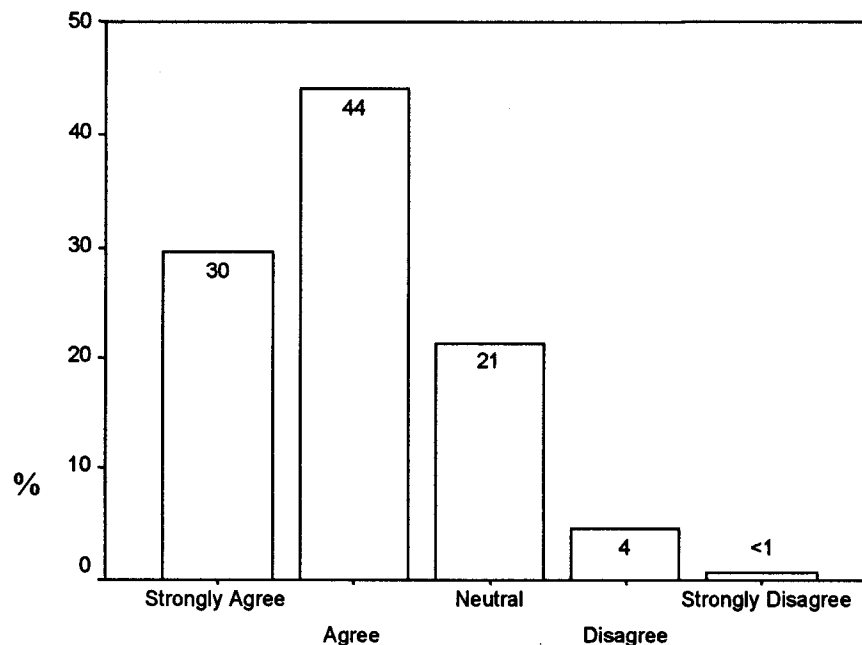


Table 4.14
Openness and Thinking Outside the Box

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	184	29.5	29.5	29.5
Agree	274	44.0	44.0	73.5
Neutral	133	21.3	21.3	94.9
Disagree	28	4.5	4.5	99.4
Strongly Disagree	4	.6	.6	100.0
Total	623	100.0	100.0	

Continuous Education of Employees

According to Chart 4.13 and Table 4.15, 83.3% of the respondents strongly agreed or agreed with the survey statement, “continuous education of employees is a success factor for KM.” Fourteen and eight tenths percent were neutral, 1.4% disagreed, and 0.5% strongly disagreed.

Chart 4.13
Continuous Education of Employees

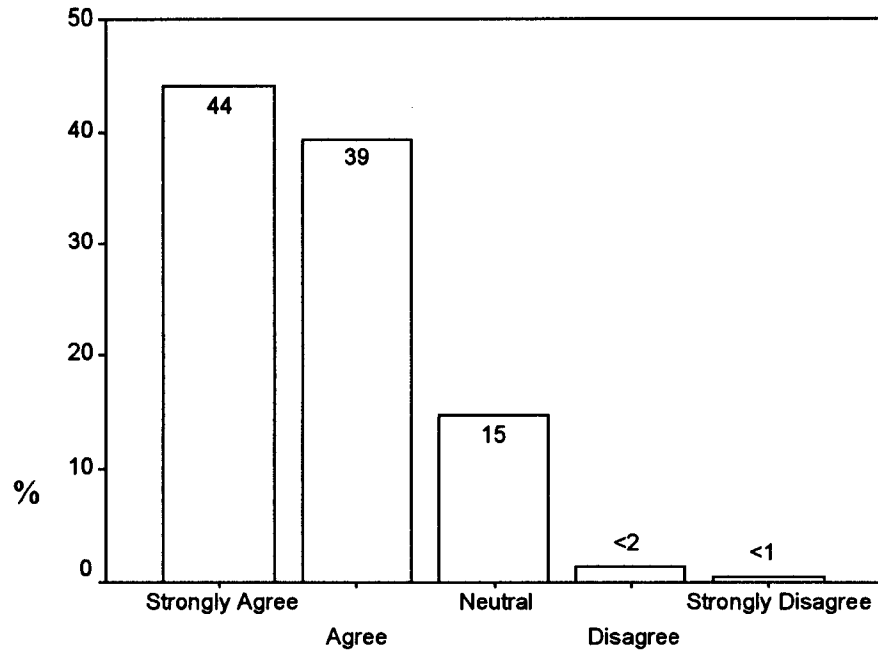


Table 4.15
Continuous Education of Employees

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	274	44.0	44.0	44.0
Agree	245	39.3	39.3	83.3
Neutral	92	14.8	14.8	98.1
Disagree	9	1.4	1.4	99.5
Strongly Disagree	3	.5	.5	100.0
Total	623	100.0	100.0	

KM Advocates and Champions within the Enterprise

According to Chart 4.14 and Table 4.16, 74.0% of the respondents strongly agreed or agreed with the survey statement, “KM advocates and champions within the enterprise is a success factor for KM.” Twenty two and two tenths percent were neutral, 3.0% disagreed, and 0.8% strongly disagreed.

Chart 4.14
KM Advocates and Champions within the Enterprise

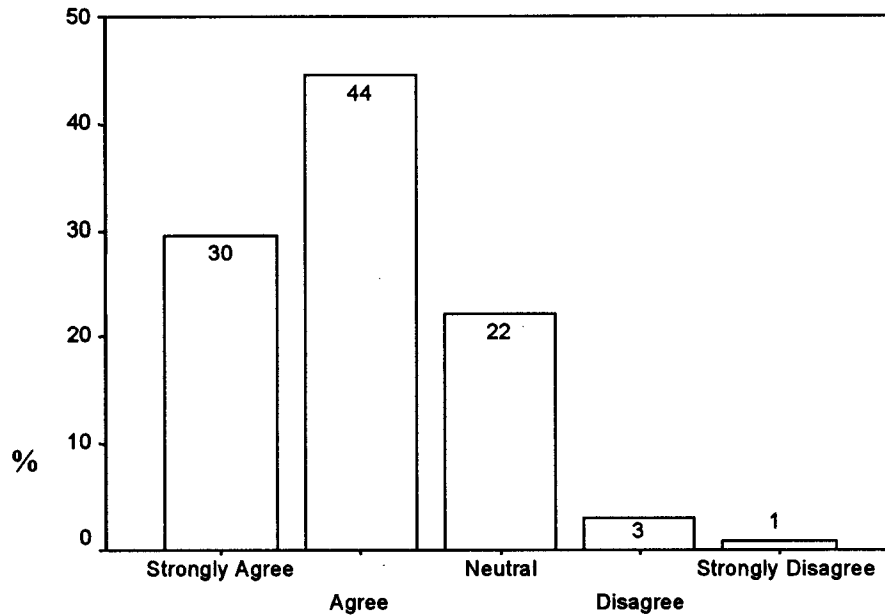


Table 4.16
KM Advocates and Champions within the Enterprise

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	184	29.5	29.5	29.5
Agree	277	44.5	44.5	74.0
Neutral	138	22.2	22.2	96.1
Disagree	19	3.0	3.0	99.2
Strongly Disagree	5	.8	.8	100.0
Total	623	100.0	100.0	

Identifying Enterprise Core Competencies and Necessary Knowledge Domains to Support Those Core Competencies

According to Chart 4.15 and Table 4.17, 78.2% of the respondents strongly agreed or agreed with the survey statement, “identifying core competencies and necessary knowledge to support core competencies is a success factor for KM.” Nineteen and six tenths percent were neutral, 2.1% disagreed, and 0.2% strongly disagreed.

Chart 4.15
Identify Core Competencies and Necessary Knowledge to Support Core Competencies

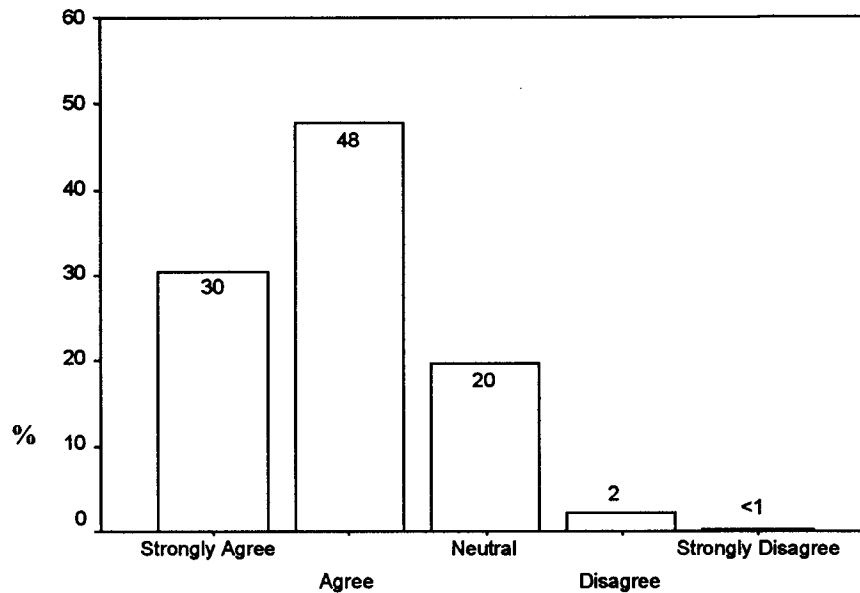


Table 4.17
Identify Core Competencies and Necessary Knowledge to Support Core Competencies

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	190	30.5	30.5	30.5
Agree	297	47.7	47.7	78.2
Neutral	122	19.6	19.6	97.8
Disagree	13	2.1	2.1	99.8
Strongly Disagree	1	.2	.2	100.0
Total	623	100.0	100.0	

Gathering and Formalizing Existing Internal Enterprise Knowledge for Present and Future Use

According to Chart 4.16 and Table 4.18, 80.4% of the respondents strongly agreed or agreed with the survey statement, “gathering and formalize existing internal knowledge for now and future is a success factor for KM.” Sixteen and seven tenths percent were neutral, 2.7%% disagreed, and only 0.2% strongly disagreed.

Chart 4.16
Gathering and Formalize Existing Internal Knowledge for Now and Future

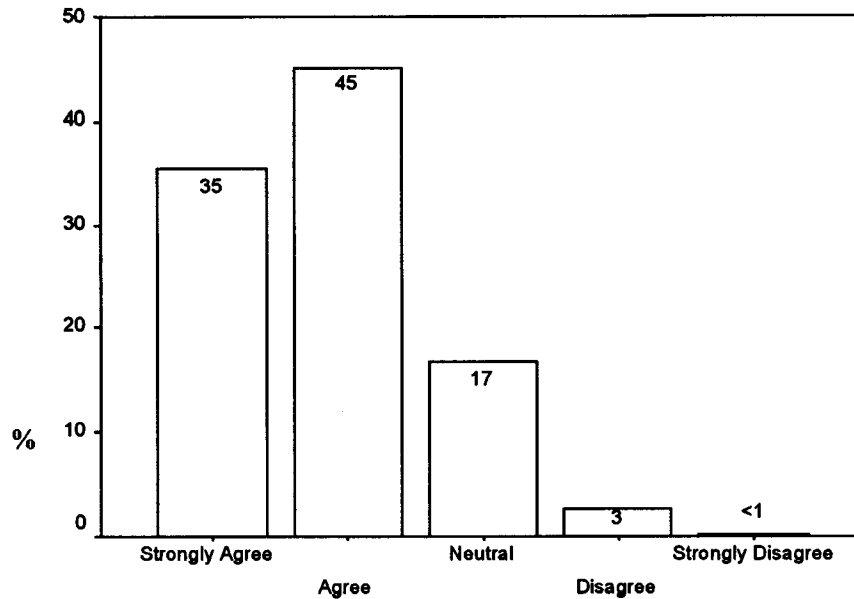


Table 4.18
Gathering and Formalize Existing Internal Knowledge for Now and Future

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	220	35.3	35.3	35.3
Agree	281	45.1	45.1	80.4
Neutral	104	16.7	16.7	97.1
Disagree	17	2.7	2.7	99.8
Strongly Disagree	1	.2	.2	100.0
Total	623	100.0	100.0	

Gathering and Formalizing Existing External Knowledge for Present and Future Use

According to Chart 4.17 and Table 4.19, 77.8% of the respondents strongly agreed or agreed with the survey statement, “gathering and formalize existing external knowledge for now and future is a success factor for KM.” Eighteen and nine tenths percent were neutral, 2.7% disagreed, and 0.5% strongly disagreed.

Chart 4.17
Gathering and Formalize Existing External Knowledge for Now and Future

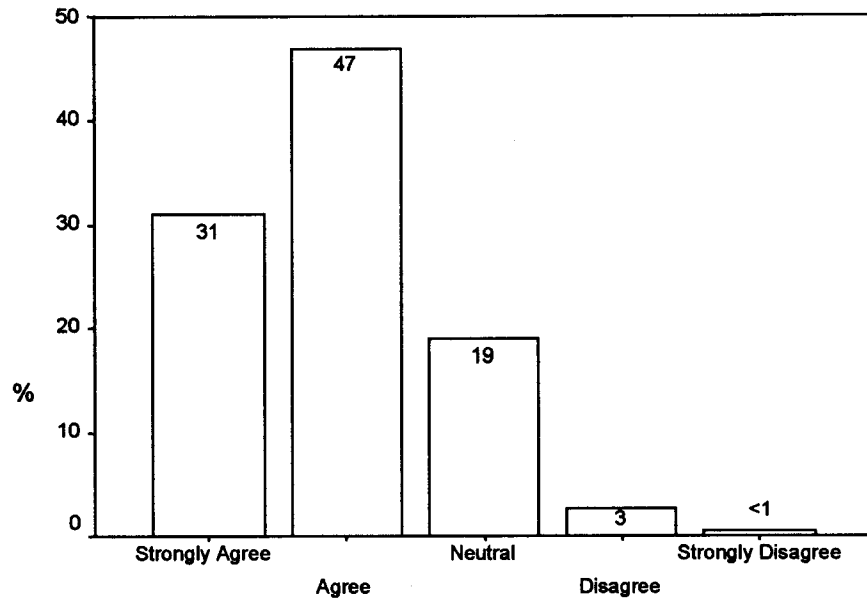


Table 4.19
Gathering and Formalize Existing External Knowledge for Now and Future

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	193	31.0	31.0	31.0
Agree	292	46.9	46.9	77.8
Neutral	118	18.9	18.9	96.8
Disagree	17	2.7	2.7	99.5
Strongly Disagree	3	.5	.5	100.0
Total	623	100.0	100.0	

Developing an Enterprise Repository and Database of Information and Knowledge to Support Knowledge Management

According to Chart 4.18 and Table 4.20, 82.0% of the respondents strongly agreed or agreed with the survey statement, “develop repository and database of information and knowledge to support KM is a success factor for KM.” Fifteen and two tenths percent were neutral, 2.6% disagreed, and only 0.2% strongly disagreed.

Chart 4.18
Develop Repository and Database of Information and Knowledge to Support Knowledge Management

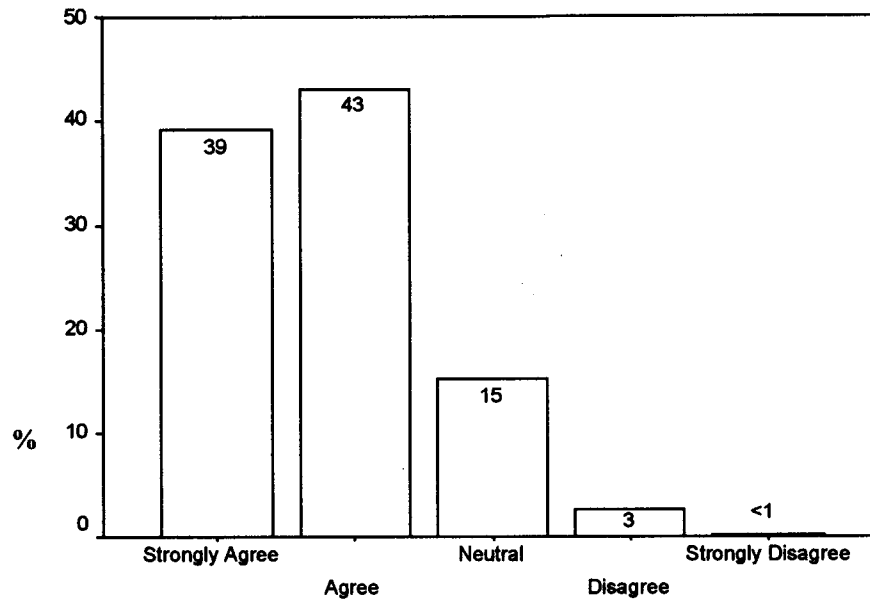


Table 4.20
Develop Repository and Database of Information and Knowledge to Support Knowledge Management

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	243	39.0	39.0	39.0
Agree	268	43.0	43.0	82.0
Neutral	95	15.2	15.2	97.3
Disagree	16	2.6	2.6	99.8
Strongly Disagree	1	.2	.2	100.0
Total	623	100.0	100.0	

Allocating Resources to Manage Enterprise Knowledge as to Relevance, Accuracy, and Value to the Enterprise – Ability to Eliminate Old, Outdated, Incorrect, or Unnecessary Information and Knowledge

According to Chart 19 and Table 4.21, 73.5% of the respondents strongly agreed or agreed with the survey statement, “allocating resources to manage enterprise knowledge is a success factor for KM.” Twenty three and three tenths percent were neutral, 2.7% disagreed, and only 0.5% strongly disagreed.

Chart 4.19
Allocate Resources to Manage Enterprise Knowledge

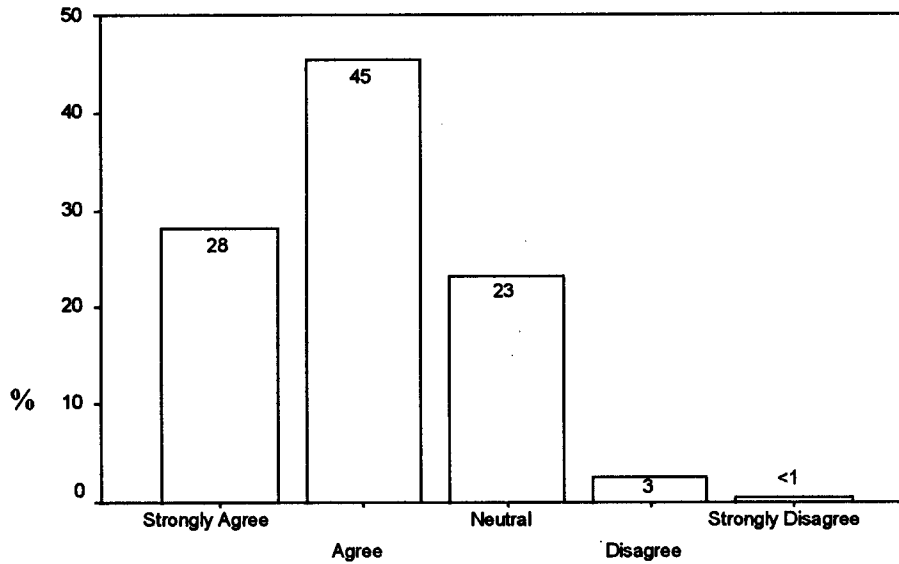


Table 4.21
Allocate Resources to Manage Enterprise Knowledge

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	175	28.1	28.1	28.1
Agree	283	45.4	45.4	73.5
Neutral	145	23.3	23.3	96.8
Disagree	17	2.7	2.7	99.5
Strongly Disagree	3	.5	.5	100.0
Total	623	100.0	100.0	

Effective and Efficient Methodology of Distributing Knowledge to Employees (Automating Information and Knowledge to be Easily Accessible to Employees)

According to Chart 4.20 and Table 4.22, 83.8% of the respondents strongly agreed or agreed with the survey statement, “effective and efficient ways of distributing knowledge to employee is a success factor for KM.” Thirteen percent were neutral, 2.6% disagreed; and only 0.6% strongly disagreed.

Chart 4.20
Effective and Efficient Ways of Distributing Knowledge to Employees

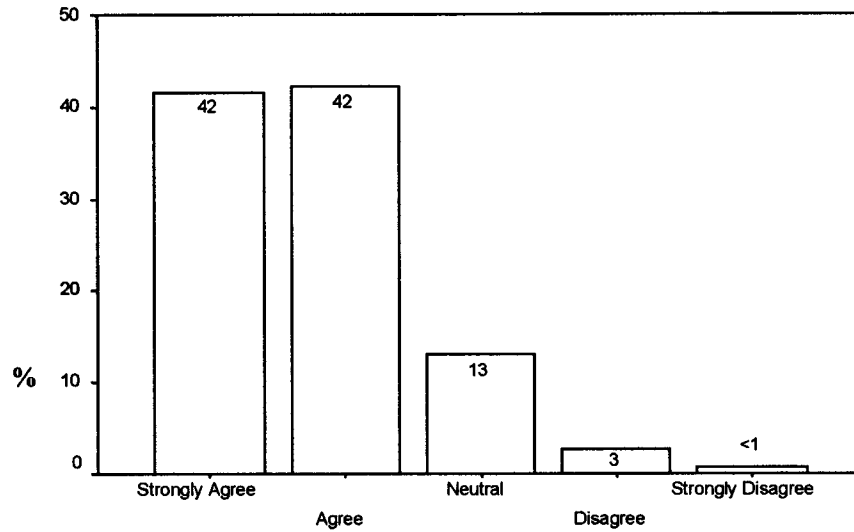


Table 4.22
Effective and Efficient Ways of Distributing Knowledge to Employees

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	259	41.6	41.6	41.6
Agree	263	42.2	42.2	83.8
Neutral	81	13.0	13.0	96.8
Disagree	16	2.6	2.6	99.4
Strongly Disagree	4	.6	.6	100.0
Total	623	100.0	100.0	

Developing and Promoting Employee Sharing and Collaboration

According to Chart 4.21 and Table 4.23, 80.4% of the respondents strongly agreed or agreed with the survey statement, “developing and promoting employee sharing and collaboration is a success factor for KM.” Seventeen and two tenths percent were neutral, 1.6% disagreed; and only 0.8% strongly disagreed.

Chart 4.21
Developing and Promoting Employee Sharing and Collaboration

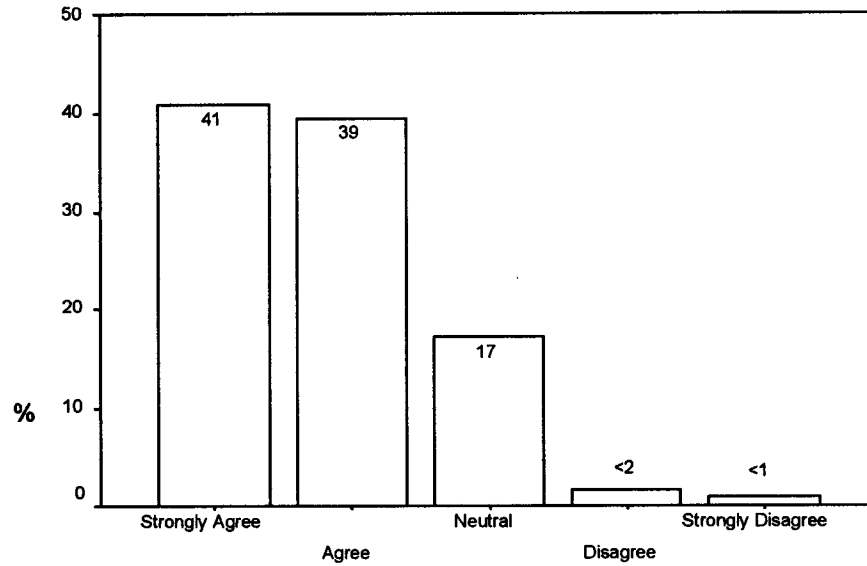


Table 4.23
Developing and Promoting Employee Sharing and Collaboration

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	255	40.9	40.9	40.9
Agree	246	39.5	39.5	80.4
Neutral	107	17.2	17.2	97.6
Disagree	10	1.6	1.6	99.2
Strongly Disagree	5	.8	.8	100.0
Total	623	100.0	100.0	

Frequencies of KME Variables

This section summarizes the responses to the items used to measure expected benefits to the enterprise from a KM program. The items were measured on a five-point Likert scale where: 1 = strongly agree; 2 = agree; 3 = neutral; 4 = disagree; and, 5 = strongly disagree.

Table 4.24 provides a summary of the items from the survey regarding the expected benefits to their enterprise from KM.

Table 4.24
Knowledge Management Expectations (KME)
Variables

Expected Benefit to Your Enterprise from KM
1. Stimulation and motivation of employees
2. Formalized knowledge transfer system established (Best practices, lessons learned)
3. Better on-the-job training of employees
4. Enhanced enterprise innovation and creativity
5. Improved overall enterprise performance
6. Enhanced client relations - better client interaction
7. Development of an entrepreneurial culture for enterprise growth and success
8. Improved employee retention
9. Improved ability to sustain a competitive advantage
10. Enhanced transfer of knowledge from one employee to another
11. Means to identify industry best practices
12. Better methods for enterprise-wide problem solving
13. Enhanced the development of business strategies
14. Enhanced business development and the creation of enterprise opportunities
15. Enhanced and streamlined internal administrative processes

Stimulation and Motivation of Employees

According to Chart 4.22 and Table 4.25, 73.5% of the respondents strongly agreed or agreed with the survey statement, “stimulation and motivation of employee is an expected benefit to the enterprise from KM.” Twenty two and eight tenths percent were neutral, and 3.7% disagreed. None strongly disagreed.

Chart 4.22
Stimulate and Motivate Employee

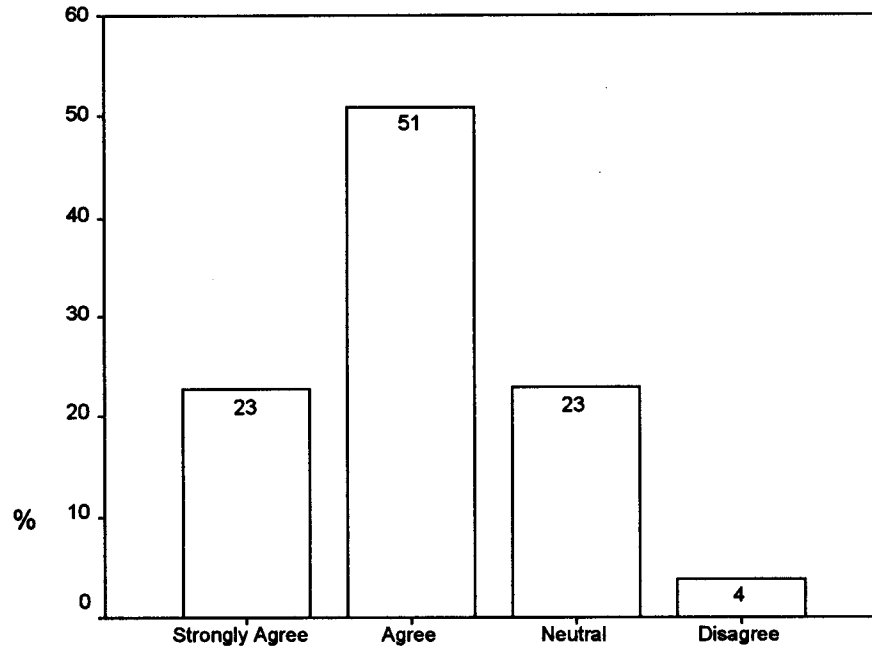


Table 4.25
Stimulate and Motivate Employee

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	141	22.6	22.6	22.6
Agree	317	50.9	50.9	73.5
Neutral	142	22.8	22.8	96.3
Disagree	23	3.7	3.7	100.0
Total	623	100.0	100.0	

Formalized Knowledge Transfer System Established (Best practices, Lessons Learned)

According to Chart 4.23 and Table 4.25, 80.7% of the respondents strongly agreed or agreed with the survey statement, “establishes formal knowledge transfer system is an expected benefit to the enterprise from KM.” Seventeen and five tenths percent were neutral, 1.4% disagreed, and only 0.3% strongly disagreed.

Chart 4.23
Establish Formal Knowledge Transfer System

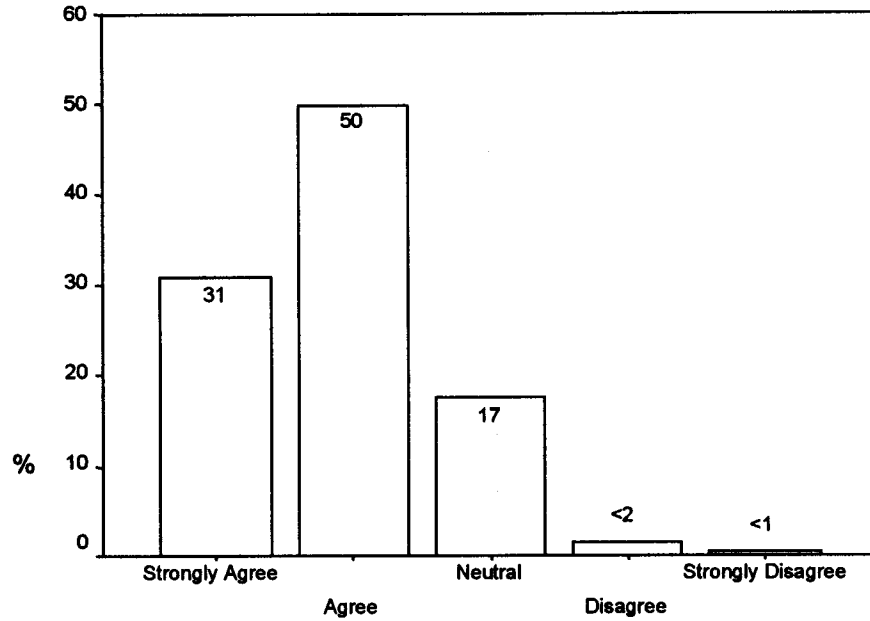


Table 4.26
Establish Formal Knowledge Transfer System

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	192	30.8	30.8	30.8
Agree	311	49.9	49.9	80.7
Neutral	109	17.5	17.5	98.2
Disagree	9	1.4	1.4	99.7
Strongly Disagree	2	.3	.3	100.0
Total	623	100.0	100.0	

Better On-the-Job Training of Employees

According to Chart 4.24 and Table 4.27, 80.4% of the respondents strongly agreed or agreed with the survey statement, “better on-the-job training is an expected benefit to the enterprise from KM.” Fourteen and nine tenths percent 14.9 were neutral and 4.3% disagreed. None strongly disagreed.

Chart 4.24
Better On-the-Job Training

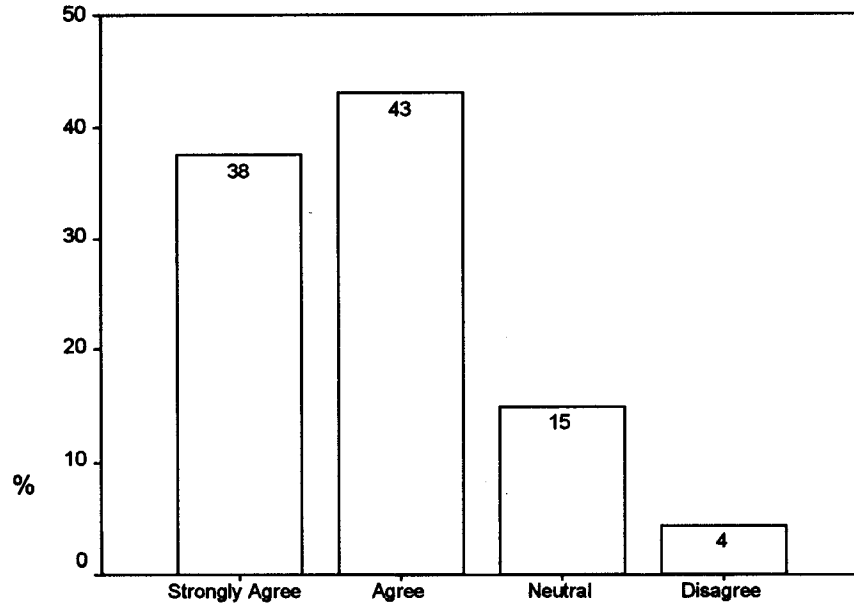


Table 4.27
Better On-the-Job Training

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	234	37.6	37.6	37.6
Agree	269	43.2	43.2	80.7
Neutral	93	14.9	14.9	95.7
Disagree	27	4.3	4.3	100.0
Total	623	100.0	100.0	

Enhanced Enterprise Innovation and Creativity

According to Chart 4.25 and Table 4.28, 74.2% of the respondents strongly agreed or agreed with the survey statement, “enhanced enterprise innovation and creativity is an expected benefit to the enterprise from KM.” Twenty and nine tenths percent were neutral, 4.5% disagreed; and only 0.5% strongly disagreed.

Chart 4.25
Enhance Innovation and Creativity

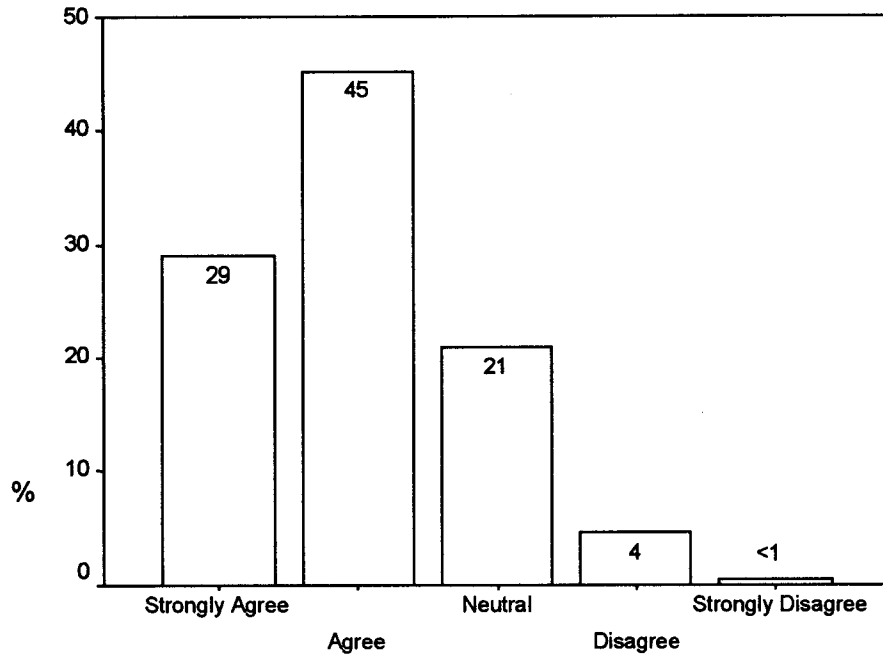


Table 4.28
Enhance Innovation and Creativity

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	181	29.1	29.1	29.1
Agree	281	45.1	45.1	74.2
Neutral	130	20.9	20.9	95.0
Disagree	28	4.5	4.5	99.5
Strongly Disagree	3	.5	.5	100.0
Total	623	100.0	100.0	

Improved Overall Enterprise Performance

According to Chart 4.26 and Table 4.29, 82.0% of respondents strongly agreed or agreed with the survey statement, “improved overall performance is an expected benefit to the enterprise from KM.” Fourteen and nine tenths percent were neutral, 2.4% disagreed; and only 0.6% strongly disagreed.

Chart 4.26
Improved Overall Performance

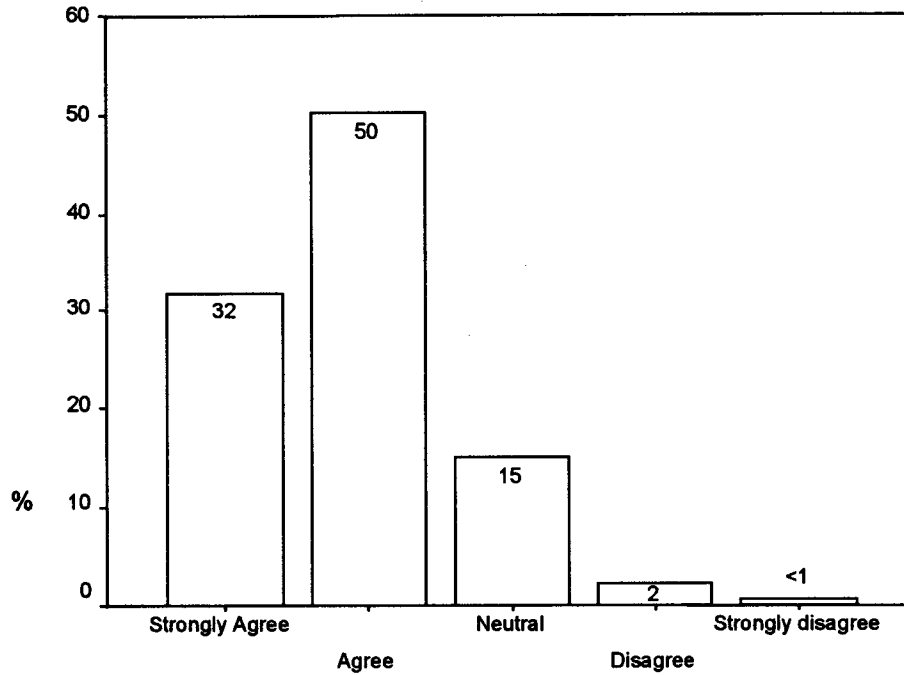


Table 4.29
Improved Overall Performance

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	198	31.8	31.8	31.8
Agree	313	50.2	50.2	82.0
Neutral	93	14.9	14.9	97.0
Disagree	15	2.4	2.4	99.4
Strongly Disagree	4	.6	.6	100.0
Total	623	100.0	100.0	

Enhanced Client Relations - Better Client Interaction

According to Chart 4.27 and Table 4.30, 72.1% of the respondents strongly agreed or agreed with the survey statement, “better client relations is an expected benefit to the enterprise from KM.” Twenty three and six tenths percent were neutral; 4.0% disagreed; and only 0.3% strongly disagreed.

Chart 4.27
Better Client Relations

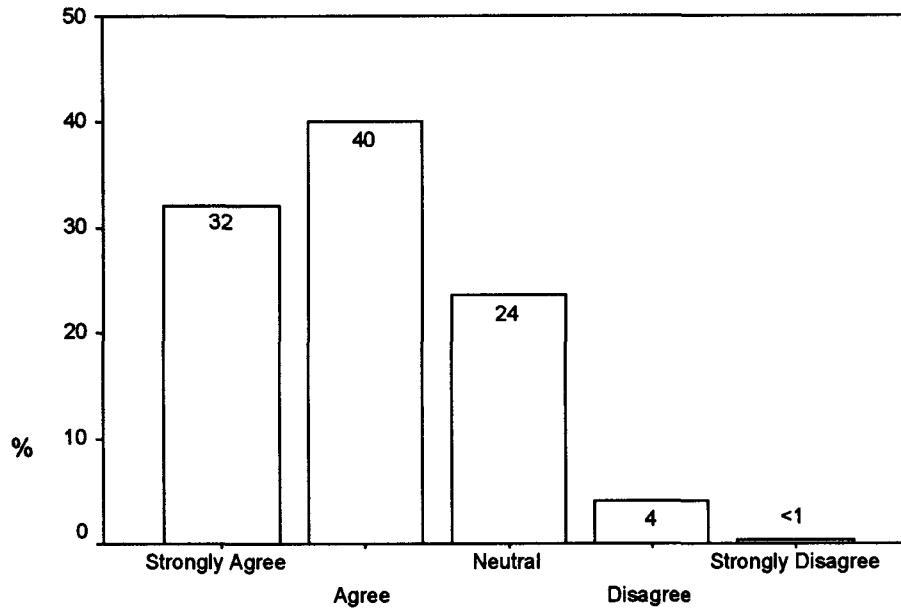


Table 4.30
Better Client Relations

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	200	32.1	32.1	32.1
Agree	249	40.0	40.0	72.1
Neutral	147	23.6	23.6	95.7
Disagree	25	4.0	4.0	99.7
Strongly	2	.3	.3	100.0
Total	623	100.0	100.0	

Development of an Entrepreneurial Culture for Enterprise Growth and Success

According to Chart 4.28 and Table 4.31, 68.1% of the respondents strongly agreed or agreed with the survey statement, “develop culture for growth and success is an expected benefit to the enterprise from KM.” Twenty five and eight tenths percent were neutral, 5.3% disagreed; and only 0.8% strongly disagreed.

Chart 4.28
Develop Culture for Growth and Success

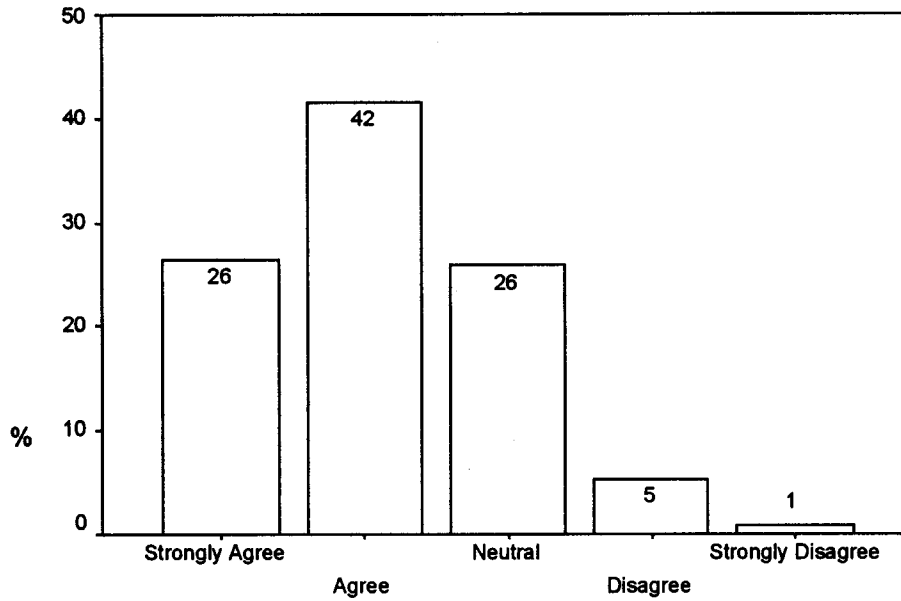


Table 4.31
Develop Culture for Growth and Success

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	165	26.5	26.5	26.5
Agree	259	41.6	41.6	68.1
Neutral	161	25.8	25.8	93.9
Disagree	33	5.3	5.3	99.2
Strongly Disagree	5	.8	.8	100.0
Total	623	100.0	100.0	

Improved Employee Retention

According to Chart 4.29 and Table 4.32, 64.5% of the respondents strongly agreed or agreed with the survey statement, “improved employee retention is an expected benefit to the enterprise from KM.” Twenty eight and one tenth percent were neutral, 6.3% disagreed, and 1.1% strongly disagreed.

Chart 4.29
Improved Employee Retention

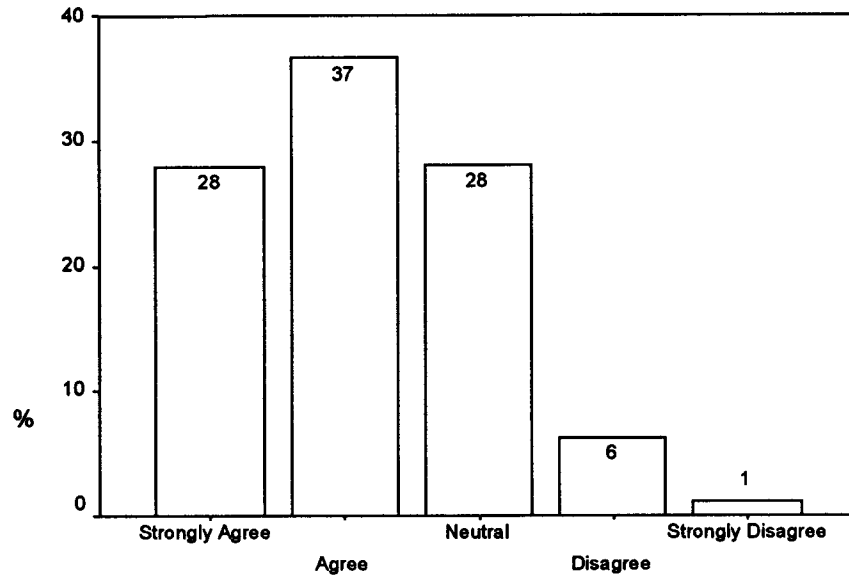


Table 4.32
Improved Employee Retention

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	174	27.9	27.9	27.9
Agree	228	36.6	36.6	64.5
Neutral	175	28.1	28.1	92.6
Disagree	39	6.3	6.3	98.9
Strongly Disagree	7	1.1	1.1	100.0
Total	623	100.0	100.0	

Improved Ability to Sustain a Competitive Advantage

According to Chart 4.30 and Table 4.33, 81.9% of the respondents strongly agreed or agreed with the survey statement, “improved ability to sustain a competitive advantage is an expected benefit to the enterprise from KM.” Fourteen and nine tenths percent were neutral, 34.0% disagreed, and only 0.2% strongly disagreed.

Chart 4.30
Improved Ability to Sustain a Competitive Advantage

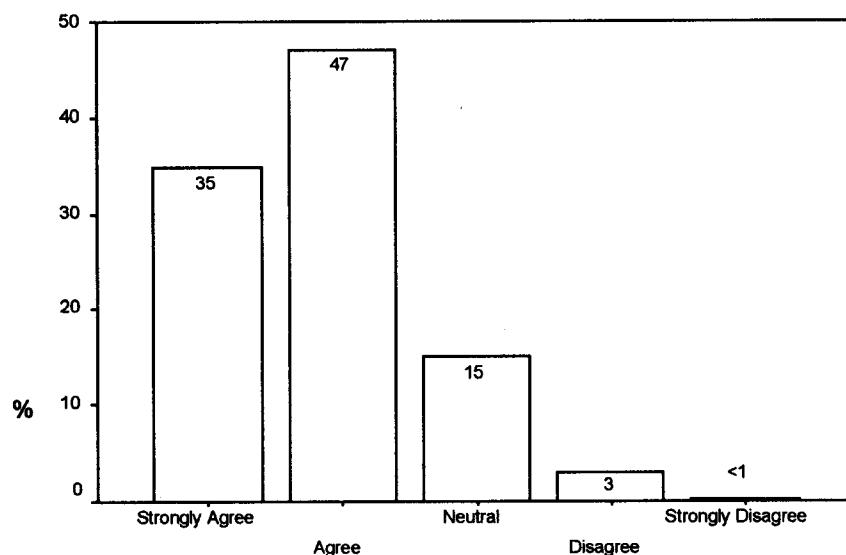


Table 4.33
Improved Ability to Sustain a Competitive Advantage

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	217	34.8	34.8	34.8
Agree	293	47.0	47.0	81.9
Neutral	93	14.9	14.9	96.8
Disagree	19	3.0	3.0	99.8
Strongly	1	.2	.2	100.0
Total	623	100.0	100.0	

Enhanced Transfer of Knowledge from One Employee to Another

According to Chart 4.31 and Table 4.34, 80.9% of the respondents strongly agreed or agreed with the survey statement, “enhance knowledge transfer from one to another is an expected benefit to the enterprise from KM.” Fifteen and seven tenths percent were neutral; 3.2% disagreed, and 0.2% strongly disagreed.

Chart 4.31
Enhance Knowledge Transfer from One to Another

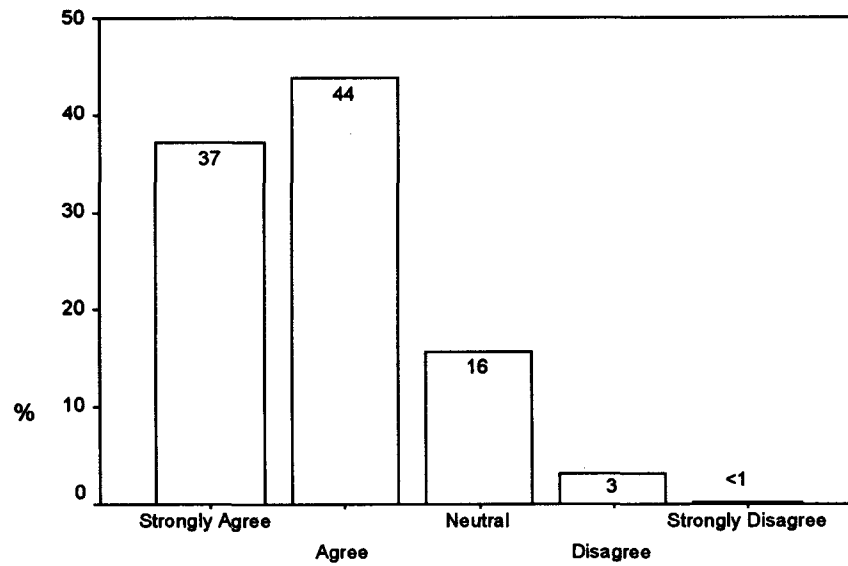


Table 4.34
Enhance Knowledge Transfer from One to Another

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	231	37.1	37.1	37.1
Agree	273	43.8	43.8	80.9
Neutral	98	15.7	15.7	96.6
Disagree	20	3.2	3.2	99.8
Strongly Disagree	1	.2	.2	100.0
Total	623	100.0	100.0	

Means to Identify Industry Best Practices

According to Chart 4.32 and Table 4.35, 66.5% of the respondents strongly agreed or agreed with the survey statement, “means to identify best practice is an expected benefit to the enterprise from KM.” Twenty-eight and three tenths percent were neutral, 4.8% disagreed, and only 0.5% strongly disagreed.

Chart 4.32
Means to Identify Best Practice

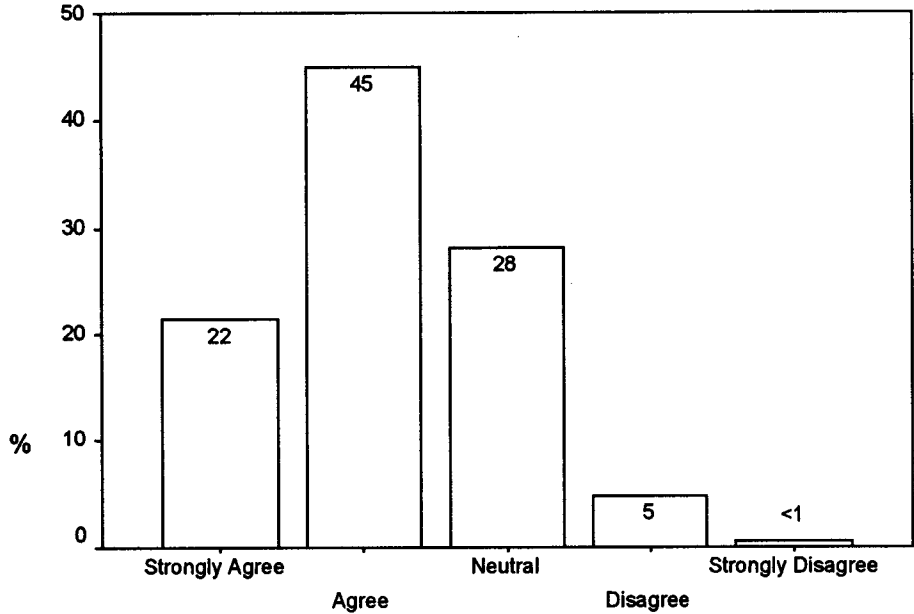


Table 4.35
Means to Identify Best Practice

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	134	21.5	21.5	21.5
Agree	280	44.9	44.9	66.5
Neutral	176	28.3	28.3	94.7
Disagree	30	4.8	4.8	99.5
Strongly Disagree	3	.5	.5	100.0
Total	623	100.0	100.0	

Better Methods for Enterprise-Wide Problem Solving

According to Chart 4.33 and Table 4.36, 75% of the respondents strongly agreed or agreed with the survey statement, “better problem solving is an expected benefit to the enterprise from KM.” Twenty and one tenth percent were neutral; 4.0% disagreed, and 1.0% strongly disagreed.

Chart 4.33
Better Problem Solving

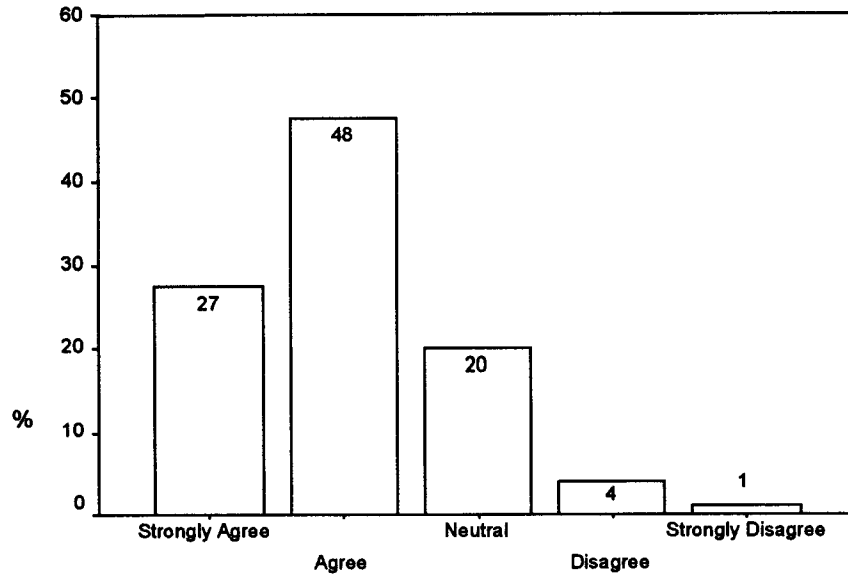


Table 4.36
Better Problem Solving

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	171	27.4	27.4	27.4
Agree	296	47.5	47.5	75.0
Neutral	125	20.1	20.1	95.0
Disagree	25	4.0	4.0	99.0
Strongly Disagree	6	1.0	1.0	100.0
Total	623	100.0	100.0	

Enhance the Development of Business Strategies

According to Chart 4.34 and Table 4.37, 72.1% of the respondents strongly agreed or agreed with the survey statement, “enhancing business strategies is an expected benefit to the enterprise from KM.” Twenty two and five tenths percent were neutral, 4.8% disagreed, and 0.6% strongly disagreed.

Chart 4.34
Enhance Business Strategies

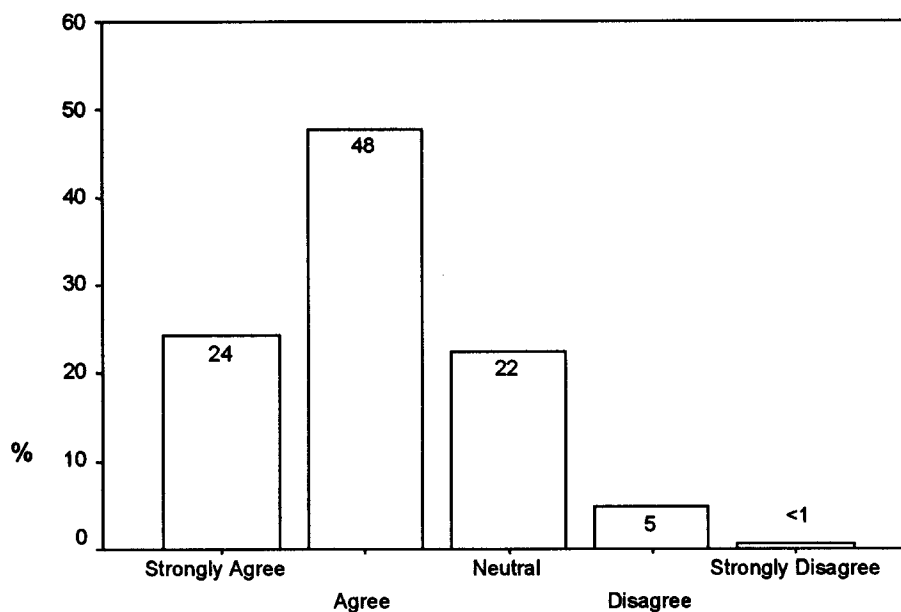


Table 4.37
Enhance Business Strategies

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	151	24.2	24.2	24.2
Agree	298	47.8	47.8	72.1
Neutral	140	22.5	22.5	94.5
Disagree	30	4.8	4.8	99.4
Strongly Disagree	4	.6	.6	100.0
Total	623	100.0	100.0	

Enhance Business Development and the Creation of Enterprise Opportunities

According to Chart 4.35 and Table 4.38, 70.3% of the respondents strongly agreed or agreed with the survey statement, “enhance development and creation of enterprise opportunities is an expected benefit to the enterprise from KM.” Twenty-four and six tenths percent were neutral, 4.3% disagreed, and 0.8% strongly disagreed.

Chart 4.35
Enhance Development and Creation of Enterprise Opportunities

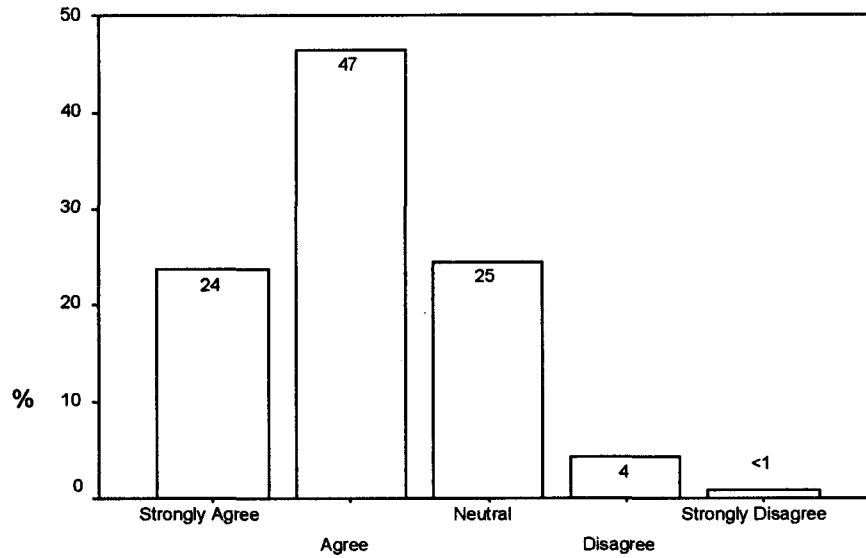


Table 4.38
Enhance Development and Creation of Enterprise Opportunities

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	148	23.8	23.8	23.8
Agree	290	46.5	46.5	70.3
Neutral	153	24.6	24.6	94.9
Disagree	27	4.3	4.3	99.2
Strongly Disagree	5	.8	.8	100.0
Total	623	100.0	100.0	

Enhanced and Streamlined Internal Administrative Processes

According to Chart 4.36 and Table 4.39, 71.9% of the respondents strongly agreed or agreed with the survey statement, “enhanced/streamlined internal administration processes is an expected benefit to the enterprise from KM.” Twenty and nine tenths percent were neutral, 6.3% disagreed, and 1.0% strongly disagreed.

Chart 4.36
Enhanced and Streamlined Internal Administration Processes

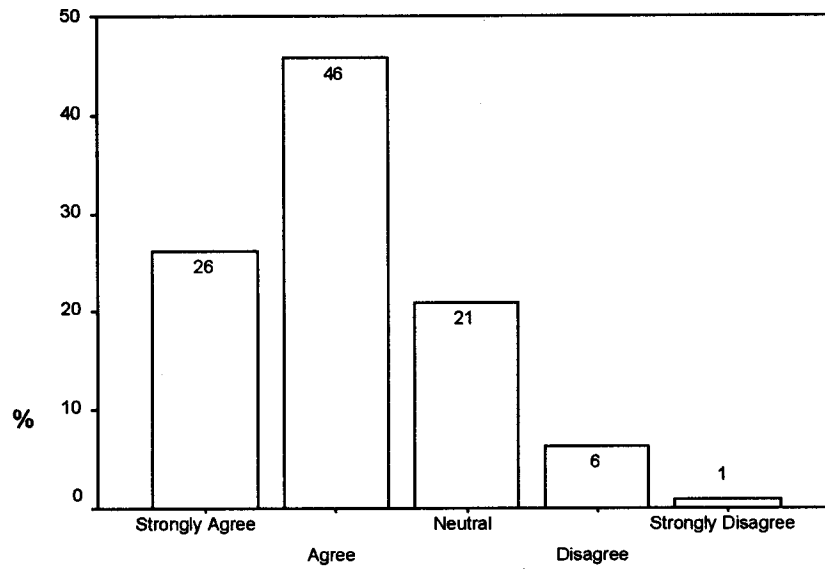


Table 4.39
Enhanced and Streamlined Internal Administration Processes

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	163	26.2	26.2	26.2
Agree	285	45.7	45.7	71.9
Neutral	130	20.9	20.9	92.8
Disagree	39	6.3	6.3	99.0
Strongly Disagree	6	1.0	1.0	100.0
Total	623	100.0	100.0	

Frequencies of KMP Variables

This section summarizes the responses to the items used to measure KM practices in enterprise. The items were measured on a five-point Likert scale where: 1 = strongly agree; 2 = agree; 3 = neutral; 4 = disagree; and 5 = strongly disagree. Table 4.40 provides a summary of the items from the survey regarding KM practices in their enterprise.

Table 4.40
Knowledge Management Practices (KMP) Variables

KM Practices in my Enterprise
1. The organizational benefits of a knowledge-centric organization are clearly understood by everyone in our organization.
2. KM is a top priority in our organization.
3. Our organization has a clear and strong commitment to KM initiatives from senior management.
4. Our organization has sufficient financial resources to support KM initiatives.
5. Our organizational culture encourages knowledge sharing.
6. People in our organization have the time to share information.
7. Teamwork is a critical component of our organization's culture, structure, and processes.
8. Our organizational strategies, structures, policies, procedures, processes, and reward systems focus on long-term growth.
9. Our organization has evolved from a rigid hierarchical structure to a process-oriented structure.
10. Our organization has invested in effective KM technologies (i.e., intranet, databases, email, and digital libraries).
11. Our organization has the human resources to support our information technology systems, software, and network.
12. People in our organization are often rewarded for continuous learning or knowledge sharing.

The Organizational Benefits of a Knowledge-centric Organization are Clearly Understood by Everyone in Our Organization

According to Chart 4.37 and Table 4.41, 42.1% of the respondents strongly agreed or agreed with the survey statement, “everyone knows the benefits of knowledge-centric organization is one of the KM practices in their organization.” Thirty and one half percent were neutral, 18.8% disagreed, and 8.7% strongly disagreed.

Chart 4.37
Everyone Knows the Benefits of Knowledge-centric Organization

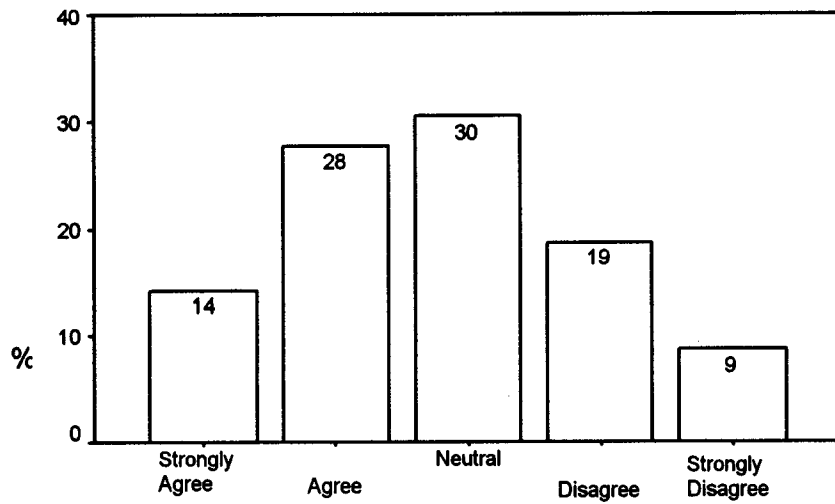


Table 4.41
Everyone Knows the Benefits of Knowledge-centric Organization

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	89	14.3	14.3	14.3
Agree	173	27.8	27.8	42.1
Neutral	190	30.5	30.5	72.6
Disagree	117	18.8	18.8	91.3
Strongly Disagree	54	8.7	8.7	100.0
Total	623	100.0	100.0	

Knowledge Management is a Top Priority in Our Organization

According to Chart 4.38 and Table 4.42, 40.6% of the respondents strongly agreed or agreed with the survey statement, “KM is top priority in our organization is one of the KM practices in their organization.” Thirty three and two tenths percent were neutral; 19.4% disagreed, and 6.7% strongly disagreed.

Chart 4.38
Knowledge Management is Top Priority in Organization

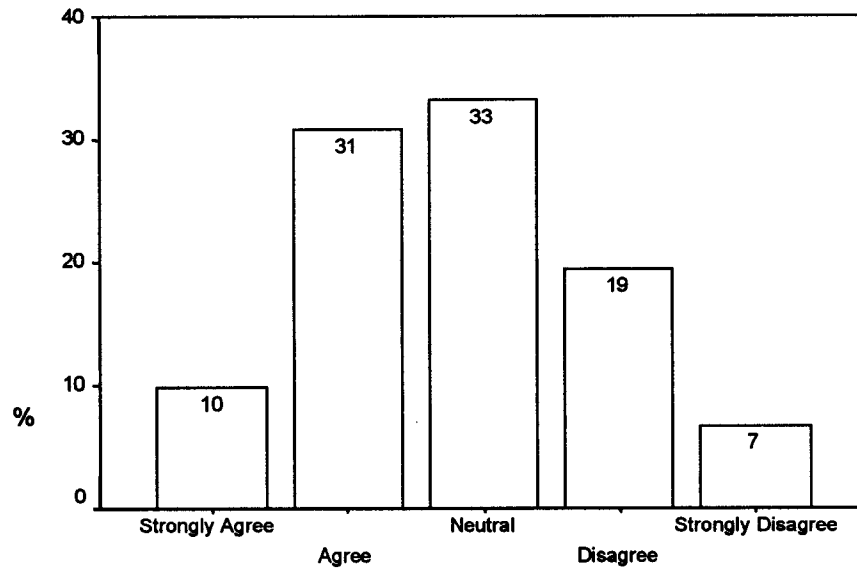


Table 4.42
Knowledge Management is Top Priority in Organization

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	61	9.8	9.8	9.8
Agree	192	30.8	30.8	40.6
Neutral	207	33.2	33.2	73.8
Disagree	121	19.4	19.4	93.3
Strongly Disagree	42	6.7	6.7	100.0
Total	623	100.0	100.0	

Our Organization has a Clear and Strong Commitment to Knowledge Management Initiatives from Senior Management

According to Chart 4.39 and Table 4.43, 53.6% of the respondents strongly agreed or agreed with the survey statement, “senior management has a strong commitment to KM initiatives” is one of the KM practices in their organization. Twenty seven and eight tenths percent were neutral, 13.5% disagreed, and 5.1% strongly disagreed.

Chart 4.39
Senior Management has a Strong Commitment to KM Initiatives

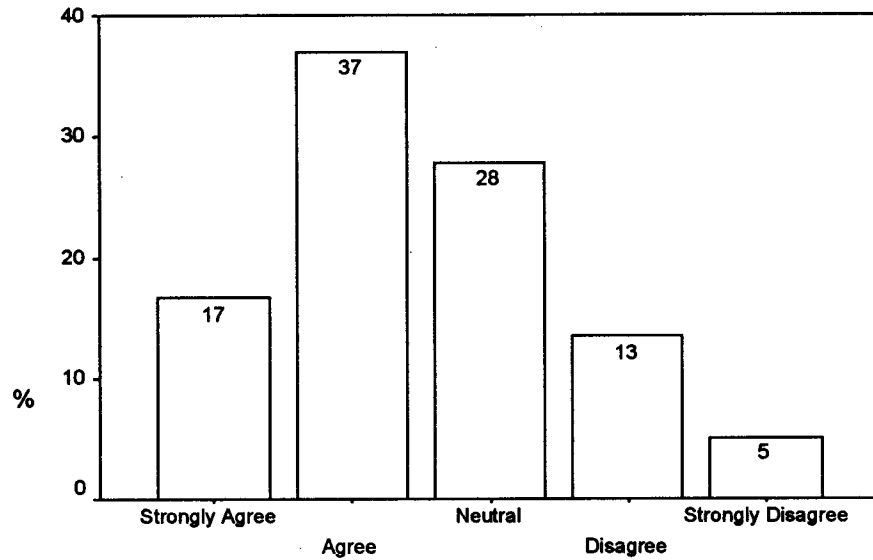


Table 4.43
Senior Management has a Strong Commitment to KM Initiatives

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	104	16.7	16.7	16.7
Agree	230	36.9	36.9	53.6
Neutral	173	27.8	27.8	81.4
Disagree	84	13.5	13.5	94.9
Strongly Disagree	32	5.1	5.1	100.0
Total	623	100.0	100.0	

Our Organization has Sufficient Financial Resources to Support KM Initiatives

According to Chart 4.40 and Table 4.44, 59.4% of the respondents strongly agreed or agreed with the survey statement, “organization have sufficient financial resources to support KM initiatives is one of the KM practices in their organization.” Twenty-seven and one tenth percent were neutral, 10.1% disagreed, and 3.4% strongly disagreed.

Chart 4.40
 Organization has Sufficient Financial Resources to Support KM Initiatives

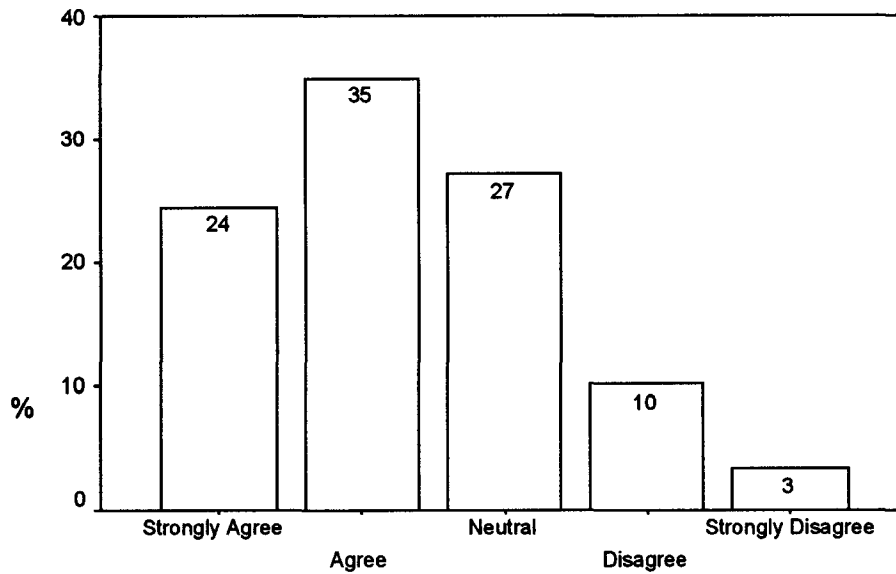


Table 4.44
 Organization has Sufficient Financial Resources to Support KM Initiatives

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	152	24.4	24.4	24.4
Agree	218	35.0	35.0	59.4
Neutral	169	27.1	27.1	86.5
Disagree	63	10.1	10.1	96.6
Strongly Disagree	21	3.4	3.4	100.0
Total	623	100.0	100.0	

Our Organizational Culture Encourages Knowledge Sharing

According to Chart 4.41 and Table 4.45, 59.1% of the respondents strongly agreed or agreed with the survey statement, “organizational culture encourages knowledge sharing is one of the KM practices in their organization.” Twenty-five percent were neutral, 12.4% disagreed, and 3.5% strongly disagreed.

Chart 4.41
Organizational Culture Encourages Knowledge Sharing

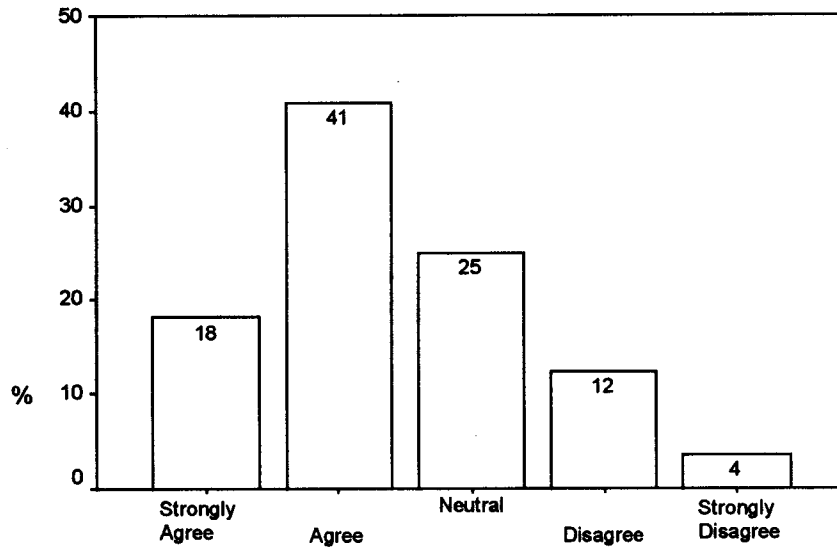


Table 4.45
Organizational Culture Encourages Knowledge Sharing

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	113	18.1	18.1	18.1
Agree	255	40.9	40.9	59.1
Neutral	156	25.0	25.0	84.1
Disagree	77	12.4	12.4	96.5
Strongly Disagree	22	3.5	3.5	100.0
Total	623	100.0	100.0	

People in Our Organization have the Time to Share Information

According to Chart 4.42 and Table 4.46, 52.6% of the respondents strongly agreed or agreed with the survey statement, “people have time to share information is one of the KM practices in their organization.” Twenty-seven percent were neutral, 16.4% disagreed, and 4.0% strongly disagreed.

Chart 4.42
People have Time to Share Information

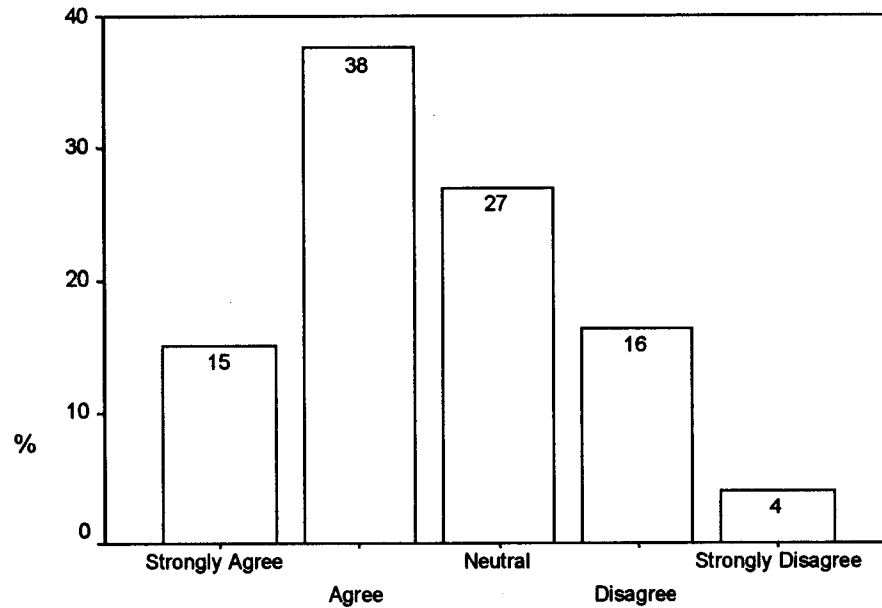


Table 4.46
People have Time to Share Information

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	94	15.1	15.1	15.1
Agree	234	37.6	37.6	52.6
Neutral	168	27.0	27.0	79.6
Disagree	102	16.4	16.4	96.0
Strongly Disagree	25	4.0	4.0	100.0
Total	623	100.0	100.0	

Teamwork is a Critical Component of Our Organization’s Culture, Structure and Processes

According to Chart 4.43 and Table 4.47, 68.2% of the respondents strongly agreed or agreed with the survey statement, “teamwork is critical to culture, structure and processes is one of the KM practices in their organization.” Twenty-four and six tenths percent were neutral, 5.9% disagreed, and 1.3% strongly disagreed.

Chart 4.43
Teamwork is Critical to Culture, Structure, and Processes

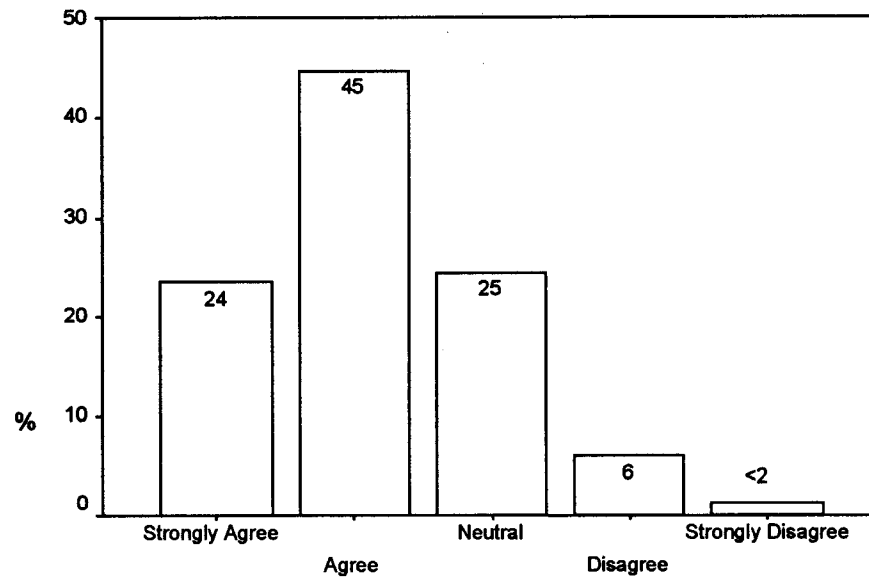


Table 4.47
Teamwork is Critical to Culture, Structure, and Processes

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	147	23.6	23.6	23.6
Agree	278	44.6	44.6	68.2
Neutral	153	24.6	24.6	92.8
Disagree	37	5.9	5.9	98.7
Strongly Disagree	8	1.3	1.3	100.0
Total	623	100.0	100.0	

Our Organizational Strategies, Structures, Policies, Procedures, Processes, and Reward Systems Focus on Long-Term Growth

According to Chart 4.44 and Table 4.48, 58.4% of the respondents strongly agreed or agreed with the survey statement, “organization focused on long-term growth is one of the KM practices in their organization.” Twenty-eight and six tenths percent were neutral, 10.4% disagreed, and 2.6% strongly disagreed.

Chart 4.44
Organization Focused on Long-Term Growth

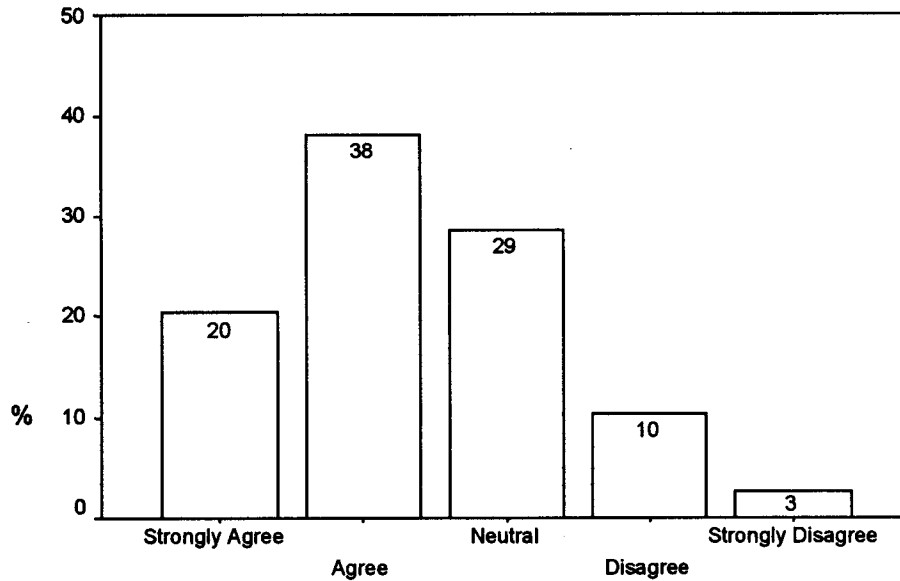


Table 4.48
Organization Focused on Long-term Growth

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	127	20.4	20.4	20.4
Agree	237	38.0	38.0	58.4
Neutral	178	28.6	28.6	87.0
Disagree	65	10.4	10.4	97.4
Strongly Disagree	16	2.6	2.6	100.0
Total	623	100.0	100.0	

Our Organization has Evolved from a Rigid Hierarchical Structure to a Process-Oriented structure

According to Chart 4.45 and Table 4.49, 49.0% of the respondents strongly agreed or agreed with the survey statement, “organization evolved to process-oriented structure is one of the KM practices in their organization.” Thirty-seven and nine tenths percent were neutral, 8.8% disagreed, and 4.3% strongly disagreed.

Chart 4.45
Organization Evolved to Process-Oriented Structure

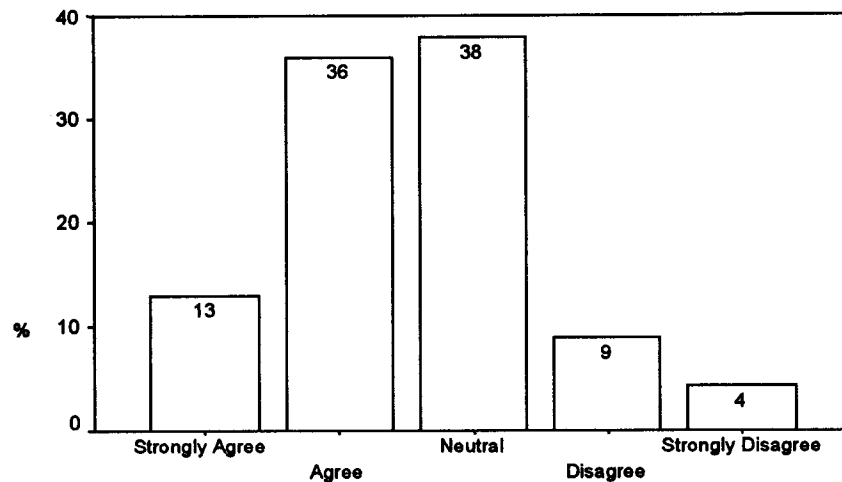


Table 4.49
Organization Evolved to Process-Oriented Structure

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	81	13.0	13.0	13.0
Agree	224	36.0	36.0	49.0
Neutral	236	37.9	37.9	86.8
Disagree	55	8.8	8.8	95.7
Strongly Disagree	27	4.3	4.3	100.0
Total	623	100.0	100.0	

Our Organization has Invested in Effective KM Technologies (i.e., Intranet, Databases, Email, and Digital Libraries)

According to Chart 4.46 and Table 4.50, 68.7% of respondents strongly agreed or agreed with the survey statement, “organization invested KM technologies is one of the KM practices in their organization.” Twenty-two percent were neutral, 6.4% disagreed, and 2.9% strongly disagreed.

Chart 4.46
Organization Invested in KM Technologies

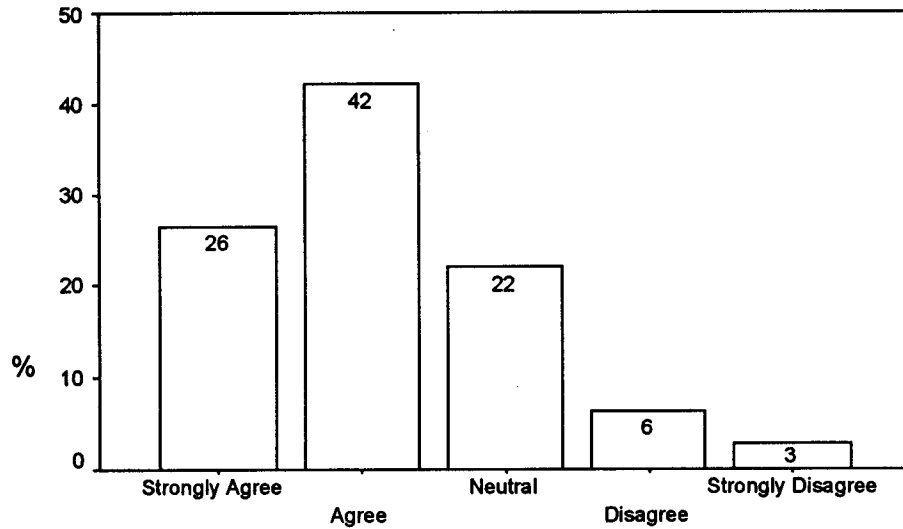


Table 4.50
Organization Invested in KM Technologies

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	165	26.5	26.5	26.5
Agree	263	42.2	42.2	68.7
Neutral	137	22.0	22.0	90.7
Disagree	40	6.4	6.4	97.1
Strongly Disagree	18	2.9	2.9	100.0
Total	623	100.0	100.0	

Our Organization has the Human Resources to Support Our Information Technology Systems, Software, and Network

According to Chart 4.47 and Table 4.51, 68.2% of the respondents strongly agreed or agreed with the survey statement, “organization has human resources to support IT system, software, and network is one of the KM practices in their organization.” Twenty-two and two tenths percent were neutral, 7.7% disagreed, and 1.9% strongly disagreed.

Chart 4.47
 Organization has Human Resources to Support IT System, Software, and Network

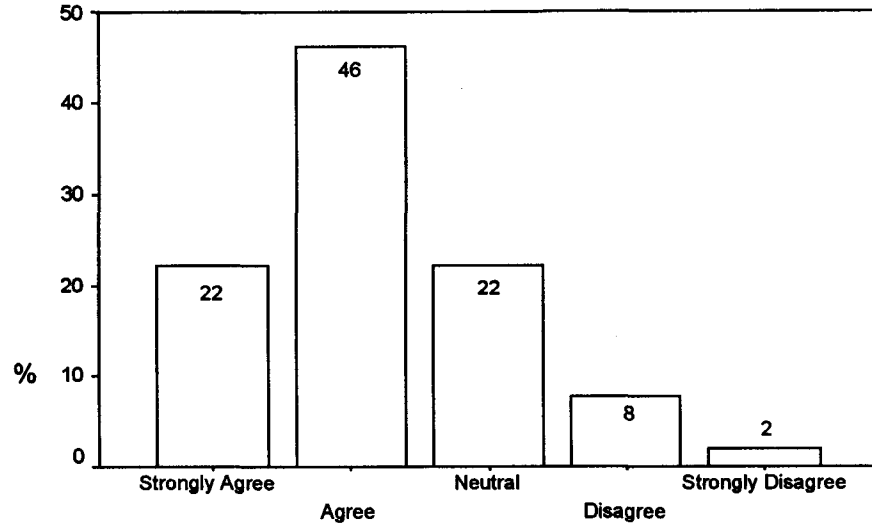


Table 4.51
 Organization has Human Resources to Support IT System, Software, and Network

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	138	22.2	22.2	22.2
Agree	287	46.1	46.1	68.2
Neutral	138	22.2	22.2	90.4
Disagree	48	7.7	7.7	98.1
Strongly Disagree	12	1.9	1.9	100.0
Total	623	100.0	100.0	

People in Our Organization are Often Rewarded for Continuous Learning or Knowledge Sharing

According to Chart 4.48 and Table 4.52, 50.9% of the respondents strongly agreed or agreed with the survey statement, “people get rewarded for continuous learning is one of the KM practices in their organization.” Twenty-six and three tenths percent were neutral, 17.0% disagreed, and 5.8% strongly disagreed.

Chart 4.48
People Get Rewarded for Continuous Learning

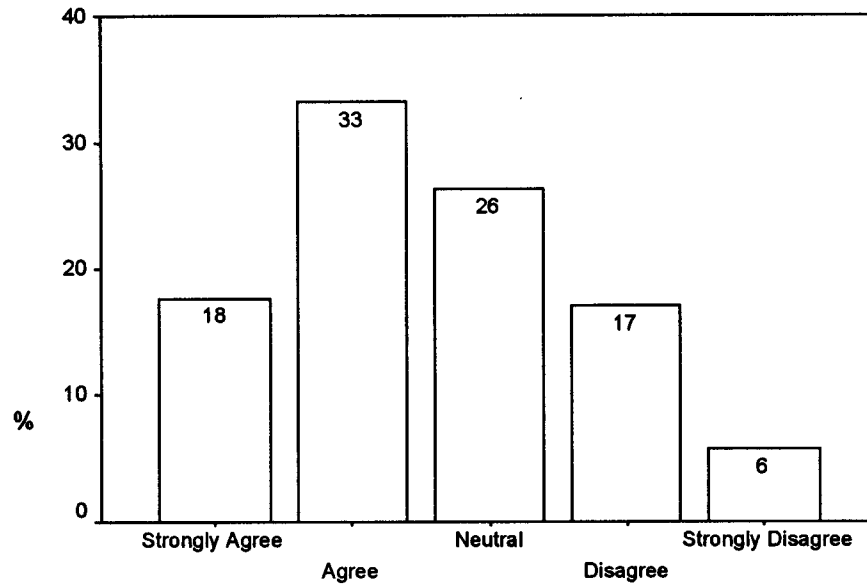


Table 4.52
People Get Rewarded for Continuous Learning

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	110	17.7	17.7	17.7
Agree	207	33.2	33.2	50.9
Neutral	164	26.3	26.3	77.2
Disagree	106	17.0	17.0	94.2
Strongly Disagree	36	5.8	5.8	100.0
Total	623	100.0	100.0	

Summary of Chapter 4

This chapter has reviewed the data collection methods, response rates, and frequency of variables from all usable responses from the entire sample including U.S. and Taiwanese knowledge workers. The response rate was very high (over 41%). In addition, the distribution was balanced between U.S. (47.5%) and Taiwan (52.5%) respondents. Most of the responses were from small (36.8%) and very large (26.0%) businesses (63%) that focused on either service (45.3%) or service and products (39.8%).

In addition, most respondents (69%) stated that their organizations had a KM program, were “setting one up”, or were “examining the need for a KM program.” However, 20% responded that they did not know. They also believed that KM promotion was primarily concentrated at middle or senior management levels. Again, many respondents (28%) did not know what organizational level was responsible for promoting KM. Many respondents (20%) stated that the information technology department contributed most to the KM budget. However, the majority of the respondents chose various departments or functional areas. It is not surprising that, based on analysis of previous variables, nearly one-third (32%) said that they did not know.

As in previous KM studies (Calabrese, 2000; Bixler, 1999), this study found a significant number of “Do not know” responses to the KM organizational dimensions. This is an important finding for future explanation and investigation as discussed in Chapter 6.

Most of the respondents from both U.S. and Taiwan strongly agreed or agreed with the items used to measure KM factors (KMF), expectations (KME) and practices (KMP).

The next chapter, Chapter 5, compares the means of these variables between U.S. and Taiwan respondents. The chapter includes descriptive statistics, ANOVAs to test the hypotheses described in Chapter 3, and Linear regression analyses of the impact of control variables on the relationships between country and KM indexes. The control variables, as summarized at the beginning of this chapter, are size, type, and focus of the respondent’s organization.

The last chapter, Chapter 6, provides a summary review of the results of the study, conclusions, implications for practice, and suggestions for future research.

Appendices with additional tables and charts follow Chapter 6. In addition, a list of references cited in this study is attached to this report.

Chapter 5

Hypotheses Testing (ANOVAs and Linear Regressions)

"The significant problems we face cannot be solved at the same level of thinking we were when we created them."

-Albert Einstein

This chapter includes descriptive statistics for all KM factors (KMF), KM expectations (KME), KM practices (KMP), the KMF index, the KME index, and the KMP index. The indexes are calculated by averaging the means of the responses for each item for each category (factors, expectations, and practices) from the field research survey. Reliability analyses using Cronbach's Alpha are presented to justify the indexed scores for comparison of KM factors, expectations, and practices between U.S. and Taiwanese knowledge workers' perceptions and beliefs.

ANOVAs have been calculated for the KMF, KME, and KMP indexes by country against the control variables (size, type, and focus) described in Chapters 3 and 4 to ensure a representative sample in the study. In addition, the KM indexes are used to test the hypotheses described in Chapter 3 of this study. Analyses of variance (ANOVAs) are used to compare the means between U.S. and Taiwanese knowledge workers' responses to the KM indexes; ANOVAs of all variables are also presented. In addition, this chapter provides General Linear Model (GLM) analysis of KM indexes by country for each control variable (size, type, and focus of organizations).

Descriptive Statistics of KM Variables for Entire Sample

This section of Chapter 5 provides descriptive statistics of the KM variables for all respondents regardless of national culture (country) in order of importance. These statistics show the level of importance placed on each item in the KM variable groups of factors, expectations, and practices. Table 5.1 provides a summary of the means of KMF variables in descending order of all respondents to the field survey.

Table 5.1
Means of KMF Variables in Descending Order of All Respondents from both the United States and Taiwan

	N	Mean	Std. Deviation
Leadership support	623	4.28	.80
Continuous education of employees	623	4.25	.79
Effective and efficient ways of distributing knowledge to employee	623	4.22	.81
Improvements in IT to support KM	623	4.19	.78
Develop repository and database of information and knowledge to support KM	623	4.18	.79
Develop and promote sharing and collaboration	623	4.18	.83
Gather and formalize existing internal knowledge for now and future	623	4.13	.79
Org support of KM	623	4.08	.86
Identify core competencies & necessary knowledge to support them	623	4.06	.77
Gather and formalize existing external knowledge for now and future	623	4.05	.81
KM advocates and champions within the enterprise	623	3.99	.84
Allocate resources to manage knowledge that value to Enterprise	623	3.98	.82
Openness and thinking outside the box	623	3.97	.86
Reward systems based on support	623	3.89	.92
Valid N (listwise)	623		

As can be seen in Table 5.1 the most important factor is **leadership support** followed by **continuous education of employees**. The least important factors are **reward systems based on support**, and **openness and thinking outside of the box**. It appears that the

entire sample considers each of the items an important expectation, with the means ranging from 4.28 to 3.89, where 5 is the highest score possible. It is also important to note that there is a sense of agreement on this ranking of KMF variables given the lack of high standard deviations for all the variables.

Table 5.2
Means of KME Variables in Descending Order of All Respondents from both the United States and Taiwan

	N	Mean	Std. Deviation
Enhanced knowledge transfer from one to another	623	4.14	.81
Better on job training	623	4.14	.82
Improved ability to sustain a competitive advantage	623	4.13	.79
Improved overall performance	623	4.10	.78
Establish formal knowledge transfer system	623	4.09	.75
Better client relations	623	4.00	.86
Enhance innovation and creativity	623	3.98	.85
Better problem solving	623	3.96	.85
Stimulate and motivate employee	623	3.92	.77
Enhance business strategies	623	3.90	.84
Enhanced/streamlined internal Adm processes	623	3.90	.89
Enhance development and creation of enterprise opportunities	623	3.88	.85
Develop culture for growth and success	623	3.88	.89
Improved employee retention	623	3.84	.94
Means to identify best practice	623	3.82	.84
Valid N (listwise)	623		

As can be seen in Table 5.2 the most important expectation from KM is **enhanced knowledge transfer from one to another**. The least important is **means to identify best practice**. It appears that the entire sample considers each of the items an important expectation, with the means ranging from 4.14 to 3.82, where 5 is the highest score

possible. It is also important to note that there is a sense of agreement on this ranking of KME variables given the lack of high standard deviations for all the variables.

Table 5.3
Means of KMP Variables in Descending Order of All Respondents from both the United States and Taiwan

	N	Means	Std. Deviation
Team work is critical to culture, structure and processes	623	3.83	.90
Org invested KM technologies	623	3.83	.99
Org has human resources to support IT system, software and network	623	3.79	.94
Org have sufficient financial resources to support KM initiatives	623	3.67	1.06
Org focused on long-term growth	623	3.63	1.00
Org culture encourage knowledge sharing	623	3.58	1.03
Senior management has a strong commitment to KM initiatives	623	3.47	1.08
Org evolved to process-oriented structure	623	3.44	.97
People have time to share information	623	3.43	1.06
People get rewarded for continuous learning	623	3.40	1.13
Everyone knows the benefits of knowledge centric org	623	3.20	1.16
KM is top priority in org	623	3.17	1.07
Valid N (listwise)	623		

As can be seen in Table 5.3 the most important KM practice is **teamwork**. The least important is **KM is a top priority in my organization**. It appears that the entire sample believes that their organizations have moderate scores in KM practices variables with the means ranging from 3.8 to 3.1, where 5 is the highest score possible. It is also important to note that there is no clear sense of agreement on this ranking of KMP variables given the high standard deviations for most of the variables.

Descriptive Statistics of KM Variables by Country

This section of Chapter 5 provides a summary of means and standard deviations of all KM variables from the survey by country. The statistics provide a quick comparison of each variable by country. The higher mean suggests a more important perception of each variable by the respondent in each national culture (country) group. A higher standard deviation suggests lower consensus of the respondents by national culture (country) group. This brief analysis does not provide a statistical significance test for the differences between the two groups. It does provide a picture of the relative importance of each variable to each respondent by group. ANOVAs are discussed later in the following sections of this chapter to provide statistical significance comparisons of the two groups on each variable.

Table 5.4
Means of KMF Variables of U.S. and Taiwanese
Respondents

		N	Mean	Std. Deviation
Everyone knows the benefits of knowledge-centric org	Taiwan	327	3.55	1.02
	USA	296	2.81	1.18
	Total	623	3.20	1.16
KM is top priority in org		327	3.42	.97
		296	2.91	1.10
		623	3.17	1.07
Senior management has a strong commitment to KM initiatives		327	3.83	.97
		296	3.06	1.05
		623	3.47	1.08
Org have sufficient financial resources to support KM initiatives		327	3.82	.99
		296	3.50	1.10
		623	3.67	1.06
Org culture encourage knowledge sharing		327	3.84	.91
		296	3.29	1.09
		623	3.58	1.03
People have time to share information		327	3.70	.93
		296	3.14	1.11
		623	3.43	1.06
Team work is critical to culture, structure and processes		327	3.79	.78
		296	3.88	1.01
		623	3.83	.90
Org focused on long-term growth		327	3.83	.86
		296	3.41	1.10
		623	3.63	1.00
Org evolved to process-oriented structure		327	3.70	.89
		296	3.17	.99
		623	3.44	.97
Org invested KM technologies		327	3.98	.89
		296	3.66	1.06
		623	3.83	.99
Org has human resources to support IT system, software and network		327	3.94	.86
		296	3.62	.99
		623	3.79	.94
People get rewarded for continuous learning		327	3.72	1.04
		296	3.04	1.13
		623	3.40	1.13

Table 5.5
Means of KME Variables of U.S. and Taiwanese
Respondents

		N	Mean	Std. Deviation
Stimulate and motivate employee	Taiwan	327	3.96	.72
	USA	296	3.89	.83
	Total	623	3.92	.77
Establish formal knowledge transfer system		327	4.20	.70
		296	3.97	.78
		623	4.09	.75
Better on job training		327	4.23	.75
		296	4.04	.89
		623	4.14	.82
Enhance innovation and creativity		327	4.17	.76
		296	3.76	.89
		623	3.98	.85
Improved overall performance		327	4.14	.75
		296	4.06	.82
		623	4.10	.78
Better client relations		327	4.14	.78
		296	3.84	.92
		623	4.00	.86
Develop culture for growth and success		327	4.11	.76
		296	3.62	.95
		623	3.88	.89
Improved employee retention		327	4.03	.86
		296	3.63	.98
		623	3.84	.94
Improved ability to sustain a competitive advantage		327	4.25	.71
		296	4.00	.84
		623	4.13	.79
Enhanced knowledge transfer from one to another		327	4.20	.78
		296	4.08	.83
		623	4.14	.81
Means to identify best practice		327	3.87	.83
		296	3.77	.85
		623	3.82	.84
Better problem solving		327	4.00	.83
		296	3.93	.88
		623	3.96	.85
Enhance business strategies		327	3.93	.83
		296	3.88	.85
		623	3.90	.84
Enhance development and creation of enterprise opportunities		327	3.98	.81
		296	3.78	.87
		623	3.88	.85
Enhanced/streamlined internal Adm processes		327	4.07	.84
		296	3.71	.92
		623	3.90	.89

Table 5.6
Means of KMP Variables of U.S. and Taiwanese
Respondents

		N	Mean	Std. Deviation
Improvements in IT to support KM	Taiwan	327	4.34	.68
	USA	296	4.02	.85
	Total	623	4.19	.78
Org support of KM		327	4.18	.76
		296	3.96	.95
		623	4.08	.86
Leadership support		327	4.35	.74
		296	4.20	.86
		623	4.28	.80
Reward systems based on support		327	3.99	.82
		296	3.77	1.01
		623	3.89	.92
Openness and thinking outside the box		327	4.02	.83
		296	3.92	.89
		623	3.97	.86
Continuous education of employees		327	4.37	.71
		296	4.12	.85
		623	4.25	.79
KM advocates and champions within the enterprise		327	4.15	.74
		296	3.81	.91
		623	3.99	.84
Identify core competencies and necessary knowledge to support them		327	4.18	.75
		296	3.93	.78
		623	4.06	.77
Gather and formalize existing internal knowledge for now and future		327	4.27	.72
		296	3.97	.84
		623	4.13	.79
Gather and formalize existing external knowledge for now and future		327	4.19	.75
		296	3.90	.84
		623	4.05	.81
Develop repository and database of information and knowledge to support KM		327	4.32	.71
		296	4.02	.85
		623	4.18	.79
Allocate resources to manage knowledge that value to Enterprise		327	3.97	.75
		296	3.99	.88
		623	3.98	.82
Effective and efficient ways of distributing knowledge to employee		327	4.29	.75
		296	4.13	.87
		623	4.22	.81
Develop and promote sharing and collaboration		327	4.17	.79
		296	4.19	.87
		623	4.18	.83

Descriptive Statistics of KM Indexes

This section of the study provides a summary of the descriptive statistics of the KMF index, KME index, and KMP index scores. The statistics provide a quick comparison of each index by country. The higher mean suggests a more important perception of each index by the respondents in each national culture (country) group. A higher standard deviation suggests lower consensus of the respondents by national culture (country) group. The standard deviations are quite low in this analysis suggesting a consensus of opinion on each dimension by each group.

Table 5.7
Descriptive Statistics of KMF, KME, and KMP
Indexes

KM Index	Country	N	Mean	Std. Deviation	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
KMFINDEX Cronbach's Alpha = 0.8784	Taiwan	327	4.2003	.4865	4.1474	4.2532
	USA	296	3.9949	.5167	3.9358	4.0540
	Total	623	4.1027	.5111	4.0625	4.1429
KMEINDEX Cronbach's Alpha = 0.9037		327	4.0850	.5472	4.0255	4.1445
		296	3.8633	.5225	3.8035	3.9231
		623	3.9797	.5466	3.9367	4.0227
KMPINDEX Cronbach's Alpha = 0.9020		327	3.7604	.6984	3.6845	3.8364
		296	3.2914	.6561	3.2163	3.3664
		623	3.5376	.7174	3.4811	3.5940

This brief analysis does not provide a statistical significance test for the differences between the two groups. It does provide a picture of the relative importance of each index to each group. ANOVAs are discussed later in the following sections of this chapter to

provide statistical significance comparisons of the KMF, KME, and KMP indexes by national culture (country). Cronbach's Alphas are presented on the items used to calculate the KM indexes. Each Alpha is higher than .80 reflecting strong reliability of the measures.

Hypotheses Testing

This section of Chapter 5 provides a review of the research hypotheses and measurements used for the dependent and independent variables in each hypothesis. To test the hypotheses, ANOVAs are presented. The results of those tests follow.

Restatement of the Hypotheses

As stated previously, the U.S. and Taiwan are very different in culture according to previous research including the important work of Hofstede and subsequent extensions of research on national culture and management. To extend that work to include KM, three research hypotheses were developed. They include:

- H1. Taiwanese respondent's beliefs about the critical key elements of KM are significantly different from beliefs of U.S. respondents;
- H2. Taiwanese respondent's expectations about the benefits of KM are significantly different from expectations of U.S. respondents; and
- H3. Taiwanese respondent's practices are significantly different from practices of U.S. respondents.

Beliefs are measured using an index of averaged scores on all KM factor variables (KMF index). Expectations are measured using an index of averaged scores on all KM expectation variables (KME index). And, practices are measured using an index of averaged scores on all KM practice variables (KMP index). The indexes of each respondent are compared by national culture (country) group.

The results indicate significant differences in beliefs, expectations, and practices of knowledge management indexes between U.S. and Taiwanese respondents.

The results are summarized in Table 5.8 below.

Table 5.8
ANOVAs of KM Indexes by Country Group

Hypothesis	KM Index	F	Sig.
H1	KMFINDEX	26.097	.000
H2	KMEINDEX	26.623	.000
H3	KMPINDEX	74.231	.000

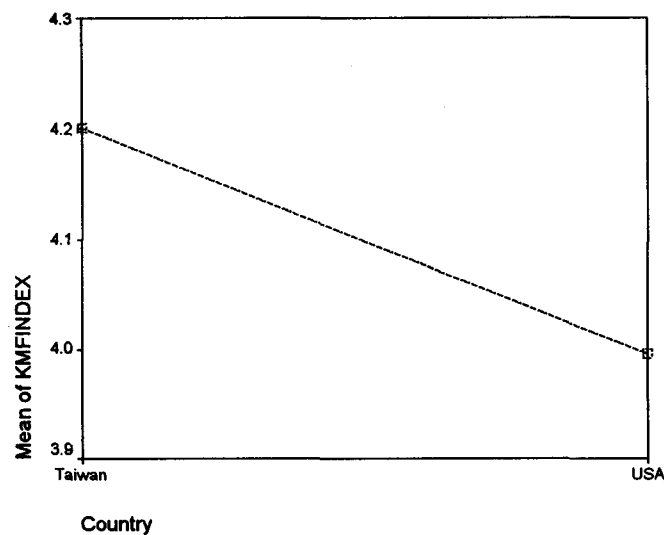
Hypothesis 1 Findings

Based on the data, it appears that Hypothesis 1 (Taiwanese respondent's beliefs about the critical key elements of KM are significantly different from beliefs of U.S. respondents) is not rejected.

Apparently, as a general finding, U.S. and Taiwanese knowledge workers have very different perceptions of the factors that result in successful KM in their organizations.

The very high confidence level ($p < .000$) suggests that there is a very low chance of error.

Chart 5.1
Means Plot of U.S. versus Taiwan KMF Index Scores

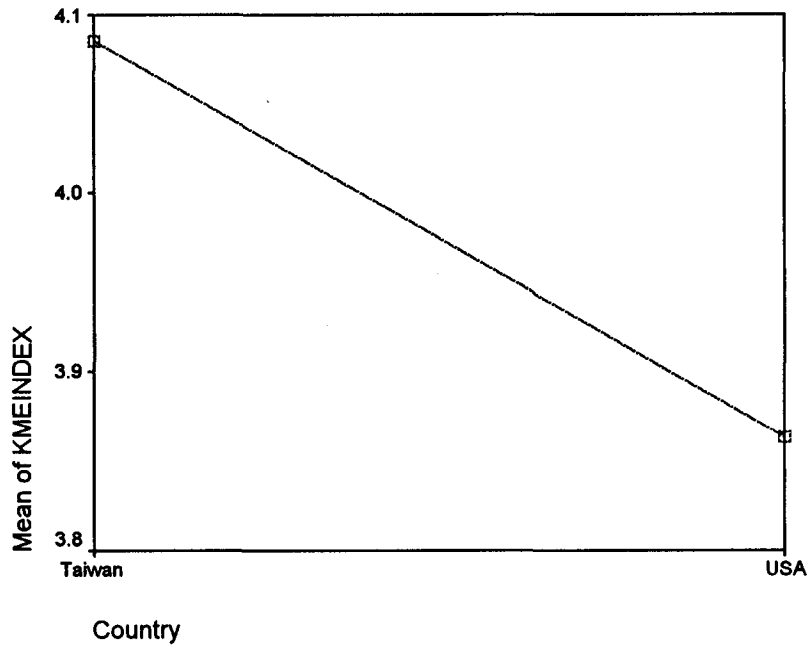


Hypothesis 2 Findings

Based on the data, it appears that Hypothesis 2 (Taiwanese respondents' expectations about the benefits of KM are significantly different from expectations of U.S. respondents) is not rejected.

Apparently, as a general finding, U.S. and Taiwanese knowledge workers have very different expectations regarding the benefits of KM investments or initiatives. The very high confidence level ($p < .000$) suggests that there is a very low chance of error.

Chart 5.2
Means Plot of U.S. versus Taiwan KME Index Scores

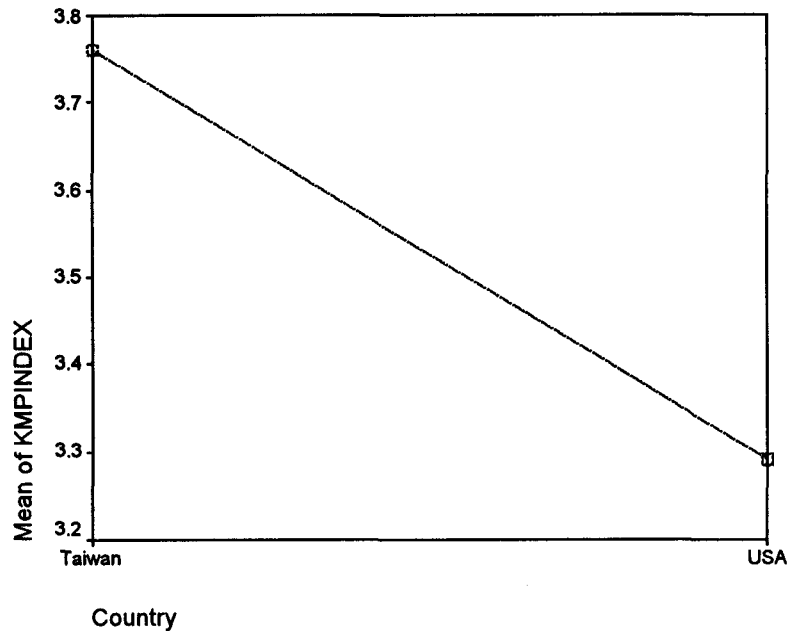


Hypothesis 3 Findings

Based on the data, it appears that Hypothesis 3 (Taiwanese respondents' practices are significantly different from practices of U.S. respondents) is not rejected.

Apparently, as a general finding, U.S. and Taiwanese knowledge workers have very different KM practices in their organizations. The very high confidence level ($p < .000$) suggests that there is a very low chance of error.

Chart 5.3
Means Plot of U.S. versus Taiwan KMP Index Scores



Exceptions to the General Findings

Although the data fails to reject the three research hypotheses, some specific variables in each of the indexes are not statistically different when run through an analysis of variance individually by country group. For some variables, knowledge workers in Taiwan and the U.S. do not have significantly different perceptions regarding factors, expectations, and practices of KM in their organizations. This next section of Chapter 5 provides a summary of the ANOVAs of all of the KM variables organized by KMF, KME, and KMP categories. The variables that are not significantly different are highlighted. For each category the specific item that is not significantly different ($p > .05$) is briefly analyzed.

ANOVAs of KM Variables

The following section provides a summary of ANOVAs of each of all of the KM factors, expectations, and practices by each index category. Tables 5.9, 5.10, and 5.11 provide a summary of the results for KMF, KME, and KMP variables respectively.

Table 5.9
ANOVAs of KMF Variables by Country

		Sum of Squares	df	Mean Square	F	Sig.
Improvements in IT to support KM	Between Groups	15.495	1	15.495	26.717	.000
	Within Groups	360.156	621	.580		
	Total	375.650	622			
Org support of KM		7.356	1	7.356	10.085	.002
		452.946	621	.729		
		460.302	622			
Leadership support		3.768	1	3.768	5.921	.015
		395.192	621	.636		
		398.960	622			
Reward systems based on support		8.005	1	8.005	9.543	.002
		520.903	621	.839		
		528.909	622			
Openness and thinking outside the box		1.632	1	1.632	2.189	.139
		462.904	621	.745		
		464.536	622			
Continuous education of employees		9.612	1	9.612	15.674	.000
		380.825	621	.613		
		390.437	622			
KM advocates and champions within the enterprise		18.543	1	18.543	27.134	.000
		424.378	621	.683		
		442.921	622			
Identify core competencies And necessary knowledge to support		10.058	1	10.058	17.325	.000
		360.501	621	.581		
		370.559	622			
Gather and formalize existing internal knowledge for now and future		13.345	1	13.345	21.946	.000
		377.637	621	.608		
		390.982	622			
Gather and formalize existing external knowledge for now and future		13.152	1	13.152	20.878	.000
		391.204	621	.630		
		404.356	622			
Develop repository database of information and knowledge to support KM		14.030	1	14.030	23.143	.000
		376.474	621	.606		
		390.504	622			
Allocate resources to manage knowledge that value to Enterprise		6.495E-02	1	6.495E-02	.097	.755
		414.664	621	.668		
		414.729	622			
Effective and efficient ways of distributing knowledge to employee		3.916	1	3.916	5.971	.015
		407.262	621	.656		
		411.178	622			
Develop and promote sharing and collaboration		3.439E-02	1	3.439E-02	.050	.823
		426.470	621	.687		
		426.504	622			

Table 5.10
ANOVAs of KME Variables by Country

		df	Mean Square	F	Sig.
Stimulate and motivate employee	Between Groups	1	.733	1.227	.268
	Within Groups	621	.597		
	Total	622			
Establish formal knowledge transfer system		1	8.357	15.216	.000
		621	.549		
		622			
Better on job training		1	5.923	8.822	.003
		621	.671		
		622			
Enhance innovation and creativity		1	25.830	37.844	.000
		621	.683		
		622			
Improved overall performance		1	.916	1.499	.221
		621	.611		
		622			
Better client relations		1	13.962	19.224	.000
		621	.726		
		622			
Develop culture for growth and success		1	36.608	49.758	.000
		621	.736		
		622			
Improved employee retention		1	25.133	29.626	.000
		621	.848		
		622			
Improved ability to sustain a competitive advantage		1	10.009	16.623	.000
		621	.602		
		622			
Enhanced knowledge transfer from one to another		1	2.513	3.878	.049
		621	.648		
		622			
Means to identify best practice		1	1.309	1.865	.173
		621	.702		
		622			
Better problem solving		1	.858	1.189	.276
		621	.722		
		622			
Enhance business strategies		1	.414	.583	.445
		621	.710		
		622			
Enhance development and creation of enterprise opportunities		1	6.122	8.659	.003
		621	.707		
		622			
Enhanced/streamlined internal Adm processes		1	20.233	26.375	.000
		621	.767		
		622			

Table 5.11
ANOVAs of KMP Variables by Country

		df	Mean Square	F	Sig.
Everyone knows the benefits of knowledge-centric org	Between Groups	1	84.92	70.16	.000
	Within Groups	621	1.21		
	Total	622			
KM is top priority in org		1	40.97	38.26	.000
		621	1.07		
		622			
Senior management has a strong commitment to KM initiatives		1	90.81	89.21	.000
		621	1.01		
		622			
Org have sufficient financial resources to support KM initiatives		1	15.53	14.22	.000
		621	1.09		
		622			
Org culture encourage knowledge sharing		1	47.65	48.01	.000
		621	.992		
		622			
People have time to share information		1	47.91	45.98	.000
		621	1.04		
		622			
Team work is critical to culture, structure, and processes		1	1.33	1.65	.199
		621	.807		
		622			
Org focused on long-term growth		1	27.36	28.43	.000
		621	.962		
		622			
Org evolved to process-oriented structure		1	43.92	50.14	.000
		621	.876		
		622			
Org invested KM technologies		1	15.85	16.68	.000
		621	.950		
		622			
Org has human resources to support IT system, software, and network		1	16.27	19.00	.000
		621	.856		
		622			
People get rewarded for continuous learning		1	72.73	62.32	.000
		621	1.16		
		622			

Impact of Control Variables on ANOVAs of KM Indexes by Country

To better understand the impact of control variables (size, type, and focus of organizations) on the relationships between national culture and KM factors (KMF index), KM expectations (KME index), and KM practices (KMP index) in the U.S. and Taiwan, General Linear Model analyses are presented. The regressions set country (national culture—Taiwan and the U.S.) as the predictor variable in a regression equation with the KM indexes as dependent variables. GLM are shown comparing scores on KM indexes by respondents from each country group.

Separate regressions are shown for cases within each control groups. The GLM include sizes, types, and focuses as factors. The predictor or independent variable is country and the dependent variable is the KM index. The purpose is to investigate whether or not the control variables are significant factors affecting the ANOVA results previously stated. Those results suggest strong statistical differences between U.S. and Taiwanese respondents on KM indexes. The results and brief summary for each regression are provided in the section that follows. Table 5.13 provides a summary of the predictor variable which is country dependent and control groups that are used in the regressions.

Table 5.12
Regression Variables of KM Indexes with Country as
Predictor Variable
(U.S. versus Taiwanese respondents)

Hypothesis	Dependent Variables	Selection (control) Variables	Control Groups
H1	KMF Index	Size (Number of employees)	5 to 500 501 to 1000 1001 to 5000 5001 to 10,000 over 10,000
H2	KME Index	Type	Business Education Government Other
H3	KMP Index	Focus	Products Services Both

Table 5.13
General Linear Model
Univariate Analysis of Variance of KM Factors
(KMF Index) by Country, Size, Type, and Focus

Dependent Variable: KMFINDEX

Source	df	F	Sig.	Observed Power ^a
COUNTRY	1	27.432	.000	.999
SIZE	4	1.489	.204	.463
TYPE	3	.374	.772	.124
FOCUS	2	.972	.379	.219

^a. Computed using alpha = .05

As summarized in Table 5.13 country variable is a significant predictor with an F score of 27.432 with a p value = .000. Size, type, and focus are not significant factors with F scores of 1.5, .37, and .97 respectively. Therefore, size, type, and focus of organization does not significantly affect the perceptions of Taiwanese or U.S. knowledge workers regarding the factors for KM success in their organizations.

Table 5.14
Bonferroni Analysis of KMF Index by Country by
Size

Dependent Variable: KMFINDEX
Bonferroni

(I) size	(J) size	Mean Difference (I-J)	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
5-500	501-1000	-9.5503E-03	1.000	-.1963	.1772
	1001-5000	-2.9517E-02	1.000	-.1998	.1408
	5001-10000	3.955E-02	1.000	-.1679	.2470
	10000+	2.095E-02	1.000	-.1239	.1658
501-1000	5-500	9.550E-03	1.000	-.1772	.1963
	1001-5000	-1.9967E-02	1.000	-.2356	.1957
	5001-10000	4.910E-02	1.000	-.1969	.2951
	10000+	3.050E-02	1.000	-.1657	.2267
1001-5000	5-500	2.952E-02	1.000	-.1408	.1998
	501-1000	1.997E-02	1.000	-.1957	.2356
	5001-10000	6.907E-02	1.000	-.1647	.3028
	10000+	5.047E-02	1.000	-.1301	.2310
5001-10000	5-500	-3.9549E-02	1.000	-.2470	.1679
	501-1000	-4.9099E-02	1.000	-.2951	.1969
	1001-5000	-6.9066E-02	1.000	-.3028	.1647
	10000+	-1.8595E-02	1.000	-.2345	.1973
10000+	5-500	-2.0954E-02	1.000	-.1658	.1239
	501-1000	-3.0505E-02	1.000	-.2267	.1657
	1001-5000	-5.0472E-02	1.000	-.2310	.1301
	5001-10000	1.859E-02	1.000	-.1973	.2345

Based on observed means.

In Table 5.14 Bonferroni analysis is presented comparing means of KMF index by country and size. The results show no significant differences between sizes. Therefore, size is not a moderating factor and does not affect previous analysis.

Table 5.15
Bonferroni Analysis of KMF Index by Country by
Type

Dependent Variable: KMFINDEX
Bonferroni

(I) type	(J) type	Mean Difference (I-J)	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
Business	Education	6.433E-02	1.000	-.1181	.2468
	Government	-7.4147E-02	1.000	-.2505	.1022
	Other	-4.5787E-02	1.000	-.1925	.1009
Education	Business	-6.4328E-02	1.000	-.2468	.1181
	Government	-.1385	.720	-.3739	9.696E-02
	Other	-.1101	1.000	-.3243	.1041
Government	Business	7.415E-02	1.000	-.1022	.2505
	Education	.1385	.720	-9.6965E-02	.3739
	Other	2.836E-02	1.000	-.1807	.2374
Other	Business	4.579E-02	1.000	-.1009	.1925
	Education	.1101	1.000	-.1041	.3243
	Government	-2.8359E-02	1.000	-.2374	.1807

Based on observed means.

In Table 5.15 Bonferroni analysis is presented comparing means of KMF index by country and type. The results show no significant differences between types. Therefore, type is not a moderating factor and does not affect previous analysis.

Table 5.16
Bonferroni Analysis of KMF Index by Country by
Focus

Dependent Variable: KMFINDEX
Bonferro

(I) focus	(J) focus	Mean Difference (I-J)	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
Products	Services	6.362E-02	.866	-8.0146E-02	.2074
	Both	-2.1697E-02	1.000	-.1679	.1245
Services	Products	-6.3617E-02	.866	-.2074	8.015E-02
	Both	-8.5315E-02	.152	-.1900	1.935E-02
Both	Products	2.170E-02	1.000	-.1245	.1679
	Services	8.531E-02	.152	-1.9347E-02	.1900

Based on observed means.

In Table 5.16 Bonferroni analysis is presented comparing means of KMF index by country and focus. The results show no significant differences between focuses. Therefore, focus is not a moderating factor and does not affect previous analysis.

Chart 5.4
KMF Index by Country by Size

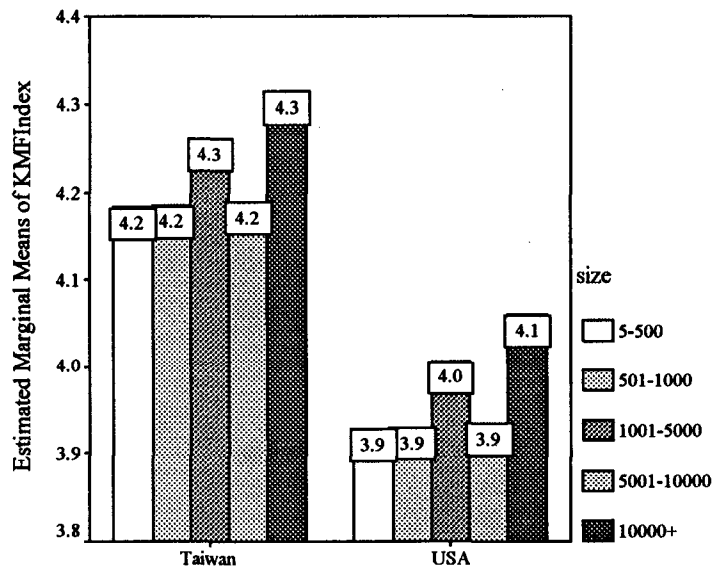


Chart 5.4 illustrates the estimated means of KMF index by country and size. The chart shows that Taiwan is higher than the U.S. in KMF index in every category of size of organization.

Chart 5.5
KMF Index by Country by Type

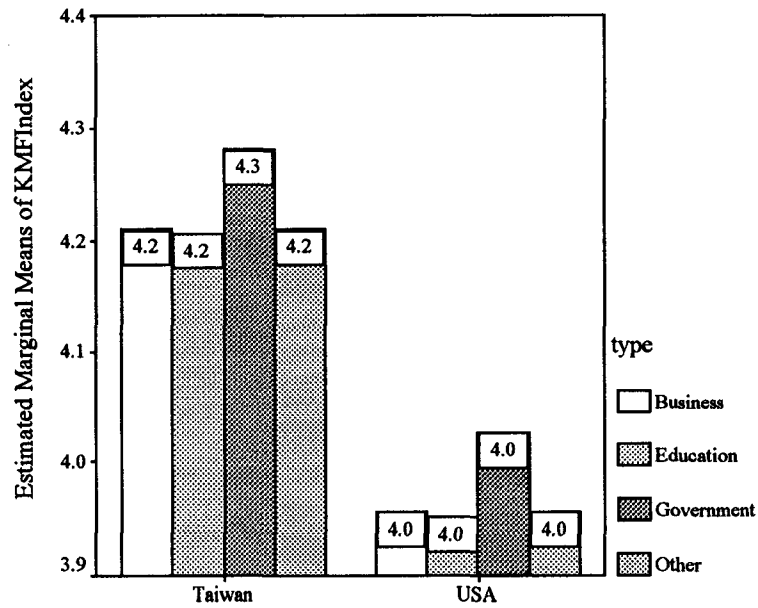


Chart 5.5 illustrates the estimated means of KMF index by country and type. The chart shows that Taiwan is higher in KMF index in every category of organization type than the U.S. is.

Chart 5.6
KMF Index by Country by Focus

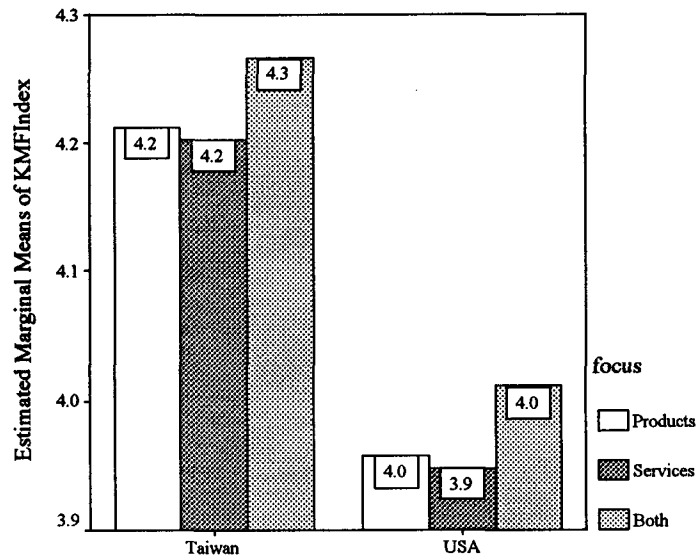


Chart 5.6 illustrates the estimated means of KMF index by country and focus. The chart shows that Taiwan is higher than the U.S. in KMF index in every category of focus of organization.

Table 5.17
General Linear Model
Univariate Analysis of Variance of KM Expectations
(KME Index) By Country, Size, Type, and Focus

Dependent Variable: KMEINDEX

Source	F	Sig.	Observed Power ^a
COUNTRY	26.275	.000	.999
SIZE	1.210	.305	.381
TYPE	.126	.944	.073
FOCUS	2.967	.052	.577

a. Computed using alpha = .05

As summarized in Table 5.17, country variable is a significant predictor with an F score of 26.275 with a p value = .000. Size, type, and focus are not significant factors with F scores of 1.2, .13, and 2.97 respectively. Therefore, size, type, and focus of organization does not significantly affect the perceptions of Taiwanese or U.S. knowledge workers regarding the KM expectations in their organizations.

Table 5.18
Bonferroni Analysis of KME Index by Country by
Size

Dependent Variable: KMEINDEX
Bonferroni

(I) size	(J) size	Mean Difference (I-J)	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
5-500	501-1000	1.287E-02	1.000	-.1861	.2119
	1001-5000	3.217E-02	1.000	-.1493	.2136
	5001-10000	4.596E-02	1.000	-.1750	.2669
	10000+	3.176E-02	1.000	-.1226	.1861
501-1000	5-500	-1.2871E-02	1.000	-.2119	.1861
	1001-5000	1.930E-02	1.000	-.2105	.2490
	5001-10000	3.309E-02	1.000	-.2290	.2952
	10000+	1.889E-02	1.000	-.1901	.2279
1001-5000	5-500	-3.2169E-02	1.000	-.2136	.1493
	501-1000	-1.9298E-02	1.000	-.2490	.2105
	5001-10000	1.379E-02	1.000	-.2352	.2628
	10000+	-4.1152E-04	1.000	-.1928	.1919
5001-10000	5-500	-4.5962E-02	1.000	-.2669	.1750
	501-1000	-3.3091E-02	1.000	-.2952	.2290
	1001-5000	-1.3793E-02	1.000	-.2628	.2352
	10000+	-1.4205E-02	1.000	-.2442	.2158
10000+	5-500	-3.1757E-02	1.000	-.1861	.1226
	501-1000	-1.8887E-02	1.000	-.2279	.1901
	1001-5000	4.115E-04	1.000	-.1919	.1928
	5001-10000	1.420E-02	1.000	-.2158	.2442

Based on observed means.

In Table 5.18 Bonferroni analysis is presented comparing means of KME index by country and size. The results show no significant differences between sizes. Therefore, size is not a moderating factor and does not affect previous analysis.

Table 5.19
Bonferroni Analysis of KME Index by Country by Type

Dependent Variable: KMEINDEX
Bonferroni

(I) type	(J) type	Mean Difference (I-J)	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
Business	Education	.1141	.725	-8.0275E-02	.3084
	Government	-3.1845E-03	1.000	-.1910	.1847
	Other	-6.5664E-02	1.000	-.2220	9.066E-02
Education	Business	-.1141	.725	-.3084	8.027E-02
	Government	-.1173	1.000	-.3681	.1336
	Other	-.1797	.225	-.4079	4.843E-02
Government	Business	3.185E-03	1.000	-.1847	.1910
	Education	.1173	1.000	-.1336	.3681
	Other	-6.2479E-02	1.000	-.2851	.1602
Other	Business	6.566E-02	1.000	-9.0663E-02	.2220
	Education	.1797	.225	-4.8429E-02	.4079
	Government	6.248E-02	1.000	-.1602	.2851

Based on observed means.

In Table 5.19 Bonferroni analysis is presented comparing means of KME index by country and type. The results show no significant differences between types. Therefore, type is not a moderating factor and does not affect previous analysis.

Table 5.20
Bonferroni Analysis of KME Index by Country by
Focus

Dependent Variable: KMEINDEX
Bonferroni

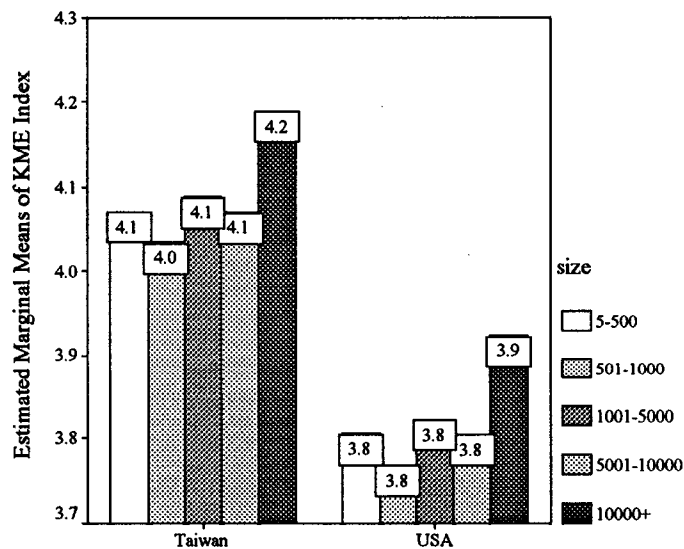
(I) focus	(J) focus	Mean Difference (I-J)	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
Products	Services	9.431E-02	.420	-5.8847E-02	.2475
	Both	-5.9767E-02	1.000	-.2155	9.597E-02
Services	Products	-9.4311E-02	.420	-.2475	5.885E-02
	Both	-.1541*	.003	-.2656	-4.2577E-02
Both	Products	5.977E-02	1.000	-9.5973E-02	.2155
	Services	.1541*	.003	4.258E-02	.2656

Based on observed means.

*. The mean difference is significant at the .05 level.

In Table 5.20 Bonferroni analysis is presented comparing means of KME index by country and focus. The results show no significant differences between focuses. Therefore, focus is not a moderating factor and does not affect previous analysis.

Chart 5.7
KME Index by Country by Size



In Chart 5.7 illustrates the estimated means of KME index by country and size. The chart shows that Taiwan is higher than the U.S. in KME index in every category of size of organization.

Chart 5.8
KME Index by Country by Type

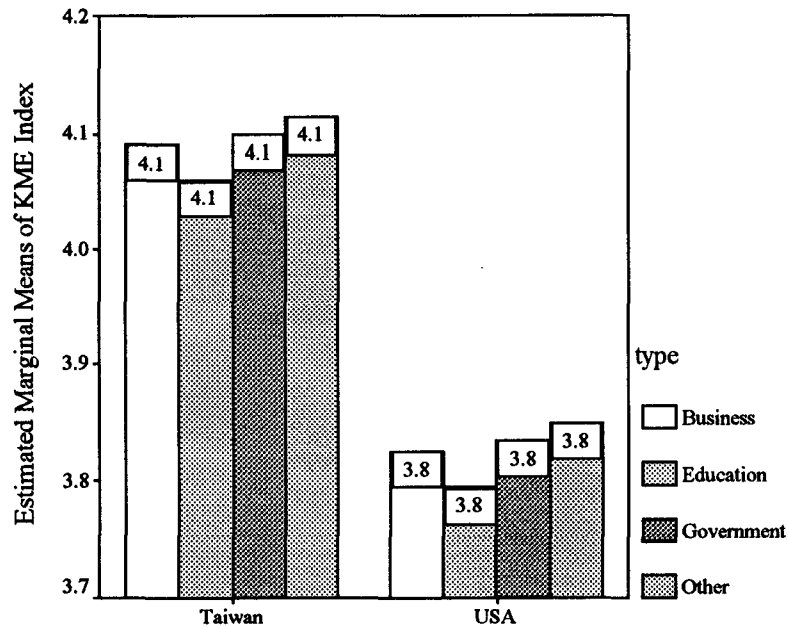


Chart 5.8 illustrates the estimated means of KME index by country and type. The chart shows that Taiwan is higher than the U.S. in KME index in every category of type of organization.

Chart 5.9
KME Index by Country by Focus

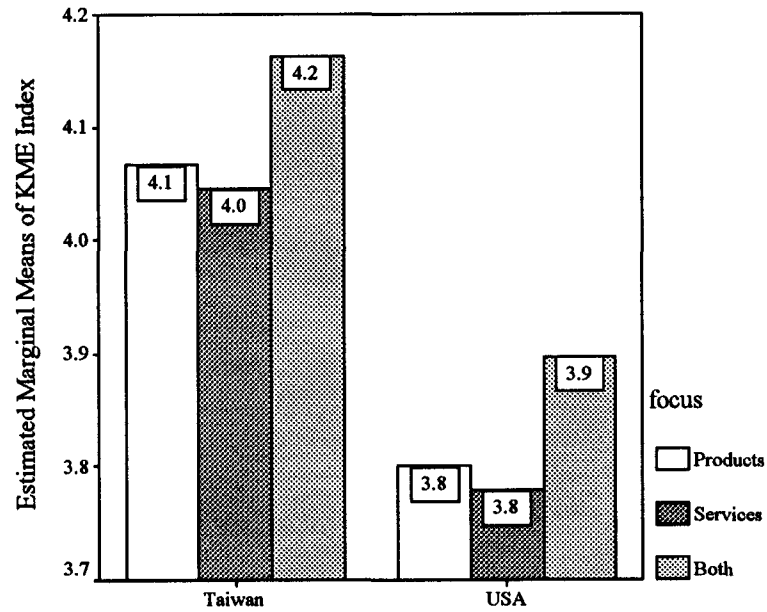


Chart 5.7 illustrates the estimated means of KME index by country and focus. The chart shows that Taiwan is higher than the U.S. in KME index in every category of focus of organization.

Table 5.21
General Linear Model: Univariate Analysis of Variance of KM Practices (KMP Index) by Country, Size, Type, and Focus

Dependent Variable: KMPINDEX

Source	F	Sig.	Observed Power ^a
COUNTRY	52.62	.00	1.00
SIZE	.48	.74	.16
TYPE	.98	.39	.27
FOCUS	.37	.68	.11

^a. Computed using alpha = .05

As summarized in Table 5.21 country variable is a significant predictor with an F score of 52.62 with a p value = .000. Size, type, and focus are not significant factors with F scores of .48, .99, and .38 respectively. Therefore, size, type, and focus of organization does not significantly affect the perceptions of Taiwanese or U.S. knowledge workers regarding the KM practices in their organizations.

Table 5.22
Bonferroni Analysis of KMP Index by Country by
Size

Dependent Variable: KMPINDEX

Bonferroni

(I) size	(J) size	Mean Difference (I-J)	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
5-500	501-1000	-8.5943E-02	1.000	-.3398	.1679
	1001-5000	1.441E-03	1.000	-.2300	.2329
	5001-10000	8.348E-02	1.000	-.1984	.3653
	10000+	.2303*	.010	3.341E-02	.4271
501-1000	5-500	8.594E-02	1.000	-.1679	.3398
	1001-5000	8.738E-02	1.000	-.2057	.3805
	5001-10000	.1694	1.000	-.1649	.5037
	10000+	.3162*	.009	4.961E-02	.5828
1001-5000	5-500	-1.4408E-03	1.000	-.2329	.2300
	501-1000	-8.7384E-02	1.000	-.3805	.2057
	5001-10000	8.204E-02	1.000	-.2356	.3997
	10000+	.2288	.088	-1.6560E-02	.4742
5001-10000	5-500	-8.3484E-02	1.000	-.3653	.1984
	501-1000	-.1694	1.000	-.5037	.1649
	1001-5000	-8.2043E-02	1.000	-.3997	.2356
	10000+	.1468	1.000	-.1466	.4402
10000+	5-500	-.2303*	.010	-.4271	-3.3411E-02
	501-1000	-.3162*	.009	-.5828	-4.9611E-02
	1001-5000	-.2288	.088	-.4742	1.656E-02
	5001-10000	-.1468	1.000	-.4402	.1466

Based on observed means.

*. The mean difference is significant at the .05 level.

In Table 5.22 Bonferroni analysis is presented comparing means of KMP index by country and size. The results show no significant differences between sizes. Therefore, size is not a moderating factor and does not affect previous analysis.

Table 5.23
Bonferroni Analysis of KMP Index by Country by
Type

Dependent Variable: KMPINDEX
Bonferroni

(I) type	(J) type	Mean Difference (I-J)	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
Business	Education	9.363E-02	1.000	-.1543	.3415
	Government	-.1664	.400	-.4060	7.328E-02
	Other	-.1057	.968	-.3051	9.377E-02
Education	Business	-9.3630E-02	1.000	-.3415	.1543
	Government	-.2600	.191	-.5800	5.997E-02
	Other	-.1993	.423	-.4903	9.178E-02
Government	Business	.1664	.400	-7.3282E-02	.4060
	Education	.2600	.191	-5.9968E-02	.5800
	Other	6.072E-02	1.000	-.2233	.3448
Other	Business	.1057	.968	-9.3767E-02	.3051
	Education	.1993	.423	-9.1775E-02	.4903
	Government	-6.0716E-02	1.000	-.3448	.2233

Based on observed means.

In Table 5.23 Bonferroni analysis is presented comparing means of KMP index by country and type. The results show no significant differences between types. Therefore, type is not a moderating factor and does not affect previous analysis.

Table 5.24
Bonferroni Analysis of KMP Index by Country by
Focus

Dependent Variable: KMPINDEX
 Bonferroni

(I) focus	(J) focus	Mean Difference (I-J)	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
Products	Services	.1810	.080	-1.4364E-02	.3764
	Both	.1567	.176	-4.1972E-02	.3554
Services	Products	-.1810	.080	-.3764	1.436E-02
	Both	-2.4315E-02	1.000	-.1666	.1179
Both	Products	-.1567	.176	-.3554	4.197E-02
	Services	2.432E-02	1.000	-.1179	.1666

Based on observed means.

In Table 5.24 Bonferroni analysis is presented comparing means of KMP index by country and focus. The results show no significant differences between focuses. Therefore, focus is not a moderating factor and does not affect previous analysis.

Chart 5.10
KMP Index by Country by Size

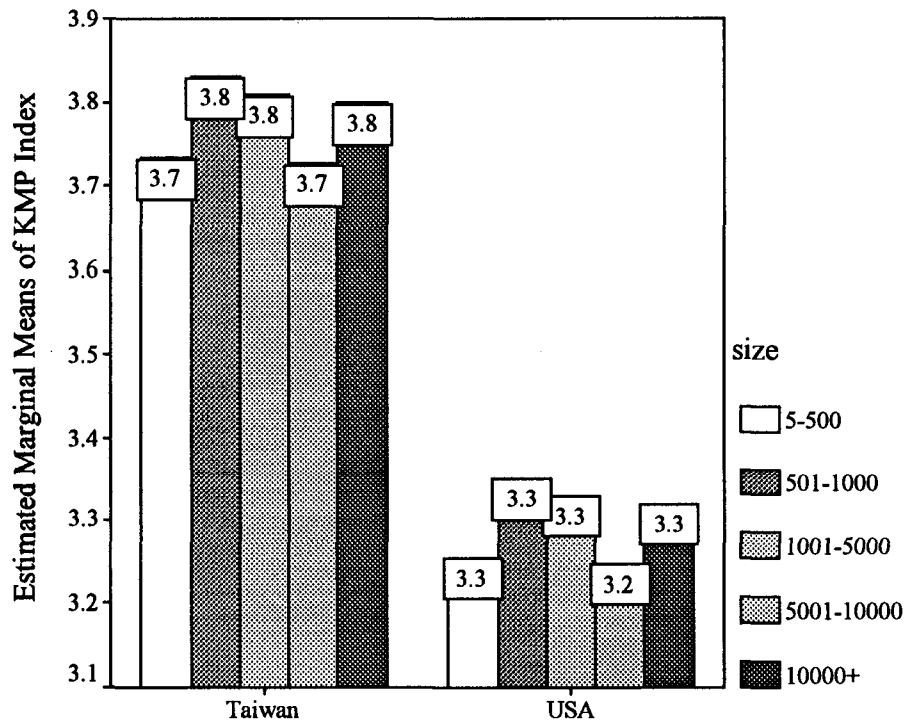


Chart 5.10 illustrates the estimated means of KMP index by country and size. The chart shows that Taiwan is higher than U.S. in KMP index in every category of size of organization.

Chart 5.11
KMP Index by Country by Type

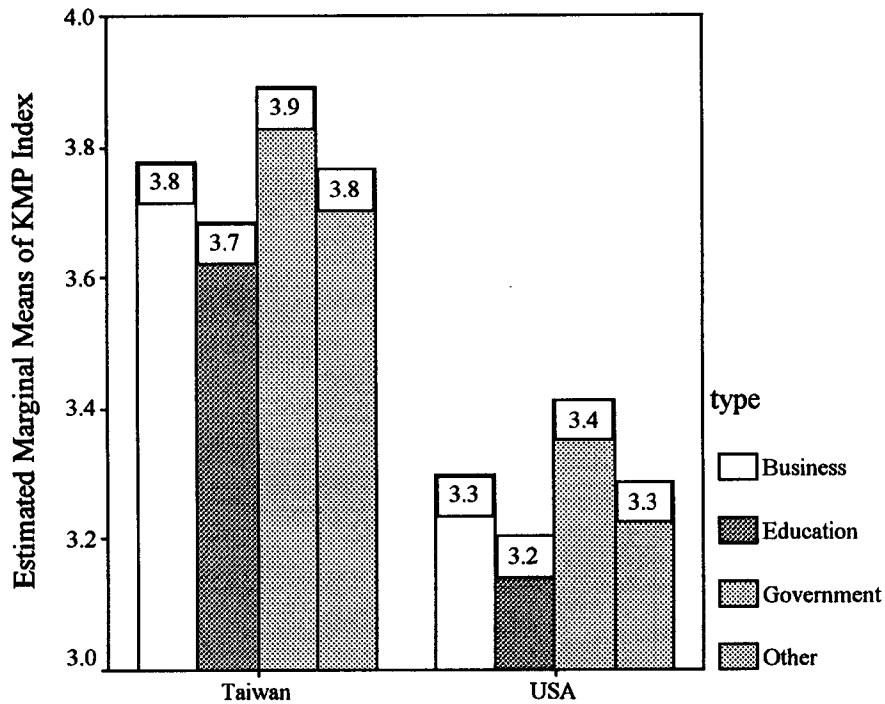


Chart 5.11 illustrates the estimated means of KMP index by country and type. The chart shows that Taiwan is higher than the U.S. in KMP index in every category of type of organization.

Chart 5.12
KMP Index by Country by Focus

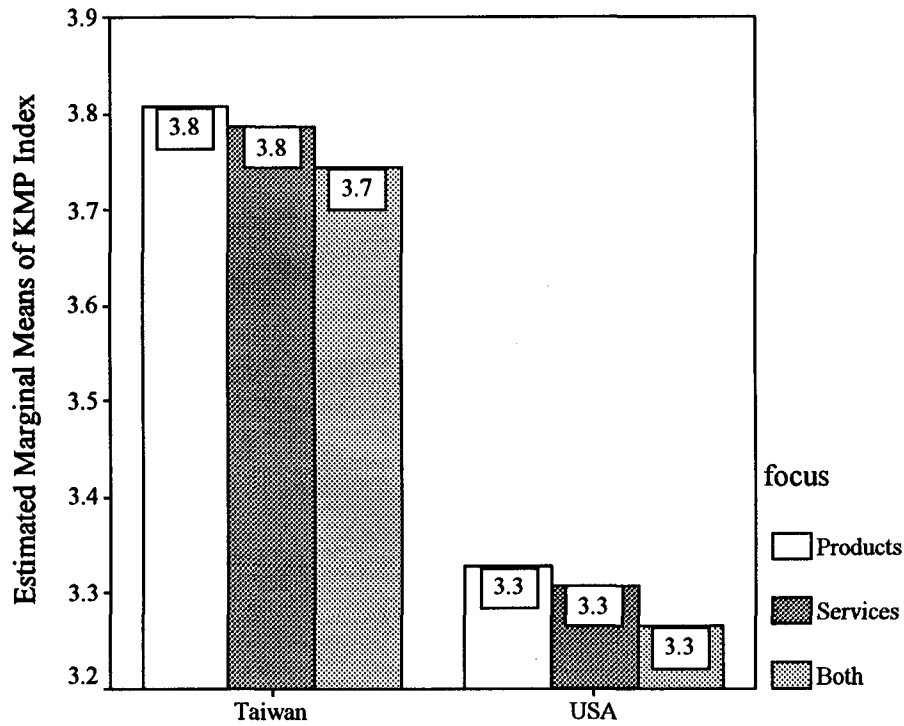


Chart 5.12 illustrates the estimated means of KMP index by country and focus. The chart shows that Taiwan is higher than the U.S. in KMP index in every category of focus of organization.

Summary of Chapter Five

This chapter has provided descriptive statistics for all KM factors (KMF), KM expectations (KME), KM practices (KMP), KMF index, KME index, and KMP index. Reliability analysis Cronbach's Alpha has been presented to justify the indexed scores for comparison of KM factors, expectations, and practices between U.S. and Taiwanese knowledge workers' perceptions and beliefs.

Analyses of variance (ANOVAs) have been used to compare the means between U.S. and Taiwanese knowledge workers' responses to the KM indexes to test the hypotheses described in Chapter 3 of this study. ANOVAs of all variables also have been presented. In addition, this chapter has provided the results from a General Linear Model (GLM) analysis of KM indexes by country for each control variables (size, type, and focus of organizations).

The following chapter, Chapter 6, provides a brief review of the purpose and methodology of the study, a summary of the results, preliminary conclusions, implications for international strategy, cross-cultural management of knowledge in global organizations, and suggestions for future research on this important topic of international KM. Following Chapter 6 is a reference list and appendices, which contain additional tables and charts of the study results.

Chapter 6

Conclusions, Implication, and Suggestions for Future Research

"All Life is Problem Solving"

-Karl Popper

This final chapter provides a brief review of the purpose of the study, restatement of the research question and hypotheses, KM trends in Asia, reflections on the methodology of the study, a summary of the results, and conclusions. Analysis of relevant cultural dimensions and implications for practice and suggestions for future research on this important topic are also discussed. Following Chapter 6 are references and appendices, which contain additional tables and charts from this study.

Brief Review of the Purpose of the Study

As previously stated, the practice of knowledge management is growing in global enterprises but there is a lack of research on that subject.

Previous studies have focused on the correlations between organizational culture and KM but have not addressed how KM is influenced by national culture. National culture influences knowledge formation and affects the management practices of individuals and groups in that region. This study attempts to contribute to the theoretical and practical understanding of the relationships between national culture and KM.

Restatement of the Research Question and Hypotheses

The research question for this study is: Are Taiwanese and U.S. beliefs, expectations, and practices about KM significantly different? The question has resulted in three hypotheses:

- H1. Taiwanese respondents' beliefs about the critical factors for successful KM are significantly different from beliefs of U.S. respondents.
- H2. Taiwanese respondents' expectations about the benefits of KM are significantly different from expectations of U.S. respondents.
- H3. Taiwanese respondents' practices are significantly different from practices of U.S. respondents.

Reflections on the Methodology of the Study

The unit of analysis is the individual. Questionnaires were distributed through mail, fax, and person-to-person delivery. All methods were quite effective. The targeted populations were scholars and general businesspersons including: university professors, graduate students, IT professionals, bankers, international trading companies, government employees, as well as many other occupational types. The total distributed sample size was 1,500 with 620 usable responses. Data on organizational control variables also have been collected, including size (number of employees), type (business, government, education, and other) and focus (products, services or both).

Limitations in Cross-Cultural Research

All research has limitations. The primary limitations in this research are cross-culture limitations and limitations due to the sample selection. This exploratory study has not proposed or implied causality. However, this study has attempted to overcome the lack of empirical research on the basic relationship between national culture and KM. It also had added to the present body of knowledge by comparing the perceptions of Taiwanese and U.S. respondents. The results provide meaningful data for exploration that yields useful insight.

General Conclusions

Despite the limitations of this study, some conclusions can be drawn from the findings. The primary conclusion is that the beliefs, expectations, and practices of KM are significantly different in Taiwan and the U.S. Table 6.1 provides a summary of the results of One-way Analysis of Variance (ANOVA) tests comparing means of indexed scores of U.S. and Taiwanese knowledge workers' responses of KM factors for success (KMF index), expectations (KME index), and practices KMP index). The F scores are very high, which represents a high probability that the responses from the two groups (U.S. and Taiwan) are significantly different. The chance of error is extremely low at less than 1% ($p < .00$). Therefore, the confidence level is very high that the findings are accurate based on the data collected. This provides very strong support for Hypotheses 1, 2, and 3 as proposed in this study based on Hofstede's framework and previously published research. However, there are some exceptions to these major conclusions.

Table 6.1
ANOVAs of KM Indexes by Country Group

		df	Mean Square	F	Sig.
KMFINDEX	Between Groups	1	6.553	26.097	.000
	Within Groups	621	.251		
	Total	622			
KMEINDEX		1	7.638	26.623	.000
		621	.287		
		622			
KMPIINDEX		1	34.183	74.231	.000
		621	.461		
		622			

Exceptions to the Conclusions for Specific Variables

The index of variables provides evidence that the perceptions and practices of knowledge workers in Taiwan and the U.S. are different. This study applies a confidence level at $p < .01$ when analyzing the specific variables that comprise the KM indexes. However, there are some exceptions to these findings. Table 6.2 provides a summary of variables, which are not significantly different.

Table 6.2
KM Variables with P > .05 Scores in ANOVA by
Country

Index	Variables	P Score
KMF Index	Climate of openness and thinking “outside the box.”	.13
	Allocating resources to manage enterprise knowledge as to relevance, accuracy, and value to the enterprise – ability to eliminate old, outdated, incorrect, or unnecessary information and knowledge	.75
	Developing and promoting employee sharing and collaboration	.82
KME Index	Stimulation and motivation of employees	.268
	Improved overall enterprise performance	.221
	Enhanced transfer of knowledge from one employee to another	.049
	Means to identify industry best practices	.173
	Better methods for enterprise-wide problem solving	.276
	Enhance the development of business strategies	.445
KMP Index	Teamwork is a critical component of our organization’s culture, structure, and processes	.199

These variables are not significantly different according to the data collected in this study. Both U.S. and Taiwanese knowledge workers perceive these variables to be about the same. Therefore, organizational structure, strategy, policies, and procedures that impact these beliefs about the factors for successful KM, KM expectations, and KM practices should not vary from the U.S. to Taiwan. The following section discusses the conclusions of the three hypotheses and these exceptions by variable in more detail.

Hypothesis I Knowledge Management Factors (KMF) Conclusions

Factors of Successful Knowledge Management Affected by National Culture

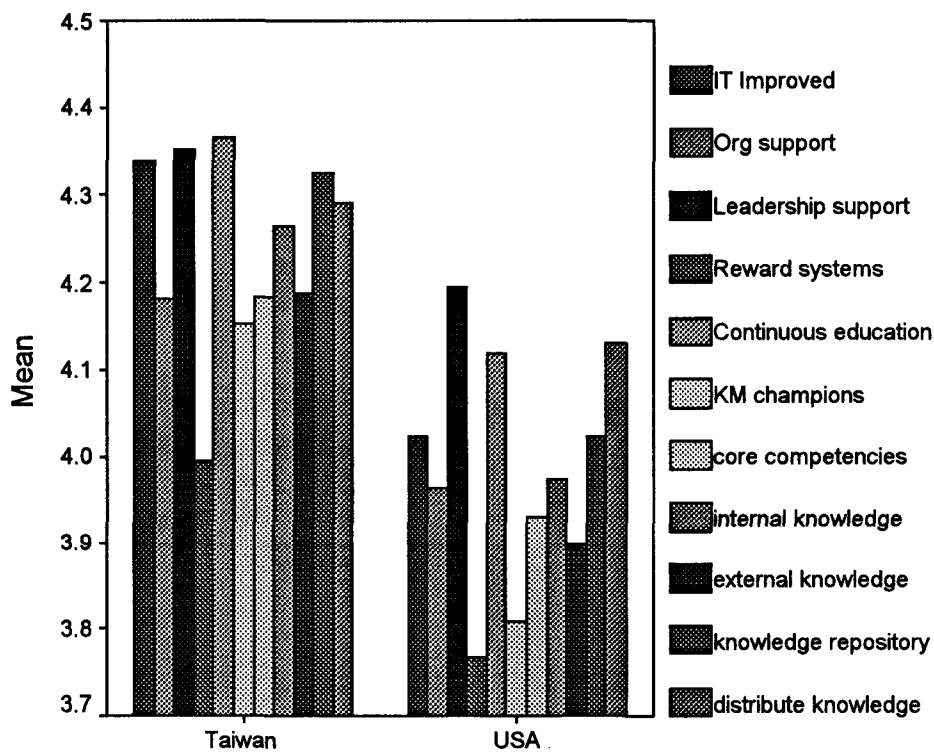
Based on the data, it appears that Hypothesis 1 (Taiwanese respondents' beliefs about the critical success factors of KM are significantly different from beliefs of U.S. respondents) is not rejected. Apparently, as a general finding, U.S. and Taiwanese knowledge workers have very different perceptions of the factors that result in successful knowledge KM in their organizations. The very high confidence level ($p < .000$) suggests that there is a very low chance of error. Table 6.3 provides a list of variables that were significantly different.

Table 6.3
Factors of Successful Knowledge Management
Affected by National Culture (U.S. and Taiwanese
Knowledge Workers Perceive Differently)

Improvements in IT infrastructure to support KM
Organizational buy-in and support of KM
Leadership involvement, support, and advocating of KM
Rewards system based on employee KM participation and support
Continuous education of employees
KM advocates and champions within the enterprise
Identifying enterprise core competencies and necessary knowledge domains to support those core competencies
Gathering and formalizing existing internal enterprise knowledge for present and future use
Gathering and formalizing existing external knowledge for present and future use
Developing an enterprise repository and database of information and knowledge to support a KM
Effective and efficient methodology of distributing knowledge to employees (automating information and knowledge to be easily accessible to employees)

The following sections provide a summary of the conclusions and implications of each of the above factors for KM success. Although the general conclusions support the hypotheses of this study, the analysis is a two-tailed test providing a result that the responses between U.S. and Taiwanese knowledge workers are significantly different. It does not explain the relative differences. In other words, it does not provide which response was higher or lower when comparing the two groups. The following charts, tables, and discussions address the differences and provide some thoughts on implications for KM in Taiwan. Chart 6.1 provides an illustration of the means of each statistically successful factor for successful KM that have significantly different scores between U.S. and Taiwanese knowledge workers.

Chart 6.1
Factors of Successful Knowledge Management Affected by National Culture
(U.S. and Taiwanese Knowledge Workers Believe Differently)



Factors of Successful Knowledge Management Not Affected by National Culture

The following section provides a brief analysis of U.S. and Taiwanese knowledge workers' responses to the variable within the KMF index that is not statistically different between the two groups. Those variables are summarized in the following Table 6.4 and discussed.

Table 6.4
Factors of Successful Knowledge Management Not
Affected by National Culture
(U.S. and Taiwanese Knowledge Workers Perceive
Differently)

Climate of openness and thinking "outside the box"
Allocating resources to manage enterprise knowledge as to relevance, accuracy, and value to the enterprise – ability to eliminate old, outdated, incorrect, or unnecessary information and knowledge
Developing and promoting employee sharing and collaboration

For these factors for success, both U.S. and Taiwanese knowledge workers have similar views. For a climate of **openness and thinking outside of the box** it appears that this factor is just as important to Taiwanese and U.S. respondents. Creativity could be a universal factor in successful KM. Future research will help clarify whether it is or not. Moreover, the results show that both factors **allocating resources to manage enterprise knowledge and developing and promoting employee sharing and collaboration** are important factors for KM success in Taiwan and the U.S. The responses to all three variables in the survey are almost identical. It could be also true that all three are universal factors.

Detailed charts for all KMF variables are included in the appendices.

Hypothesis 2 Knowledge Management Expectations (KME) Conclusions

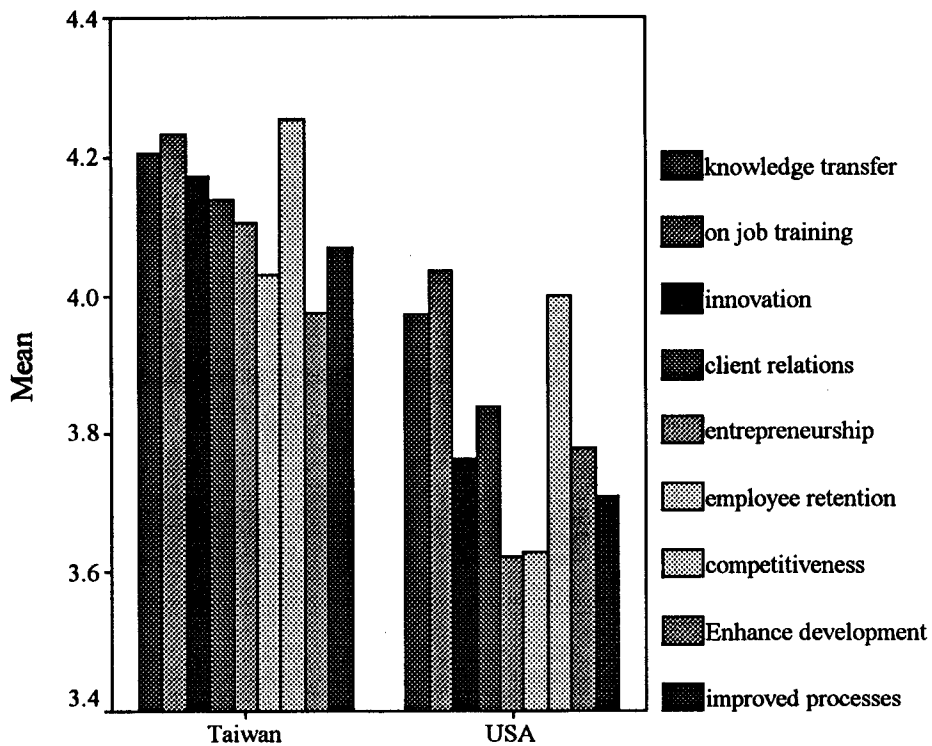
KM Expectations Affected by National Culture

Based on the data, it appears that Hypothesis 2 (Taiwanese respondents' expectations about the benefits of KM are significantly different from expectations of U.S. respondents) is not rejected. Apparently, as a general finding, U.S. and Taiwanese knowledge workers have very different expectations regarding the benefits of KM investments or initiatives. The very high confidence level ($p < .000$) suggests that there is a very low chance of error. Table 6.5 provides a list of expectations that are significantly different.

Table 6.5
KM Expectations Affected by National Culture
(U.S. and Taiwanese Knowledge Workers Perceive
Differently)

Formalized knowledge transfer system established (Best practices, lessons learned)
Better on-the-job training of employees
Enhanced enterprise innovation and creativity
Enhanced client relations - better client interaction
Development of an entrepreneurial culture for enterprise growth and success
Improved employee retention
Improved ability to sustain a competitive advantage
Enhance business development and the creation of enterprise opportunities
Enhanced and streamlined internal administrative processes

Chart 6.2
KM Expectations Affected by National Culture
(U.S. and Taiwanese Knowledge Workers Perceive Differently)



KM Expectations not Affected by National Culture

The following section provides a brief analysis of the U.S. and Taiwanese knowledge workers responses to the variable within the KME index that are not statistically different between the two groups. Those variables are summarized in Table 6.6 below.

Table 6.6
KM Expectations of U.S. and Taiwanese Knowledge Workers that are Similar

Stimulation and motivation of employees
Improved overall enterprise performance
Enhanced transfer of knowledge from one employee to another
Means to identify industry best practices
Better methods for enterprise-wide problem solving
Enhance the development of business strategies

Hypothesis 3 Knowledge Management Practices (KMP) Conclusions

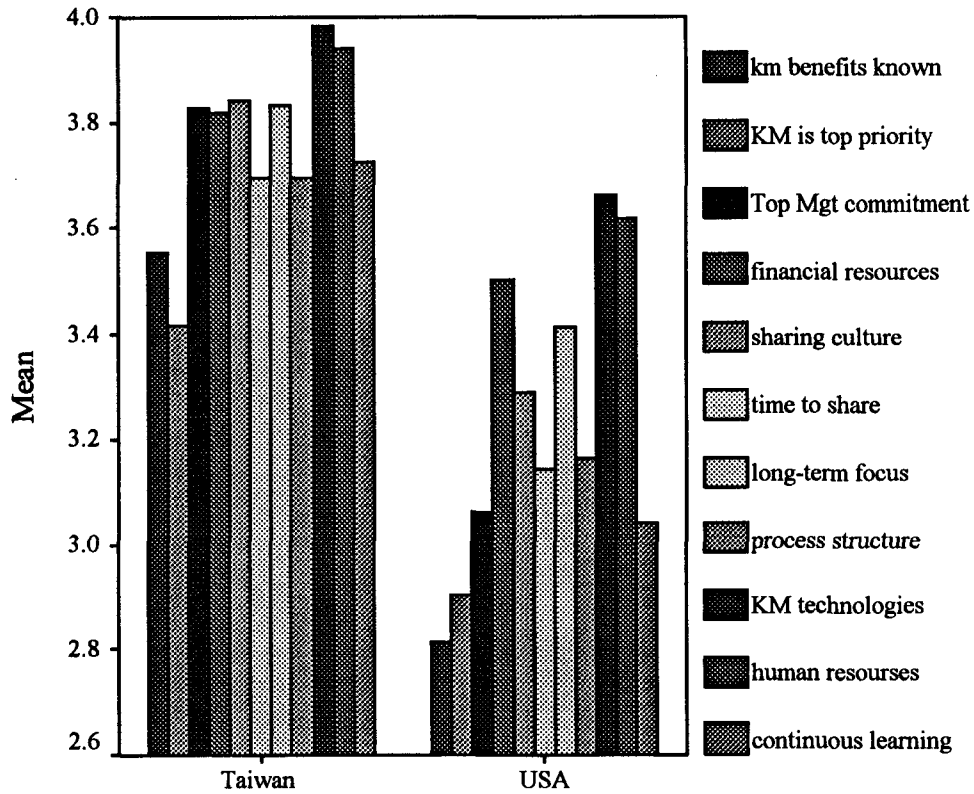
KM Practices Affected by National Culture

Based on the data, it appears that Hypothesis 3 (Taiwanese respondents' practices are significantly different from practices of U.S. respondents) is not rejected. Apparently, as a general finding, U.S. and Taiwanese knowledge workers have very different KM practices in their organizations. The very high confidence level ($p < .000$) suggests that there is a very low chance of error. Table 6.7 provides a list of KM practices that have been found to be significantly different.

Table 6.7
 KM Practices Affected by National Culture
 (U.S. and Taiwanese Knowledge Workers Perceive
 Differently)

The organizational benefits of a knowledge-centric organization are clearly understood by everyone in our organization.
KM is a top priority in our organization.
Our organization has a clear and strong commitment to KM initiatives from senior management.
Our organization has sufficient financial resources to support KM initiatives.
Our organizational culture encourages knowledge sharing.
People in our organization have the time to share information.
Teamwork is a critical component of our organization's culture, structure, and processes.
Our organizational strategies, structures, policies, procedures, processes, and reward systems focus on long-term growth.
Our organization has evolved from a rigid hierarchical structure to a process-oriented structure.
Our organization has invested in effective KM technologies (i.e., intranet, databases, email, and digital libraries).
Our organization has the human resources to support our information technology systems, software and network.
People in our organization are often rewarded for continuous learning or knowledge sharing.

Chart 6.3
 KM Practices Affected by National Culture
 (U.S. and Taiwanese Knowledge Workers Perceive Differently)



KM Practices not affected by National Culture

This brief section of Chapter 6 provides an analysis of the U.S. and Taiwanese knowledge workers' responses to the variables within the KMP index that are not statistically different between the two groups. The only variable that is not different was **Teamwork is a critical component of our organization's culture, structure, and processes.** Therefore, teamwork is an important practice for KM in both U.S. and Taiwan.

Relevant National Culture Traits for Analysis

In order to focus on the question “To what extent is KM affected by national culture?” this research integrates theory from national culture literature and current KM thinking. It explores the overall effects of national culture on KM. Specifically, it explores the extent to which the factors of individualism, collectivism, and the long-term/short-term thinking of Confucian Dynamism affects beliefs, expectations, and practices of KM.

Individualism is defined as the measure of the expectations of people in a community that each one should look after himself and his immediate family only and that others should do the same. “Individualism is the most important dimension of national culture, especially when contrasting Western and Oriental culture (Triandis, 1995; Chow, 1999).” “[It] has the largest effect on the design of and preference for management controls (Chow, 1999).”

The opposite of individualism is called Collectivism. It is defined as “the extent to which people in a society from birth onwards are integrated into strong, cohesive in-groups, which, throughout the people’s lifetimes, continue to protect them in exchange for unquestioning loyalty (Hofstede, 1998).” As previously discussed in this study, Taiwanese knowledge workers are more collective than individualistic. Table 6.8 provides a list of the cultural traits of collectivism of Taiwanese knowledge workers.

Table 6.8
Cultural Traits Associated with Collectivism
(Source: Hofstede 1997)

1. Collective interests prevail over individual interests
2. Private life is invaded by group
3. Opinions are predetermined by group membership
4. Laws and rights differ by group
5. Ideologies of equality prevail over ideologies of individual freedom
6. Harmony and consensus in society are ultimate goals
7. People are born into extended families or other communities which continue to protect them in exchange for loyalty
8. Identity is based in the social network to which one belongs
9. Direct confrontation should be avoided
10. Trespassing leads to shame and loss of face for self and group
11. Purpose of education is learning how to do
12. Relationship between employee and employer is perceived in moral terms, like a family link
13. Hiring and promotion decisions take employee's group into account
14. Management is management of groups
15. Relationship prevails over task

Confucian Dynamism describes ways of doing things and interactions between people. Confucius was the most revered Chinese philosopher who lived around the 5th century B.C., and he promoted both long-term thinking and short-term thinking. The more dynamic, future-oriented Confucian values, such as 'thrift' and 'perseverance' on one side are complemented by the more static past- and present-oriented values like 'tradition' and 'reciprocation of greetings, favors, and gifts.' (Hofstede, 1998) As previously discussed in this study, Taiwanese knowledge workers have very high scores in Confucian Dynamism. The following Table 6.9 provides values associated with Confucian Dynamism and therefore, cultural traits of knowledge workers in Taiwan.

Table 6.9
Cultural Traits Associated with Confucian Dynamism
(Source: Hofstede, 1997)

Category of Trait	Cultural Trait
Future oriented	1. Persistence (perseverance)
	2. Ordering relationships by status and observing this order
	3. Thrift
	4. Having a sense of shame
Past- and Present-oriented	5. Personal steadiness and stability
	6. Protecting your face [saving face]
	7. Respect of tradition
	8. Reciprocation of greetings, favors, and gifts

Implications for Taiwan Knowledge Management Vendors, Consultants, and Educators

The national culture traits of Collectivism and Confucian Dynamism characteristic of the Taiwanese people have greater impact on KM in Taiwan than they would in the U.S. The way that Taiwanese business people work in the Taiwan market differs than the way U.S. business people would anticipate working in the Taiwan market.

Collectivism and Implications for Knowledge Management in Taiwan

In addition, the following table provides a summary of the cultural traits of collectivism and their implications for KM in Taiwan in a general sense. The traits can be classified as enablers and/or barriers to KM success.

Table 6.10
Cultural Traits of Collectivism and Implications for
Knowledge Management in Taiwan

Cultural Traits of Collectivism (Source: Hofstede 1997)	Implications for Knowledge Management in Taiwan	
	Enabler	Barrier
Collective interests prevail over individual interests	✓	
Private life is invaded by group		✓
Opinions are predetermined by group membership	✓	
Laws and rights differ by group		✓
Ideologies of equality prevail over ideologies of individual freedom	✓	
Harmony and consensus in society are ultimate goals	✓	
People are born into extended families or other communities which continue to protect them in exchange for loyalty	✓	
Identity is based in the social network to which one belongs	✓	
Direct confrontation should be avoided	✓	
Trespassing leads to shame and loss of face for self and group	✓	
Purpose of education is learning how to do	✓	
Relationship between employee and employer is perceived in moral terms, like a family link	✓	
Hiring and promotion decisions take employee's group into account	✓	
Management is management of groups	✓	
Relationship prevails over task	✓	

Most of the traits associated with collectivist cultures are very supportive to the general construct of KM. They are strong enablers of knowledge sharing. **Private life is invaded by group** is a trait that would create a barrier to KM in Taiwan. **Laws and**

rights differ by group is also a phenomenon in Asian cultures that would provide barriers to effective communication and shared understanding of knowledge. Again, in general collectivist values and mindset provide significant support for KM in Taiwan.

The following tables (6.11, 6.12, and 6.13) provide a summary of the factors, expectations, and practices that have been found to be significantly related or affected by national culture. Letters are assigned to each significant factor, expectation, and practice for further analysis and discussion in the following pages.

Table 6.11
Factors of Successful Knowledge Management
Affected by National Culture (U.S. and Taiwanese
Knowledge Workers Perceive Differently)

A. Improvements in IT infrastructure to support KM
B. Organizational buy-in and support of KM
C. Leadership involvement, support, and advocating of KM
D. Rewards system based on employee KM participation and support
E. Continuous education of employees
F. KM advocates and champions within the enterprise
G. Identifying enterprise core competencies and necessary knowledge domains to support those core competencies
H. Gathering and formalizing existing internal enterprise knowledge for present and future use
I. Gathering and formalizing existing external knowledge for present and future use
J. Developing an enterprise repository and database of information and knowledge to support KM
K. Effective and efficient methodology of distributing knowledge to employees (automating information and knowledge to be easily accessible to employees)

Table 6.12
 KM Expectations Affected by National Culture
 (U.S. and Taiwanese Knowledge Workers Perceive
 Differently)

A. Formalized knowledge transfer system established (Best practices, lessons learned)
B. Better on-the-job training of employees
C. Enhanced enterprise innovation and creativity
D. Enhanced client relations - better client interaction
E. Development of an entrepreneurial culture for enterprise growth and success
F. Improved employee retention
G. Improved ability to sustain a competitive advantage
H. Enhance business development and the creation of enterprise opportunities
I. Enhanced and streamlined internal administrative processes

Table 6.13
 KM Practices Affected by National Culture
 (U.S. and Taiwanese Knowledge Workers Perceive
 Differently)

A. The organizational benefits of a knowledge-centric organization are clearly understood by everyone in our organization
B. KM is a top priority in our organization
C. Our organization has a clear and strong commitment to KM initiatives from senior management
D. Our organization has sufficient financial resources to support KM initiatives
E. Our organizational culture encourages knowledge sharing
F. People in our organization have the time to share information
G. Our organizational strategies, structures, policies, procedures, processes, and reward systems focus on long-term growth
H. Our organization has evolved from a rigid hierarchical structure to a process-oriented structure
I. Our organization has invested in effective KM technologies (i.e., intranet, databases, email and digital libraries)
J. Our organization has the human resources to support our information technology systems, software, and network
K. People in our organization are often rewarded for continuous learning or knowledge sharing

Collectivism and KM Factors for Success

The following Table 6.14 provides a summary of the cultural traits of collectivism and the alphabetical letter that represents the relevant KM factor. The following section provides a summary of the conclusions of the impact of collectivism traits on each of the KM factors that are believed differently by U.S. and Taiwanese knowledge workers.

Table 6.14
The Affects of Collectivism on KM Factors for those
Variables that were Significantly Different

Cultural Traits of Collectivism (Source: Hofstede 1997)	KM Factors Affected by the Cultural Trait
Collective interests prevail over individual interests	A, B, C, D, E, F, G, H, I, J, K
Private life is invaded by group	C, D, E, F
Opinions are predetermined by group membership	A, B, C, D, E, F, G, H, I, J, K
Laws and rights differ by group	B, C, D
Ideologies of equality prevail over ideologies of individual freedom	B, F
Harmony and consensus in society are ultimate goals	A, B, C, D, E, F, G, H, I, J, K
People are born into extended families or other communities which continue to protect them in exchange for loyalty	B, C, D, E
Identity is based in the social network to which one belongs	A, B, C
Direct confrontation should be avoided	A, B, C, D, E, F, G, H, I, J, K
Trespassing leads to shame and loss of face for self and group	C
Purpose of education is learning how to do	A, B, C, D, E, F, G, H, I, J, K
Relationship between employee and employer is perceived in moral terms, like a family link	B, C
Hiring and promotion decisions take employee's group into account	B, C, D
Management is management of groups	B, F, H, I, J, K
Relationship prevails over task	B, C

Collective Interests Prevail over Individual Interests

The trait labeled **collective interests prevail over individual interests** affects the following KM factors:

- Improvements in IT infrastructure to support KM;
- Organizational buy-in and support of KM;
- Leadership involvement, support, and advocating of knowledge management;
- Rewards system based on employee KM participation and support; continuous education of employees; KM advocates and champions within the enterprise;
- Identifying enterprise core competencies and necessary knowledge domains to support those core competencies;
- Gathering and formalizing existing internal enterprise knowledge for present and future use;
- Gathering and formalizing existing external knowledge for present and future use;
- Developing an enterprise repository and database of information and knowledge to support KM; and
- Effective and efficient methodology of distributing knowledge to employees (automating information and knowledge to be easily accessible to employees).

Private Life is Invaded by Group

The trait labeled **private life is invaded by group** affects the following KM factors:

- Leadership involvement, support, and advocating of KM;
- Rewards system based on employee KM participation and support;
- Continuous education of employees; and
- KM advocates and champions within the enterprise.

Opinions are Predetermined by Group Membership

The trait labeled **opinions are predetermined by group membership** affects the following KM factors:

- Improvements in IT infrastructure to support the KM;
- Organizational buy-in and support of KM;
- Leadership involvement, support, and advocating of KM;
- Rewards system based on employee KM participation and support;
- Continuous education of employees;
- KM advocates and champions within the enterprise;
- Identifying enterprise core competencies and necessary knowledge domains to support those core competencies;
- Gathering and formalizing existing internal enterprise knowledge for present and future use;
- Gathering and formalizing existing external knowledge for present and future use;
- Developing an enterprise repository and database of information and knowledge to support KM; and
- Effective and efficient methodology of distributing knowledge to employees (automating information and knowledge to be easily accessible to employees).

Laws and Rights Differ by Group

The trait labeled **laws and rights differ by group** affects the following KM factors:

- Organizational buy-in and support of KM;

- Leadership involvement, support, and advocating of KM; and
- Rewards systems should be based on employee KM participation and support.

Ideologies of Equality Prevail over Ideologies of Individual Freedom

The trait labeled **ideologies of equality prevails over ideologies of individual freedom** affects the following KM factors:

- Organizational buy-in and support of KM; and
- KM advocates and champions within the enterprise.

Harmony and Consensus in Society are Ultimate Goals

The trait labeled **harmony and consensus in society are ultimate goals** affects the following KM factors:

- Improvements in IT infrastructure to support the KM;
- Organizational buy-in and support of KM;
- Leadership involvement, support, and advocating of KM;
- Rewards system based on employee KM participation and support;
- Continuous education of employees; KM advocates and champions within the enterprise;
- Identifying enterprise core competencies and necessary knowledge domains to support those core competencies;
- Gathering and formalizing existing internal enterprise knowledge for present and future use;
- Gathering and formalizing existing external knowledge for present and future use;

- Developing an enterprise repository and database of information and knowledge to support KM; and
- Effective and efficient methodology of distributing knowledge to employees (automating information and knowledge to be easily accessible to employees).

People are Born into Extended Families or Other Communities, which Continue to Protect Them in Exchange for Loyalty

The trait labeled **people are born into extended families or other communities which continue to protect them in exchange for loyalty** affects the following KM factors:

- Organizational buy-in and support of KM;
- Leadership involvement, support, and advocating of KM;
- Rewards system based on employee KM participation and support; and
- Continuous education of employees.

Identity is Based in the Social Network to which One Belongs

The trait labeled **identity is based in the social network to which one belongs** affects the following KM factors:

- Improvements in IT infrastructure to support the KM;
- Organizational buy-in and support of KM; and
- Leadership support.

Direct Confrontation should be Avoided

The trait labeled **direct confrontation should be avoided** affects the following KM factors:

- Improvements in IT infrastructure to support the KM;
- Organizational buy-in and support of KM;
- Leadership involvement, support, and advocating of KM;
- Rewards system based on employee KM participation and support;
- Continuous education of employees; KM advocates and champions within the enterprise;
- Identifying enterprise core competencies and necessary knowledge domains to support those core competencies;
- Gathering and formalizing existing internal enterprise knowledge for present and future use;
- Gathering and formalizing existing external knowledge for present and future use;
- Developing an enterprise repository and database of information and knowledge to support KM; and,
- Effective and efficient methodology of distributing knowledge to employees (automating information and knowledge to be easily accessible to employees).

Trespassing Leads to Shame and Loss of Face for Self and Group

The trait labeled **trespassing leads to shame and loss of face for self and group** affects the following KM factor:

- Leadership involvement, support, and advocating of KM.

Purpose of Education is Learning How to Do

The trait labeled **purpose of education is learning how to do** affects the following KM factors:

- Improvements in IT infrastructure to support the KM;
- Organizational buy-in and support of KM;
- Leadership involvement, support, and advocating of KM;
- Rewards system based on employee KM participation and support;
- Continuous education of employees;
- KM advocates and champions within the enterprise;
- Identifying enterprise core competencies and necessary knowledge domains to support those core competencies;
- Gathering and formalizing existing internal enterprise knowledge for present and future use;
- Gathering and formalizing existing external knowledge for present and future use;
- Developing an enterprise repository and database of information and knowledge to support KM; and
- Effective and efficient methodology of distributing knowledge to employees (automating information and knowledge to be easily accessible to employees).

Relationship Between Employee and Employer is Perceived in Moral Terms, Like a Family Link

The trait labeled **relationship between employee and employer is perceived in moral terms, like a family link** affects the following KM factors:

- Organizational buy-in and support of KM; and

- Leadership involvement, support, and advocating of KM.

Hiring and Promotion Decisions Take Employee's Group into Account

The trait labeled **hiring and promotion decisions take employee's group into account** affects the following KM factors:

- Organizational buy-in and support of KM;
- Leadership involvement, support, and advocating of KM; and
- Rewards system based on employee KM participation and support.

Management is Management of Groups

The trait labeled **management is management of groups** affects the following KM factors:

- Organizational buy-in and support of KM;
- KM advocates and champions within the enterprise;
- Gathering and formalizing existing internal enterprise knowledge for present and future use;
- Gathering and formalizing existing external knowledge for present and future use;
- Developing an enterprise repository and database of information and knowledge to support KM; and
- Effective and efficient methodology of distributing knowledge to employees (automating information and knowledge to be easily accessible to employees).

Relationship Prevails over Task

The trait labeled **relationship prevails over task** affects the following KM factors:

- Organizational buy-in and support of KM; and
- Leadership involvement, support, and advocating of KM.

Collectivism and KM Expectations

The following table 6.15 provides a summary of the cultural traits of collectivism and the relevant affected KM expectations. The following section provides a summary of the implications of KM expectations, which are driven by collectivism traits.

Table 6.15
The Implications of Collectivism on KM
Expectations for those Variables where Perceptions
were Significantly Different between U.S. and
Taiwanese Knowledge Workers

Cultural Traits of Collectivism (Source: Hofstede 1997)	Significant KM Expectations Driven by the Cultural Trait
Collective interests prevail over individual interests	A, B, C, D, E, F, G, H, I
Private life is invaded by group	B
Opinions are predetermined by group membership	A, B, C, D, E, F, G, H, I,
Laws and rights differ by group	A, B
Ideologies of equality prevail over ideologies of individual freedom	B
Harmony and consensus in society are ultimate goals	A, B, C, D, E, F, G, H, I,
People are born into extended families or other communities which continue to protect them in exchange for loyalty	A, B, C, E, F, G
Identity is based in the social network to which one belongs	D, E, F
Direct confrontation should be avoided	A, B, C, D, E, F, G, H, I,
Trespassing leads to shame and loss of face for self and group	B
Purpose of education is learning how to do	A, B
Relationship between employee and employer is perceived in moral terms, like a family link	A, B, F
Hiring and promotion decisions take employee's group into account	C, E, F, G
Management is management of groups	A, E
Relationship prevails over task	D, F

Collective Interests Prevail over Individual Interests

The trait labeled **collective interests prevail over individual interests** drives the following KM expectations:

- Formalized knowledge transfer system established (Best practices, lessons learned);
- Better on-the-job training of employees;
- Enhanced enterprise innovation and creativity;
- Enhanced client relations - better client interaction;
- Development of an entrepreneurial culture for enterprise growth and success; Improved employee retention;
- Improved ability to sustain a competitive advantage;
- Enhance business development and the creation of enterprise opportunities; and
- Enhanced and streamlined internal administrative processes.

Group Invades Private Life

The trait labeled **private life is invaded by group** drives the following KM expectations:

- Better on-the-job training of employees.

Opinions are Predetermined by Group Membership

The trait labeled **opinions are predetermined by group membership** drives the following KM expectations:

- Formalized knowledge transfer system established (Best practices, lessons learned);
- Better on-the-job training of employees;
- Enhanced enterprise innovation and creativity;
- Enhanced client relations - better client interaction;

- Development of an entrepreneurial culture for enterprise growth and success;
- Improved employee retention;
- Improved ability to sustain a competitive advantage;
- Enhance business development and the creation of enterprise opportunities;
- Enhanced and streamlined internal administrative processes.

Laws and Rights Differ by Group

The trait labeled **laws and rights differ by group** drives the following KM expectations:

- Formalized knowledge transfer system established (Best practices, lessons learned);
- Better on-the-job training of employees.

Ideologies of Equality Prevail over Ideologies of Individual Freedom

The trait labeled **ideologies of equality prevail over ideologies of individual freedom** drives the following KM expectations:

- Better on-the-job training of employees.

Harmony and Consensus in Society are Ultimate Goals

The trait labeled **harmony and consensus in society are ultimate goals** drives the following KM expectations:

- Formalized knowledge transfer system established (Best practices, lessons learned);
- Better on-the-job training of employees;
- Enhanced enterprise innovation and creativity;
- Enhanced client relations - better client interaction;
- Development of an entrepreneurial culture for enterprise growth and success;
- Improved employee retention;
- Improved ability to sustain a competitive advantage;
- Enhance business development and the creation of enterprise opportunities; and
- Enhanced and streamlined internal administrative processes.

People are Born into Extended Families or other Communities, which Continue to Protect Them in Exchange for Loyalty

The trait labeled **people are born into extended families or other communities, which continue to protect them in exchange for loyalty** drives the following KM expectations:

- Formalized knowledge transfer system established (Best practices, lessons learned);
- Better on-the-job training of employees;
- Enhanced enterprise innovation and creativity;
- Development of an entrepreneurial culture for enterprise growth and success; Improved employee retention; and
- Improved ability to sustain a competitive advantage.

Identity is Based in the Social Network to which One Belongs

The trait labeled **identity is based in the social network to which one belongs** drives the following KM expectations:

- Enhanced client relations - better client interaction;
- Development of an entrepreneurial culture for enterprise growth and success;
and
- Improved employee retention.

Direct Confrontation should be Avoided

The trait labeled **direct confrontation should be avoided** drives the following KM expectations:

- Formalized knowledge transfer system established (Best practices, lessons learned);
- Better on-the-job training of employees;
- Enhanced enterprise innovation and creativity;
- Enhanced client relations - better client interaction;
- Development of an entrepreneurial culture for enterprise growth and success;
- Improved employee retention;
- Improved ability to sustain a competitive advantage;
- Enhance business development and the creation of enterprise opportunities;
and
- Enhanced and streamlined internal administrative processes.

Trespassing Leads to Shame and Loss of Face for Self and Group

The trait labeled **trespassing leads to shame and loss of face for self and group** drives the expectation of better on-the-job training of employees.

Purpose of Education is Learning How to Do

The trait labeled **purpose of education is learning how to do** drives the following KM expectations:

- Formalized knowledge transfer system established (Best practices, lessons learned); and
- Better on-the-job training of employees.

Relationship Between Employee and Employer is Perceived in Moral Terms, Like a Family Link

The trait labeled **relationship between employee and employer is perceived in moral terms, like a family link** drives the following KM expectations:

- Formalized knowledge transfer system established (Best practices, lessons learned);
- Better on-the-job training of employees; and
- Improved employee retention.

Hiring and Promotion Decisions Take Employee's Group into Account

The trait labeled **hiring and promotion decisions take employee's group into account** drives the following KM expectations:

- Enhanced enterprise innovation and creativity;
- Development of an entrepreneurial culture for enterprise growth and success;
- Improved employee retention; and
- Improved ability to sustain a competitive advantage.

Management is Management of Groups

The trait labeled **management is management of groups** drives the following KM expectations:

- Formalized knowledge transfer system established (Best practices, lessons learned); and
- Development of an entrepreneurial culture for enterprise growth and success.

Relationship Prevails over Task

The trait labeled **relationship prevails over task** drives the following KM expectations:

- Enhanced client relations - better client interaction; and
- Improved employee retention.

Collectivism and KM Practices

Table 6.16 provides a summary of the cultural traits of collectivism and the relevant affected KM practices. The following section provides a summary of the implications of the KM practices enabled by collectivism traits.

Table 6.16
The Implications of Collectivism on KM Practices
for those Variables where Perceptions were
Significantly Different between U.S. and Taiwanese
Knowledge Workers

Cultural Traits of Collectivism (Source: Hofstede 1997)	Significant KM Practices Enabled by the Cultural Trait
Collective interests prevail over individual interests	A, B, C, D, E, F, G, H, I, J, K
Private life is invaded by group	K
Opinions are predetermined by group membership	A, B, C, D, E, F, G, H, I, J,
Laws and rights differ by group	D, I, K
Ideologies of equality prevail over ideologies of individual freedom	A, E, K
Harmony and consensus in society are ultimate goals	A, B, C, D, E, F, G, H, I, J, K
People are born into extended families or other communities which continue to protect them in exchange for loyalty	A, B, C, E, G
Identity is based in the social network to which one belongs	K
Direct confrontation should be avoided	A, B, C, D, E, F, G, H, I, J, K
Trespassing leads to shame and loss of face for self and group	D
Purpose of education is learning how to do	B, E, F
Relationship between employee and employer is perceived in moral terms, like a family link	C
Hiring and promotion decisions take employee's group into account	E, F
Management is management of groups	E, F
Relationship prevails over task	E, F

Collective Interests Prevail over Individual Interests

The trait labeled **collective interests prevail over individual interests** enables the following KM practices:

- The organizational benefits of a knowledge-centric organization are clearly understood by everyone in our organization;
- KM is a top priority in our organization;
- Our organization has a clear and strong commitment to KM initiatives from senior management;
- Our organization has sufficient financial resources to support KM initiatives;
- Our organizational culture encourages knowledge sharing;
- People in our organization have the time to share information;
- Our organizational strategies, structures, policies, procedures, processes, and reward systems focus on long-term growth;
- Our organization has evolved from a rigid hierarchical structure to a process-oriented structure;
- Our organization has invested in effective KM technologies (i.e., intranet, databases, email, and digital libraries);
- Our organization has the human resources to support our information technology systems, software, and network; and
- People in our organization are often rewarded for continuous learning or knowledge sharing.

Group Invades Private Life

The trait labeled **private life is invaded by group** enables the following KM practices:

- People in our organization are often rewarded for continuous learning or knowledge sharing.

Opinions are Predetermined by Group Membership

The trait labeled **opinions are predetermined by group membership** enables the following KM practices:

- The organizational benefits of a knowledge-centric organization are clearly understood by everyone in our organization;
- KM is a top priority in our organization;
- Our organization has a clear and strong commitment to KM initiatives from senior management;
- Our organization has sufficient financial resources to support KM initiatives;
- Our organizational culture encourages knowledge sharing;
- People in our organization have the time to share information;
- Our organizational strategies, structures, policies, procedures, processes, and reward systems focus on long-term growth;
- Our organization has evolved from a rigid hierarchical structure to a process-oriented structure;
- Our organization has invested in effective KM technologies (i.e., intranet, databases, email, and digital libraries); and
- Our organization has the human resources to support our information technology systems, software, and network.

Laws and Rights Differ by Group

The trait labeled **laws and rights differ by group** enables the following KM practices:

- Our organization has a clear and strong commitment to KM initiatives from senior management;

- Our organization has sufficient financial resources to support KM initiatives;
- Our organization has invested in effective KM technologies (i.e., intranet, databases, email, and digital libraries); software and network; and
- People in our organization are often rewarded for continuous learning or knowledge sharing.

Ideologies of Equality Prevail over Ideologies of Individual Freedom

The trait labeled **ideologies of equality prevail over ideologies of individual freedom** enables the following KM practices:

- The organizational benefits of a knowledge-centric organization are clearly understood by everyone in our organization;
- Our organizational culture encourages knowledge sharing; and
- People in our organization are often rewarded for continuous learning or knowledge sharing.

Harmony and Consensus in Society are Ultimate Goals

The trait labeled **harmony and consensus in society are ultimate goals** enables the following KM practices:

- The organizational benefits of a knowledge-centric organization are clearly understood by everyone in our organization;
- KM is a top priority in our organization;
- Our organization has a clear and strong commitment to KM initiatives from senior management;
- Our organization has sufficient financial resources to support KM initiatives;
- Our organizational culture encourages knowledge sharing;

- People in our organization have the time to share information;
- Our organizational strategies, structures, policies, procedures, processes, and reward systems focus on long-term growth;
- Our organization has evolved from a rigid hierarchical structure to a process-oriented structure;
- Our organization has invested in effective KM technologies (i.e., intranet, databases, email, and digital libraries);
- Our organization has the human resources to support our information technology systems, software, and network; and
- People in our organization are often rewarded for continuous learning or knowledge sharing.

People are Born into Extended Families or other Communities, which Continue to Protect Them in Exchange for Loyalty

The trait labeled **people are born into extended families or other communities, which continue to protect them in exchange for loyalty** enables the following KM practices:

- The organizational benefits of a knowledge-centric organization are clearly understood by everyone in our organization;
- KM is a top priority in our organization;
- Our organization has a clear and strong commitment to KM initiatives from senior management;
- Our organizational culture encourages knowledge sharing;
- Our organizational strategies, structures, policies, procedures, processes, and reward systems focus on long-term growth;
- Identity is based in the social network to which one belongs affects KM practices; and
- People in our organization are often rewarded for continuous learning or knowledge sharing.

Direct Confrontation Should be Avoided

The trait labeled **direct confrontation should be avoided** enables the following KM practices:

- The organizational benefits of a knowledge-centric organization are clearly understood by everyone in our organization;
- KM is a top priority in our organization;
- Our organization has a clear and strong commitment to KM initiatives from senior management;
- Our organization has sufficient financial resources to support KM initiatives;
- Our organizational culture encourages knowledge sharing;
- People in our organization have the time to share information;
- Our organizational strategies, structures, policies, procedures, processes, and reward systems focus on long-term growth;
- Our organization has evolved from a rigid hierarchical structure to a process-oriented structure;
- Our organization has invested in effective KM technologies (i.e., intranet, databases, email, and digital libraries);
- Our organization has the human resources to support our information technology systems, software, and network; and
- People in our organization are often rewarded for continuous learning or knowledge sharing.

Trespassing Leads to Shame and Loss of Face for Self and Group

The trait labeled **trespassing leads to shame and loss of face for self and group** enables the following KM practices:

- Our organization has sufficient financial resources to support KM initiatives.

Purpose of Education is Learning How to Do

The trait labeled **purpose of education is learning how to do** enables the following KM practices:

- KM is a top priority in our organization;
- Our organizational culture encourages knowledge sharing; and
- People in our organization have the time to share information.

Relationship Between Employee and Employer is Perceived in Moral Terms, Like a Family Link

The trait labeled **relationship between employee and employer is perceived in moral terms, like a family link** enables the following KM practices:

- Our organization has a clear and strong commitment to KM initiatives from senior management.

Hiring and Promotion Decisions take Employee's Group into Account

The trait labeled **hiring and promotion decisions take employee's group into account** enables the following KM practices:

- Our organizational culture encourages knowledge sharing; and
- People in our organization have the time to share information.

Management is Management of Groups

The trait labeled **management is management of groups** enables the following KM practices:

- Our organizational culture encourages knowledge sharing; and
- People in our organization have the time to share information.

Relationship Prevails over Task

The trait labeled **relationship prevails over task** enables the following KM practices:

- Our organizational culture encourages knowledge sharing; and
- People in our organization have the time to share information.

Confucian Dynamism and Implications for Knowledge Management in Taiwan

Most of the Confucian Dynamism traits are enablers of KM. **Ordering relationships by status and observing this order** is a trait that in general would create barriers to KM in Taiwan. The following Table 6.17 provides a summary of those relationships.

Table 6.17
Cultural Factors of Confucian Dynamism and
Implications for Knowledge Management in Taiwan

Cultural Traits of Confucian Dynamism (Source: Hofstede 1997)	Implications for Knowledge Management in Taiwan	
	Enabler	Barrier
Persistence (perseverance)	✓	
Ordering relationships by status and observing this order		✓
Thrift	✓	
Having a sense of shame	✓	
Personal steadiness and stability	✓	
Protecting your face [saving face]	✓	
Respect of tradition	✓	
Reciprocation of greetings, favors, and gifts	✓	

Confucian Dynamism and KM Factors for Success

Table 6.18 provides a summary of the cultural traits of Confucian Dynamism and the relevant affected KM factors. The following section provides a summary of the conclusions of the impact of Confucian Dynamism traits on KM factors.

Table 6.18
The Implications of Confucian Dynamism on KM
Factors for those Variables where Perceptions were
Significantly Different between U.S. and Taiwanese
Knowledge Workers

Cultural Traits of Confucian Dynamism (Source: Hofstede 1997)	Significant KM Factors Enabled by the Cultural Trait
Persistence (Perseverance)	B, C, E, F
Ordering relationships by status and observing this order	A, G, H, I
Thrift	A, D, H, J, K
Having a sense of shame	B, C, D, E
Personal steadiness and stability	B, C, D, E, F
Protecting your face [Saving face]	B, C, D, E
Respect of tradition	C, E, J, K
Reciprocation of greetings, favors, and gifts	B, C, D

Persistence (Perseverance)

The trait labeled **persistence (perseverance)** affects the following KM factors:

- Organizational buy-in and support of KM;
- Leadership involvement, support, and advocating of KM;
- Continuous education of employees; and
- KM advocates and champions within the enterprise.

Ordering Relationships by Status and Observing this Order

The trait labeled **ordering relationships by status and observing this order** affects the following KM factors:

- Improvements in IT infrastructure to support KM;

- Identifying enterprise core competencies and necessary knowledge domains to support those core competencies;
- Gathering and formalizing existing internal enterprise knowledge for present and future use; and
- Gathering and formalizing existing external knowledge for present and future use.

Thrift

The trait labeled **thrift** affects the following KM factors:

- Improvements in IT infrastructure to support the KM;
- Rewards system based on employee KM participation and support;
- Gathering and formalizing existing internal enterprise knowledge for present and future use;
- Developing an enterprise repository and database of information and knowledge to support KM; and
- Effective and efficient methodology of distributing knowledge to employees (automating information and knowledge to be easily accessible to employees).

Having a Sense of Shame

The trait labeled **having a sense of shame** affects the following KM factors:

- Organizational buy-in and support of KM;
- Leadership involvement, support, and advocating of KM;
- Rewards system based on employee KM participation and support; and
- Continuous education of employees.

Personal Steadiness and Stability

The trait labeled **personal steadiness and stability** affects the following KM factors:

- Organizational buy-in and support of KM;
- Leadership involvement, support, and advocating of KM;
- Rewards system based on employee KM participation and support; and
- Continuous education of employees; KM advocates and champions within the enterprise.

Protecting and Saving Face

The trait labeled **protecting and saving face** affects the following KM factors:

- Organizational buy-in and support of KM;
- Leadership involvement, support, and advocating of KM;
- Rewards system based on employee KM participation and support;
- Continuous education of employees;
- Developing an enterprise repository and database of information and knowledge to support KM; and
- Effective and efficient methodology of distributing knowledge to employees (automating information and knowledge to be easily accessible to employees).

Respect of Tradition

The trait labeled **respect of tradition** affects the following KM factors:

- Leadership involvement, support, and advocating of KM;

- Developing an enterprise repository and database of information and knowledge to support a KM;
- Effective and efficient methodology of distributing knowledge to employees (automating information and knowledge to be easily accessible to employees).

Reciprocation of Greetings, Favors, and Gifts

The trait labeled **reciprocation of greetings, favors, and gifts** affects the following KM factors:

- Organizational buy-in and support of KM;
- Leadership involvement, support, and advocating of KM;
- Rewards system based on employee KM participation and support; and
- Continuous education of employees.

Confucian Dynamism and KM Expectations

Table 6.19 provides a summary of the cultural traits of Confucian Dynamism and relevant KM expectations. The following section provides a summary of the KM expectations that are encouraged by Confucian Dynamism traits.

Table 6.19
 The Implications of Confucian Dynamism on KM
 Expectations for those Variables where Perceptions
 were Significantly Different between U.S. and
 Taiwanese Knowledge Workers

Cultural Traits of Confucian Dynamism (Source: Hofstede 1997)	Significant KM Expectations Driven by the Cultural Trait
Persistence (Perseverance)	A, B, C, D, G, H
Ordering relationships by status and observing this order	E, F, I
Thrift	A, B, C, E, F, G, H, I
Having a sense of shame	A, C
Personal steadiness and stability	A, B, C, D, E, F, G, H, I
Protecting your face [Saving face]	A, B, F, G, I
Respect of tradition	C, G
Reciprocation of greetings, favors, and gifts	B, D, F

Persistence (Perseverance)

The trait labeled **persistence (perseverance)** drives the following KM expectations:

- Formalized knowledge transfer system established (Best practices, lessons learned);
- Better on-the-job training of employees;
- Enhanced enterprise innovation and creativity;
- Enhanced client relations - better client interaction; improved ability to sustain a competitive advantage; and
- Enhance business development and the creation of enterprise opportunities.

Ordering Relationships

The trait labeled **ordering relationships by status and observing this order** drives the following KM expectations:

- Development of an entrepreneurial culture for enterprise growth and success;
- Improved employee retention; and
- Enhanced and streamlined internal administrative processes.

Thrift

The trait labeled **thrift** drives the following KM expectations:

- Formalized knowledge transfer system established (Best practices, lessons learned);
- Better on-the-job training of employees;
- Enhanced enterprise innovation and creativity; improved employee retention;
- Improved ability to sustain a competitive advantage; and
- Enhanced and streamlined internal administrative processes.

Having a Sense of Shame

The trait labeled **having a sense of shame** drives the following KM expectations:

- Formalized knowledge transfer system established (Best practices, lessons learned); and
- Enhanced enterprise innovation and creativity.

Personal Steadiness and Stability

The trait labeled **personal steadiness and stability** drives the following KM expectations:

- Formalized knowledge transfer system established (Best practices, lessons learned);
- Better on-the-job training of employees;
- Enhanced enterprise innovation and creativity;
- Enhanced client relations - better client interaction;
- Development of an entrepreneurial culture for enterprise growth and success; improved employee retention;
- Improved ability to sustain a competitive advantage;
- Enhance business development and the creation of enterprise opportunities; and
- Enhanced and streamlined internal administrative processes.

Protecting and Saving Face

The trait labeled **protecting and saving face** drives the following KM expectations:

- Formalized knowledge transfer system established (Best practices, lessons learned);
- Better on-the-job training of employees;
- Improved employee retention;
- Improved ability to sustain a competitive advantage; and
- Enhanced and streamlined internal administrative processes.

Respect of Tradition

The trait labeled **respect of tradition** drives the following KM expectations:

- Enhanced enterprise innovation and creativity; and
- Improved ability to sustain a competitive advantage.

Reciprocation of Greetings, Favors, and Gifts

The trait labeled **reciprocation of greetings, favors, and gifts** drives the following KM expectations:

- Better on-the-job training of employees;
- Enhanced client relations - better client interaction; and
- Improved employee retention.

Confucian Dynamism and KM Practices

Table 6.20 provides a summary of the cultural traits of Confucian Dynamism and the relevant affected KM practices. The following section provides a summary of the conclusions of the impact of Confucian Dynamism traits on KM practices.

Table 6.20
The Implications of Confucian Dynamism on KM
Practices for those Variables where Perceptions were
Significantly Different between U.S. and Taiwanese
Knowledge Workers

Cultural Traits of Confucian Dynamism (Source: Hofstede 1997)	Significant KM Practices Enabled by the Cultural Trait
Persistence (Perseverance)	A, B, C, D, E, F, G, H, I, J, K
Ordering relationships by status and observing this order	C, E, F, H, J, K
Thrift	D, E, I, J, K
Having a sense of shame	A, D, I
Personal steadiness and stability	A, B, C, D, E, I, J, K
Protecting your face [Saving face]	A, B, D, G, K
Respect of tradition	C, E
Reciprocation of greetings, favors, and gifts	D, E, F, K

Persistence (Perseverance)

The trait labeled **persistence (perseverance)** enables the following KM practices:

- The organizational benefits of a knowledge-centric organization are clearly understood by everyone in our organization;
- KM is a top priority in our organization;
- Our organization has a clear and strong commitment to KM initiatives from senior management;
- Our organization has sufficient financial resources to support KM initiatives;
- Our organizational culture encourages knowledge sharing;
- People in our organization have the time to share information;
- Our organizational strategies, structures, policies, procedures, processes, and reward systems focus on long-term growth;
- Our organization has evolved from a rigid hierarchical structure to a process-oriented structure;

- Our organization has invested in effective KM technologies (i.e., intranet, databases, email, and digital libraries);
- Our organization has the human resources to support our information technology systems, software, and network; and
- People in our organization are often rewarded for continuous learning or knowledge sharing.

Ordering Relationships by Status and Observing this Order

The trait labeled **ordering relationships by status and observing this order** enables the following KM practices:

- Our organization has a clear and strong commitment to KM initiatives from senior management;
- Our organizational culture encourages knowledge sharing;
- People in our organization have the time to share information;
- Our organization has evolved from a rigid hierarchical structure to a process-oriented structure;
- Our organization has invested in effective KM technologies (i.e., intranet, databases, email, and digital libraries); and
- People in our organization are often rewarded for continuous learning or knowledge sharing.

Thrift

The trait labeled **thrift** enables the following KM practices:

- Our organization has sufficient financial resources to support KM initiatives;
- Our organizational culture encourages knowledge sharing;

- Our organization has invested in effective KM technologies (i.e., intranet, databases, email, and digital libraries);
- Our organization has the human resources to support our information technology systems, software, and network; and
- People in our organization are often rewarded for continuous learning or knowledge sharing.

Having a Sense of Shame

The trait labeled **having a sense of shame** enables the following KM practices:

- The organizational benefits of a knowledge-centric organization are clearly understood by everyone in our organization;
- Our organization has sufficient financial resources to support KM initiatives; and
- Our organization has invested in effective KM technologies (i.e., intranet, databases, email, and digital libraries).

Personal Steadiness and Stability

The trait labeled **personal steadiness and stability** enables the following KM practices:

- The organizational benefits of a knowledge-centric organization are clearly understood by everyone in our organization;
- KM is a top priority in our organization;
- Our organization has a clear and strong commitment to KM initiatives from senior management;
- Our organization has sufficient financial resources to support KM initiatives;
- Our organizational culture encourages knowledge sharing;

- Our organization has invested in effective KM technologies (i.e., intranet, databases, email, and digital libraries);
- Our organization has the human resources to support our information technology systems, software, and network; and
- People in our organization are often rewarded for continuous learning or knowledge sharing.

Protecting and Saving Face

The trait labeled **protecting and saving face** enables the following KM practices:

- The organizational benefits of a knowledge-centric organization are clearly understood by everyone in our organization;
- KM is a top priority in our organization;
- Our organization has sufficient financial resources to support KM initiatives;
- Our organizational strategies, structures, policies, procedures, processes, and reward systems focus on long-term growth; and
- People in our organization are often rewarded for continuous learning or knowledge sharing.

Respect Of Tradition

The trait labeled **respect of tradition** enables the following KM practices:

- Our organization has a clear and strong commitment to KM initiatives from senior management; and
- Our organizational culture encourages knowledge sharing.

Reciprocation of Greetings, Favors, and Gifts

The trait labeled **reciprocation of greetings, favors, and gifts** enables the following KM practices:

- Our organization has sufficient financial resources to support knowledge;
- Our organizational culture encourages knowledge sharing;
- People in our organization have the time to share information; and
- People in our organization are often rewarded for continuous learning or knowledge sharing.

Implications for U.S. Knowledge Management Vendors, Consultants, and Educators

KM vendors, consultants, and educators from the U.S. who plan to work in Taiwan need to be aware of the effects of national culture on the following KM practices. These practices measure the state of readiness for KM solutions in Taiwanese organizations. In general, Taiwanese organizations have a higher readiness for KM than U.S. organizations do. This is a factor of the Asian culture. From this research KM practitioners can find encouraging evidence for expansion of their products and services into Taiwan. The KM practices that are different in Taiwan than in the U.S. are listed in descending order in Table 6.21 below.

Table 6.21
Rankings of KM Practices Affected by National
Culture

Rank	KM Practice that is more implemented in Taiwan than in the U.S.
1	Our organization has invested in effective KM technologies (i.e., intranet, databases, email, and digital libraries).
2	Our organization has the human resources to support our information technology systems, software, and network.
3	Our organizational culture encourages knowledge sharing.
4	Our organizational strategies, structures, policies, procedures, processes, and reward systems focus on long-term growth.
5	Our organization has a clear and strong commitment to KM initiatives from senior management.
6	Our organization has sufficient financial resources to support KM initiatives.
7	People in our organization are often rewarded for continuous learning or knowledge sharing.
8	Our organization has evolved from a rigid hierarchical structure to a process-oriented structure.
9	People in our organization have the time to share information.
10	The organizational benefits of a knowledge-centric organization are clearly understood by everyone in our organization.
11	KM is a top priority in our organization.

This section of Chapter 6 provides a summary of implications for U.S. KM vendors, consultants, and educators who are expanding their operations into Taiwan. Implications for each of the KM practices for U.S. managers working in Taiwanese organizations are discussed in the following pages.

Our Organization has Invested in Effective Knowledge Management Technologies

There is an old Chinese saying that good beginnings make good endings. It is important when promoting a KM program to make sure the KM technologies are in place and available for the employees to use as soon as is feasible. Managers in Taiwan should

focus on investing in effective KM technologies to collect, store, analyze, distribute, and share information to network Taiwanese employees together. Even the simplest technology, e-mail, can enhance the flow of knowledge among the workers. Other technologies should include: database systems and information retrieval systems for the knowledge repository, digital library systems, corporate yellow page systems to find who knows what, and web-based intranet and internet KM systems that are available for all employees to use for communication and E-learning. The infrastructure has to be ready and functioning for the users to begin working on it. Hardware and software systems alone cannot make the KM miracle happen, but it is a necessary investment for Taiwanese workers to be productive.

Our Organization has the Human Resources to Support Our Information Technology Systems, Software, and Network

Taiwanese employees are the source of knowledge capital for the business. In recruitment of Taiwanese knowledge workers the person's personality, experience, and knowledge should fit the job, team, project, and the company systems.

Our Organizational Culture Encourages Knowledge Sharing

Taiwanese knowledge workers tend to share ideas, but only if they are encouraged to communicate. Taiwanese managers should focus on building up the practice of knowledge sharing among employees. By promoting knowledge sharing throughout the organization of the purpose, goals, and mission to be achieved, management embraces the employees with an atmosphere of knowledge sharing. Sharing should become a

standard activity, not just a one-time thing or for a short-term project. Once started, sharing in the community will grow and increase productivity of the organization's knowledge workers. Taiwanese management should clearly explain and demonstrate that knowledge sharing will benefit all the employees with improved effectiveness, efficiency, productivity, increased knowledge assets, and profits. Taiwanese, like most Asians, embrace knowledge sharing among their group members if encouraged by management. This philosophy of sharing is part of the Asian culture and mindset.

Our Organizational Strategies, Structures, Policies, Procedures, Processes, and Reward Systems are Focused on Long-Term Growth

Managers should communicate an emphasis on long-term growth focused on learning strategies. Though the learning strategy may seem to be only a small part of the KM system, it is a critical component of the system. All the parts in the system should be balanced and align with the business's long-term growth. Taiwanese knowledge workers have a long-term philosophy toward work and life. It is part of their culture.

Our Organization has a Clear And Strong Commitment to Knowledge Management Initiatives from Senior Management

Management in Taiwan, whether at the top or the bottom, should emphasize the importance of KM and should become committed to it. Convincing leaders to promote KM initiatives will help them lead the whole company toward successful KM.

Our Organization has Sufficient Financial Resources to Support Knowledge Management Initiatives

A sufficient portion of the organization's budget should be allocated to supporting KM initiatives. Taiwanese knowledge workers believe their organizations have sufficient funds to support KM. The funds should be used to set up the hardware and software infrastructures, reward systems, maintenance, and promotion of the KM programs.

People in Our Organization are Often Rewarded for Continuous Learning or Knowledge Sharing

Taiwanese managers should customize their reward systems to motivate the employees through learning and knowledge sharing. Non-financial rewards would work well in Taiwanese organizations. Examples of these rewards include: promotion and recognition that add to Taiwanese worker self-esteem. The reward system should be realistic with benefits tied to achievable goals. This would appeal to the broad base of employees. These systems would gain the attention of Taiwanese workers and encourage them to collaborate, hand in hand, shoulder to shoulder. Non-monetary rewards for learning and knowledge sharing can be more successful in Taiwan than in U.S. organizations. The sense of team and self-satisfaction is part of the motivation in Taiwanese culture.

Our Organization has Evolved from a Rigid Hierarchical Structure to a Process-Oriented Structure

By focusing on the workflow or processes, Taiwanese managers can reinvent the ways of doing things to increase output for the effort required. Taiwanese workers have stated that their organizations are moving toward a process-oriented structure. Organizations in

Taiwan are responding faster to changes in effective organizational structures to support KM than U.S. firms. International managers should be aware of this trend and support these changes in Taiwanese firms.

People in Our Organization have the Time to Share Information

Traditionally, coffee breaks, cigarette breaks, and water fountain chats were the main source of tacit knowledge exchange in Taiwan as well as in most cultures. Managers should provide time for Taiwanese workers to share as part of their job. They should formalize a time to share (such as story telling) so they do not worry about being reprimanded by supervisors. Sharing should be part of the job. Taiwanese workers would respond positively to this policy that should improve productivity as well.

The Organizational Benefits of a Knowledge-centric Organization are Clearly Understood by Everyone in Our Organization

Managers working in Taiwan should deliver an internal communications campaign to educate workers about how KM is beneficial to both them and the organization. They can promote the guidelines of the knowledge-centered organization using media like posters, brochures, CDs, and multimedia programs.

KM is a Top Priority in Our Organization

The trait **KM is a top priority in our organization** shows that KM is prioritized in Taiwanese organizations. This is a strong enabler. It should be seen as a high priority for

all employees to pursue for the benefit of the group. The collectivist mindset of Taiwanese workers provides strong cultural support to overcome the “what’s-in-it-for-me” barrier to KM found in many U.S. organizations.

Summary of Implications

The main theme of KM practices is learning and the need to keep developing the workforce manpower and brainpower from the top of the company to the bottom. Therefore, managers who want to do business in Taiwan need to start education programs for employees to increase their knowledge and skills. Top management should show their enthusiasm by developing various kinds of education programs depending on the needs of different departments. They should choose a KM media that would be most effective. In Taiwan, when the leaders lead, the followers will follow. The learning process is developed by input from the employees and the business’ education programs. By focusing the education programs on developing a competitive advantage around the core competencies of the business, management can form an environment that will support growth and success.

The KM technology infrastructure is the backbone of any KM program. It must be ready and available for everyone to use at the right time in the right place, and it must provide direction towards the right answer. Not only does it speed up the process of finding solutions, but it also enables the workers to digest and integrate what is inside the knowledge base of the organization. Key KM technologies include the database for the repository of essential tacit and explicit knowledge, search engines and data mining tools.

Sharing knowledge and exchange of information is part of Taiwanese culture and is a strong advantage over U.S. organizations.

Upon this cultural foundation, a knowledge transfer system can be established easily.

With a normally accepted KM system, the implementation of a KM program can improve internal administrative processes, enhance innovation, and enable creativity in Taiwanese organizations. This cultural phenomenon provides strong encouragement for KM technology vendors who may find a receptive client who understands the value of sharing knowledge. It should be easier to sell these KM technologies in Taiwan than in the U.S. because of the differences in national culture. In addition, consultants and educators who want to provide services to Taiwanese organizations may also find less resistance from Taiwanese decision-makers than from those in the United States.

Additional evidence and case studies for these recommendations of international firms and entrepreneurs who are doing business in Taiwan should be investigated to enhance the findings and implications of this study. In conclusion, this work needs to be conducted to fully understand the impact of national culture on KM in many different markets and economies around the world.

Conclusion

KM variables that differ indicate the need for different approaches in the U.S. and Taiwan; KM variables that are not different imply that similar approaches should produce similar results in the U.S and Taiwan.

Knowledge media and systems providers should be aware that the survey responses suggest that Taiwanese knowledge workers and their organizations may have a cultural advantage over U.S. knowledge workers for adopting new technology quickly. If sharing knowledge is a key to competitiveness, Taiwanese collectivism and long/short-term cultural norms give Taiwanese organizations a natural advantage.

Differences in cultures present difficulties and barriers to competing businesses from other countries. One of the purposes for this research is to encourage cross-cultural thinking. One cannot understand another culture until starting a process of trying to understand.

Knowing the customary beliefs, expectations, and practices of peoples of different cultures yields insight into how they think and act. Anticipating how people of one culture might perceive something or respond differently than people of another is important for business dealings from one country to others (as well as for dealings within their own country).

People are cultivated by the culture that embraces them throughout their life. They usually think and do things accordingly. All life is problem solving, and people need to find solutions.

Confucius said, "learning without reflection is a waste and reflection without learning is a danger." (Moral self-cultivation and learning is the core program of Confucius (Philip J. Ivanhoe, 1993)). Only through learning can a person become intellectual enough to solve problems and improve performance. "Thinking outside of the box" is a modern phrase

used to describe people's innovation of alternate ways to achieving their goals. The 'box' represents the standard way of thinking about a problem. Innovative and creative thinking are ways that stimulate people to entertain different viewpoints while trying to find better ways to solve problems.

To know is one thing and to do is another. To know what people of other cultures think (beliefs and expectations) and how they do things (practices) requires one to go through a learning process.

Reaching into other boxes may not be easy; but to survive and remain competitive in the 'global village' of the world business community, one needs to become equipped with knowledge of the cultural differences in doing business and how to choose the best actions to take. ('Best' doesn't necessarily mean to maximize short-term monetary profit; it might instead mean to improve customer relations.) Becoming equipped is a learning process both in theory and practice—KM is the group of processes to manage both the knowledge one knows and the knowledge one does not know (yet), but prepares to know.

"Before people and companies can improve, they first must learn [how to improve]."
(David A. Garvin, Harvard Business Review on Knowledge Management by Peter F. Drucker, et al, 1998). People can learn a lot by trying to do something even if they fail to obtain the results they anticipate. A person, who avoids such a failure, as by doing nothing, also avoids the opportunity to learn something new. An old proverb summarizes this as "failure teaches success."

Extending information technology across traditional disciplines including teams, departments, companies, businesses, industries, and borders can enhance current and future business practices. However, the information technology alone cannot make the change happen. The individual, the knowledge worker that handles the information or technology, is key to making change happen—new technology simply provides a way to speed up what the workers have done before.

As mentioned in Chapter 1, there are two kinds of knowledge that an individual holds: explicit and tacit. Not only does one need to be able to access explicit knowledge easily, one also needs to know the tacit knowledge that cannot be easily accessed. Indeed, like the lyrics of Leo Sayer's song "I love you more than I can say", everyone has more tacit knowledge than can be said. One needs to make this knowledge explicit and easily accessible.

Therefore, to know the beliefs, expectations, and practices of a different culture requires 'digging' into the knowledge and brainpower of an unknown mind. Knowing the differences between cultures is helpful for developing good and sound KM strategies for more effective action for business and success. Foresight and better KM results from finding the implications and insights and by making that knowledge available to share with anyone who might need it and could make good use of it.

Suggestions for Future Research

In addition to integration with the field of international strategic management, the following Table 6.22 provides a summary of suggestions for future research.

Table 6.22
Suggestions for Future Research

Mining of Existing Data	<p>General linear models of all KMF Variables by Country by Size by type and by focus General linear models of all KME Variables by Country by Size by type and by focus General linear models of all KMP Variables by Country by Size by type and by focus</p>
Replication	<p>Larger Sample Focus on Government Organizations Focus on Product Organizations Focus on MNCs Focus on Entrepreneurs Different Countries from Hofstede Study</p>
Extension	<p>Impact of national culture on KM technology adoption</p>
Add to Theory Development	<p>Adapt to include Trompenaars' research Include international expansion research (Davidson, et al) Add any new relevant cross-national research</p>

Chapter Summary

This final chapter provides a brief review of the purpose of the study, restatement of the problem, knowledge management trends in Asia, reflections on the Methodology of the study, restatement of the research question and hypotheses, a summary of the results, and conclusions. In addition, relevant cultural dimensions analysis, implications for practice, and suggestions for future research are discussed. Following this chapter is a reference list and appendices, which contain additional tables and charts of the study results.

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Appendices

Appendix 1 Barcharts of All KM Variables by Country Means

Chart A1.1 Mean of Improvements in IT to Support Knowledge Management

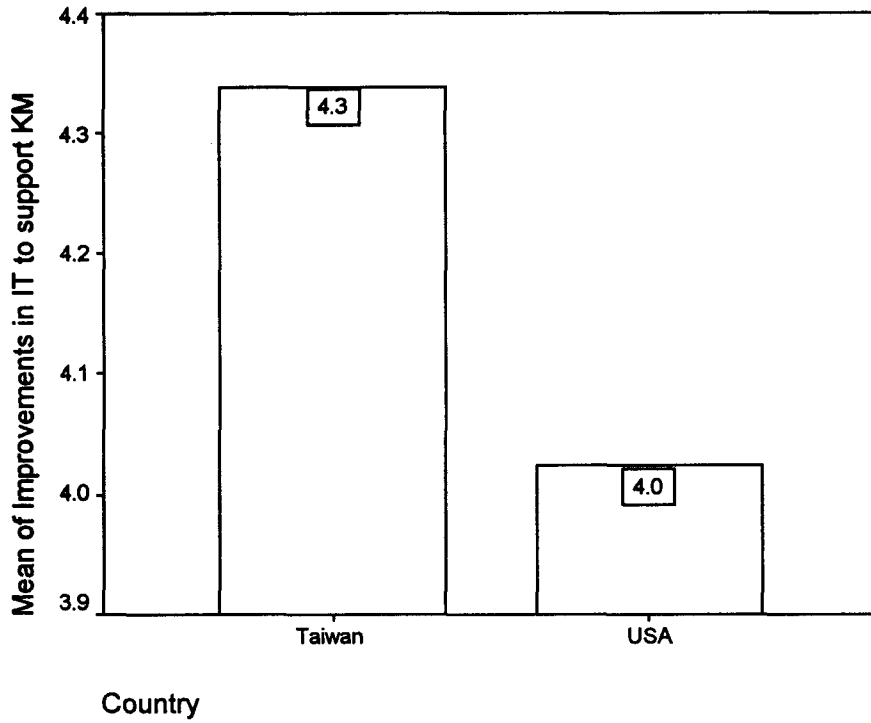


Chart A1.2 Mean of Organizational Support of Knowledge Management

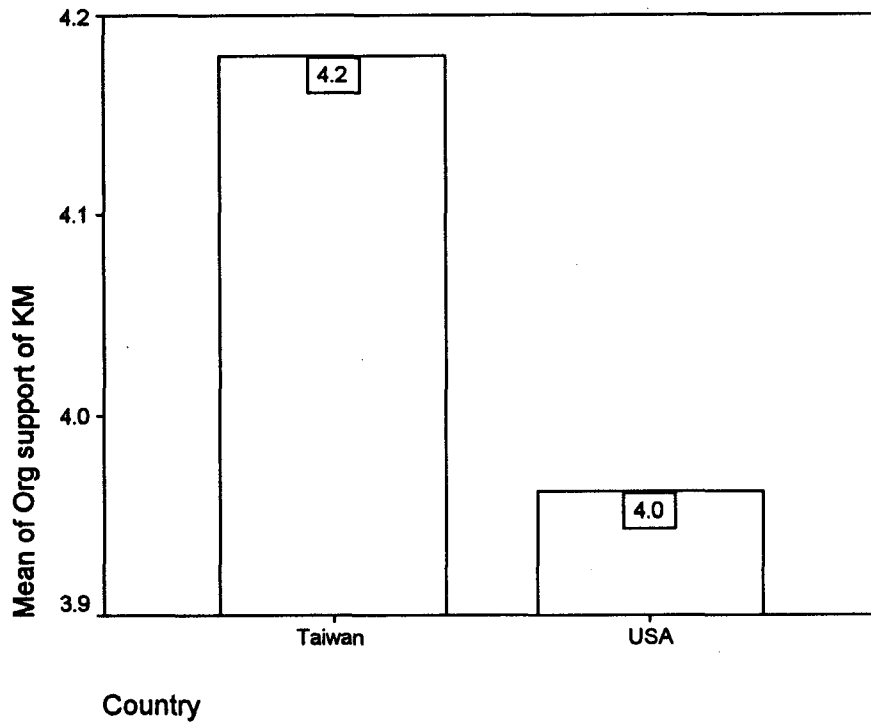


Chart A1.3 Mean of Leadership Support

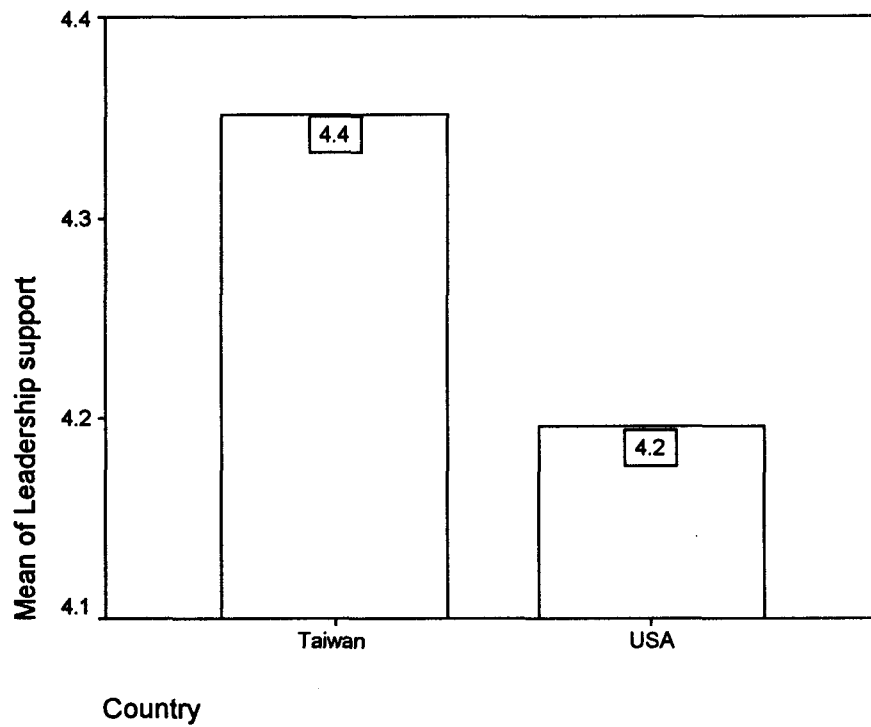


Chart A1.4 Mean of Reward Systems Based on Support

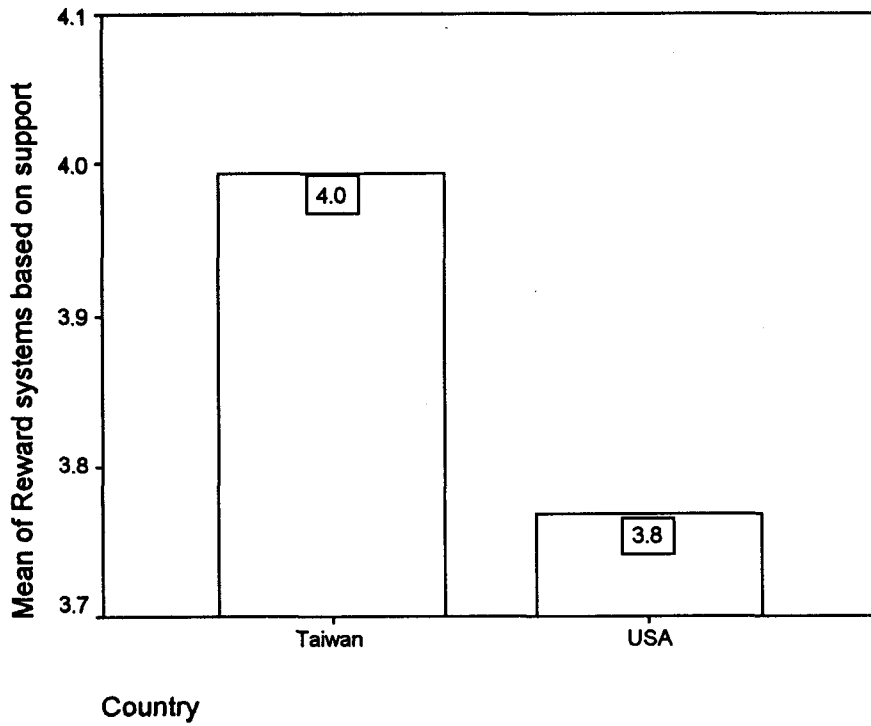


Chart A1.5 Mean of Openness and Thinking Outside the Box

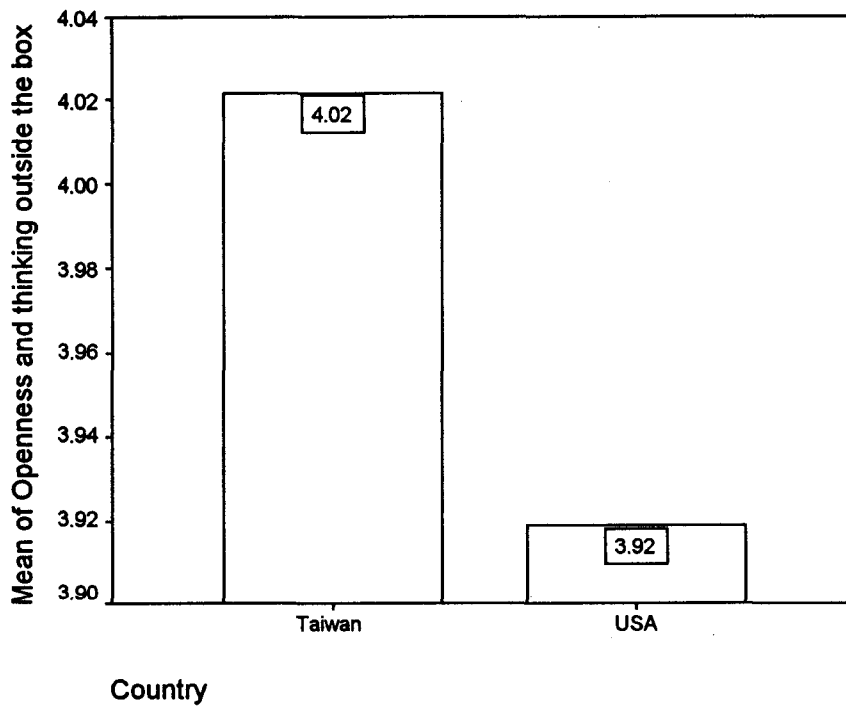


Chart A1.6 Mean of Continuous Education of Employees

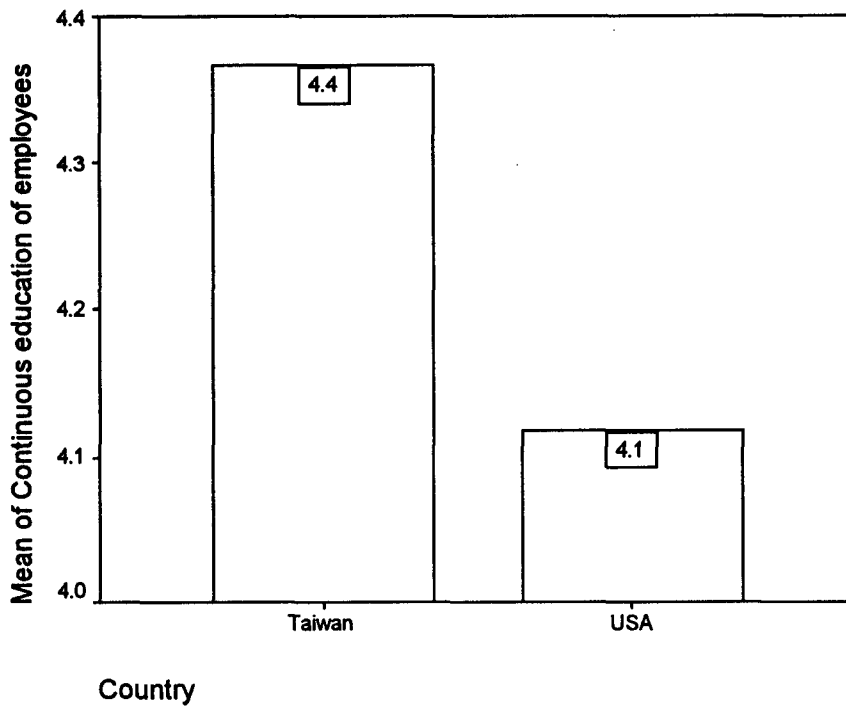


Chart A1.7 Mean of KM Advocates and Champions within the Enterprise

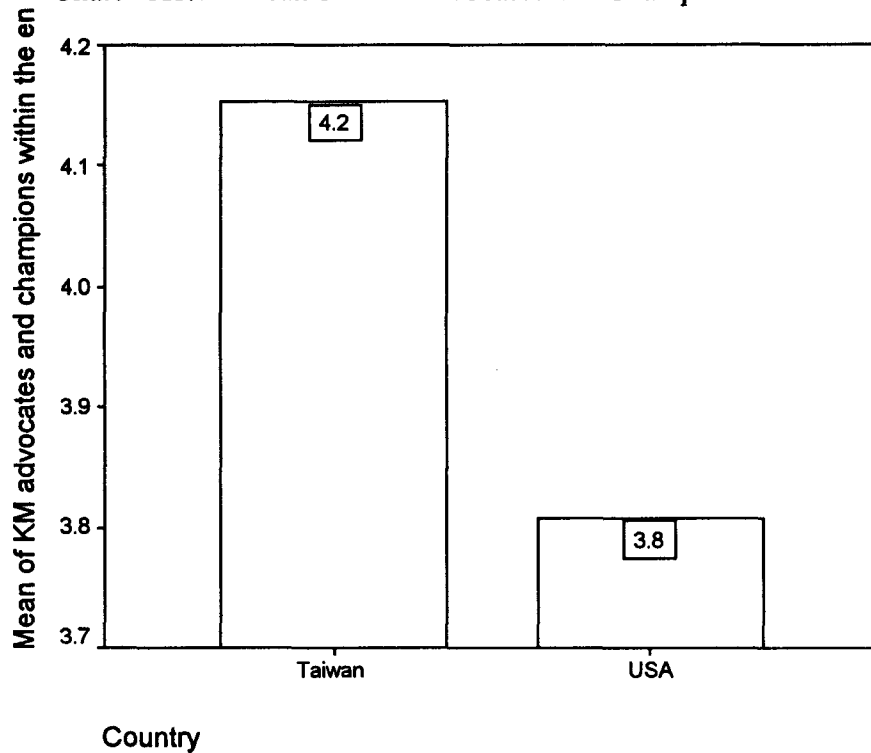


Chart A1.8 Mean of Identify Core Competencies and Necessary Knowledge

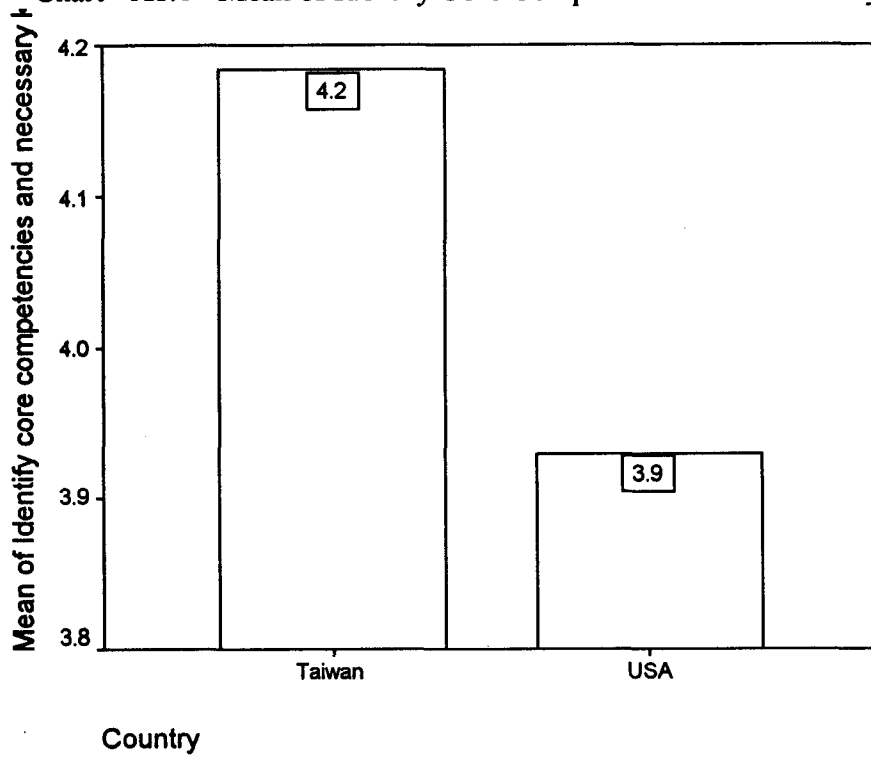


Chart A1.9 Mean of Gather and Formalize Existing Internal Knowledge

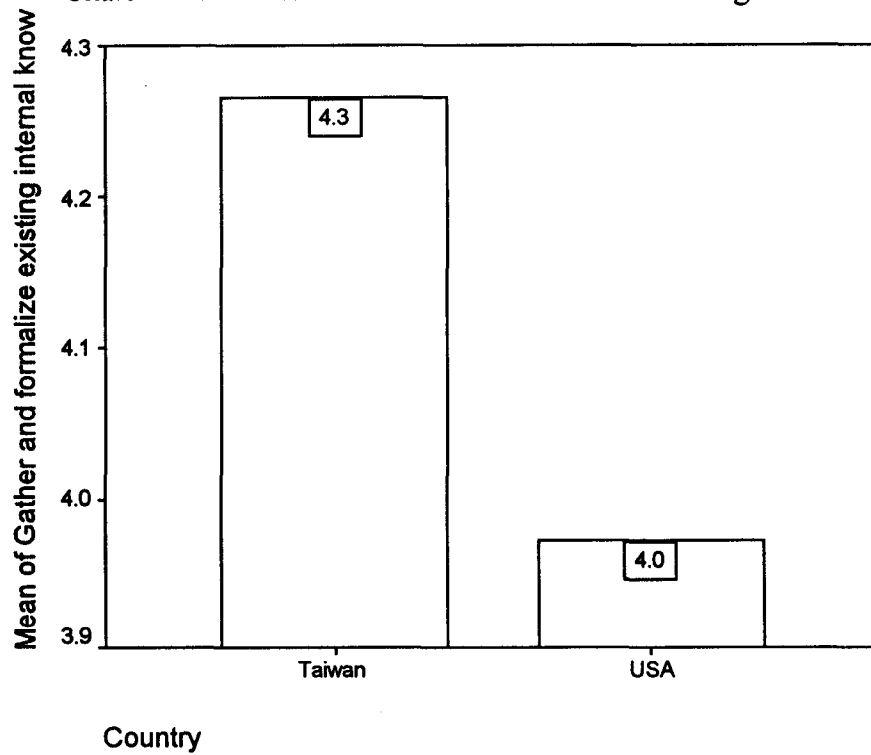


Chart A1.10 Mean of Gather and Formalize Existing External Knowledge

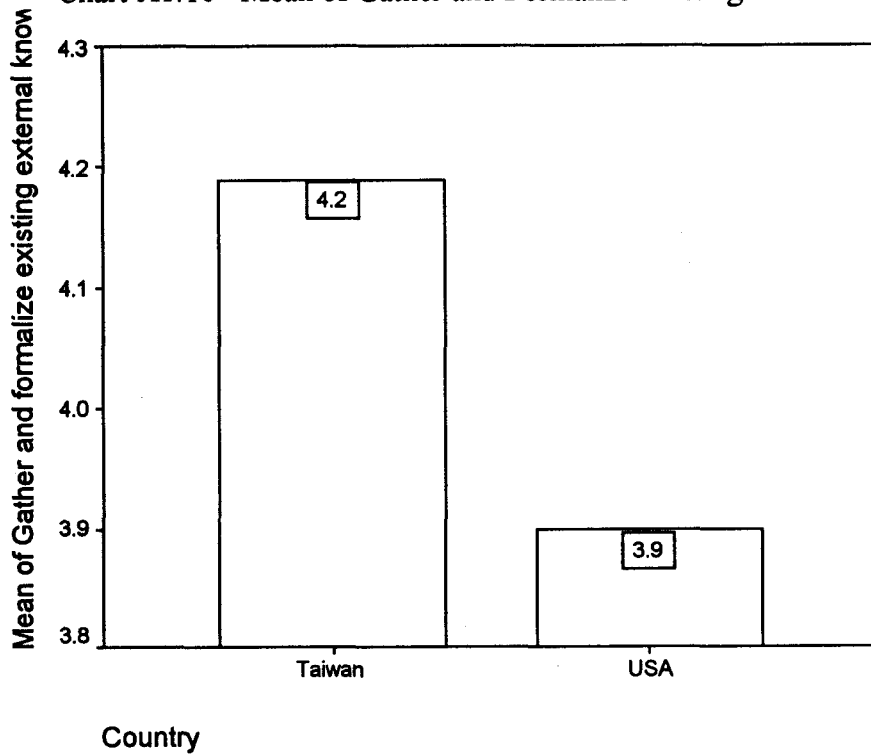


Chart A1.11 Mean of Develop Repository and Database

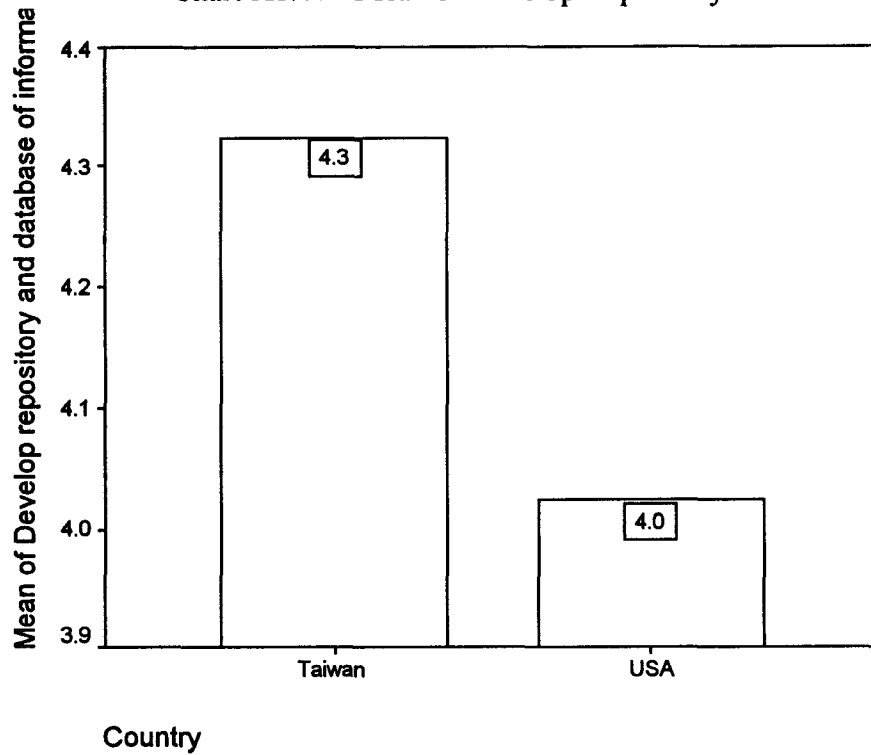


Chart A1.12 Mean of Allocate Resources to Manage Enterprise Knowledge

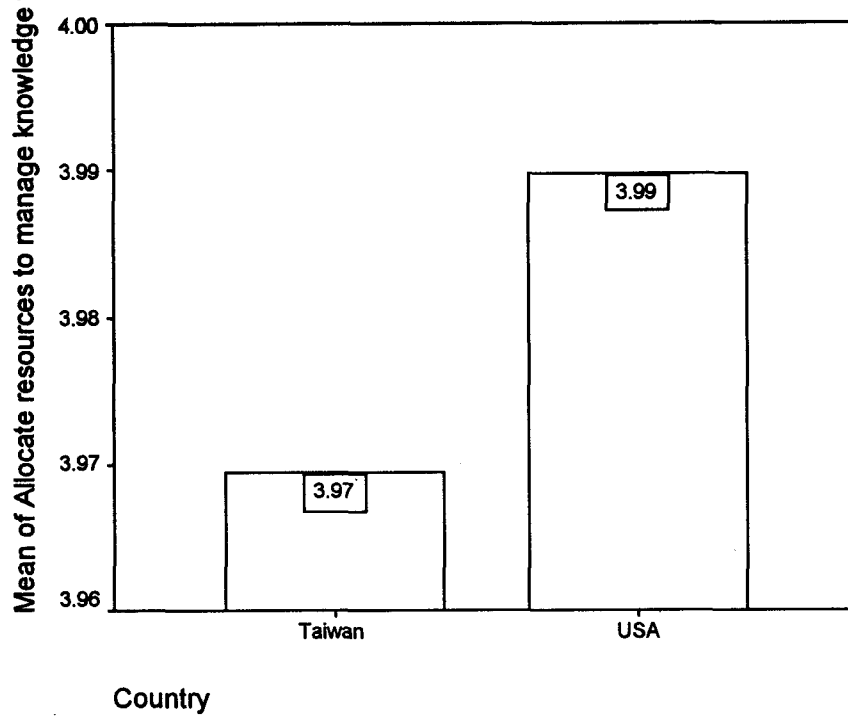


Chart A1.13 Mean of Effective and Efficient Ways of Distributing Knowledge

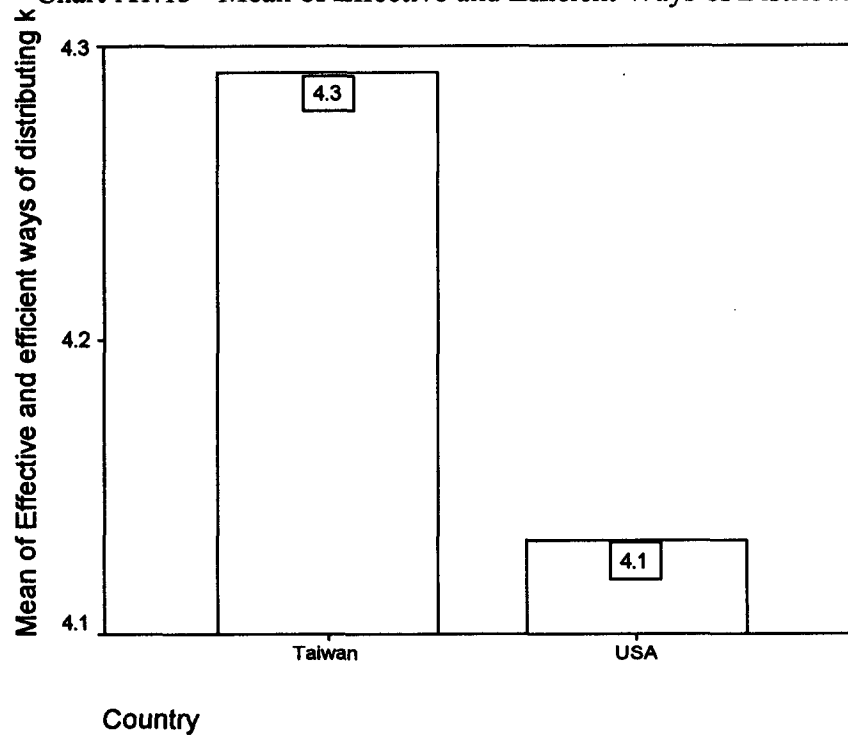


Chart A1.14 Mean of Develop and Promote Sharing and Collaboration

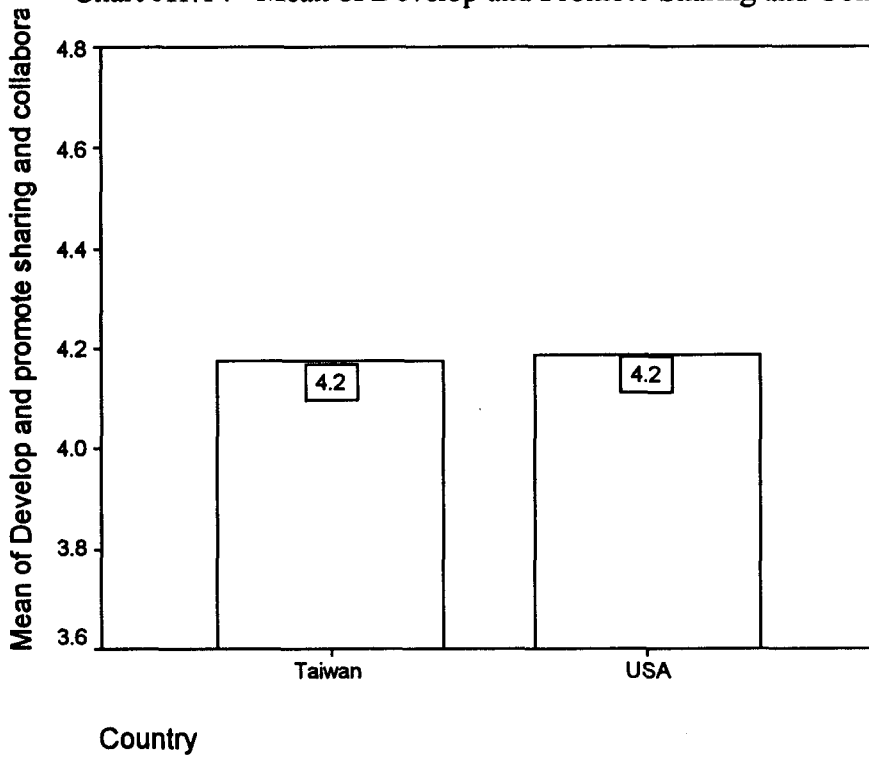


Chart A1.15 Mean of Stimulate and Motivate Employees

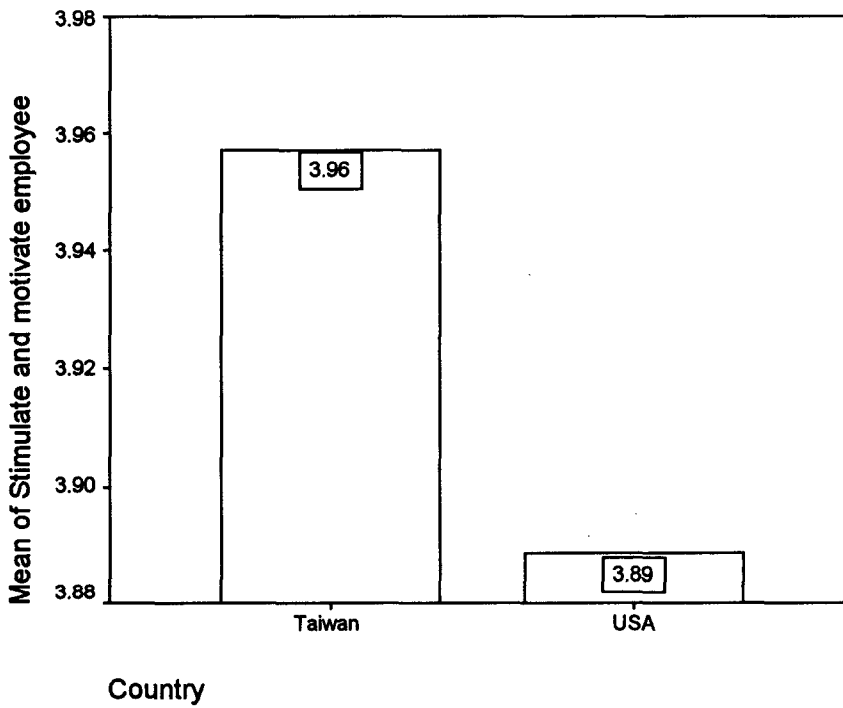


Chart A1.16 Mean of Establish Formal Knowledge Transfer System

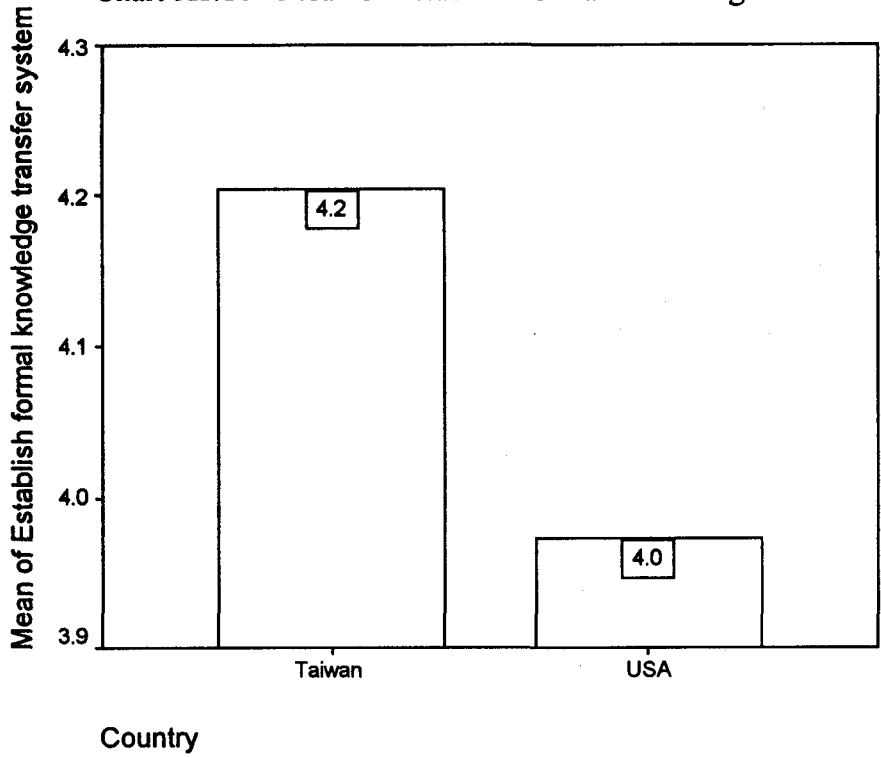


Chart A1.17 Mean of Better On-the-Job Training

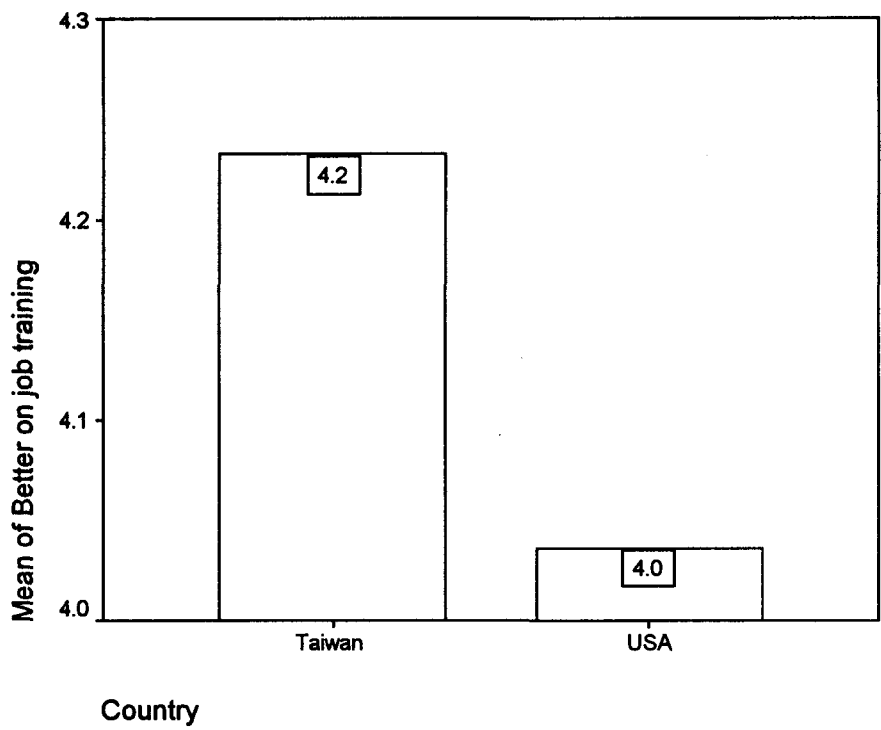


Chart A1.18 Mean of Enhanced Innovation and Creativity

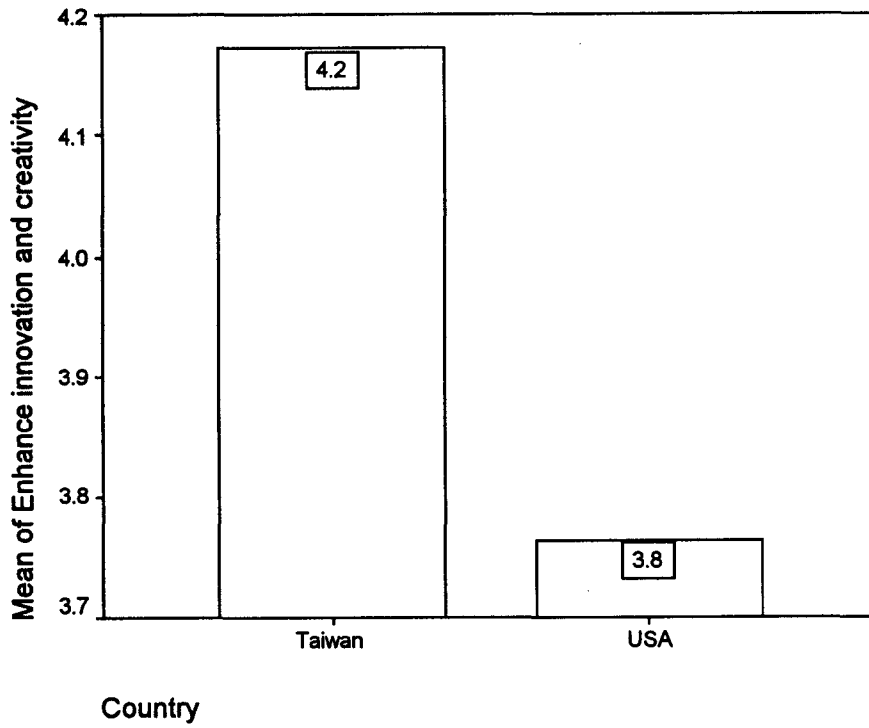


Chart A1.19 Mean of Improved Overall Performance

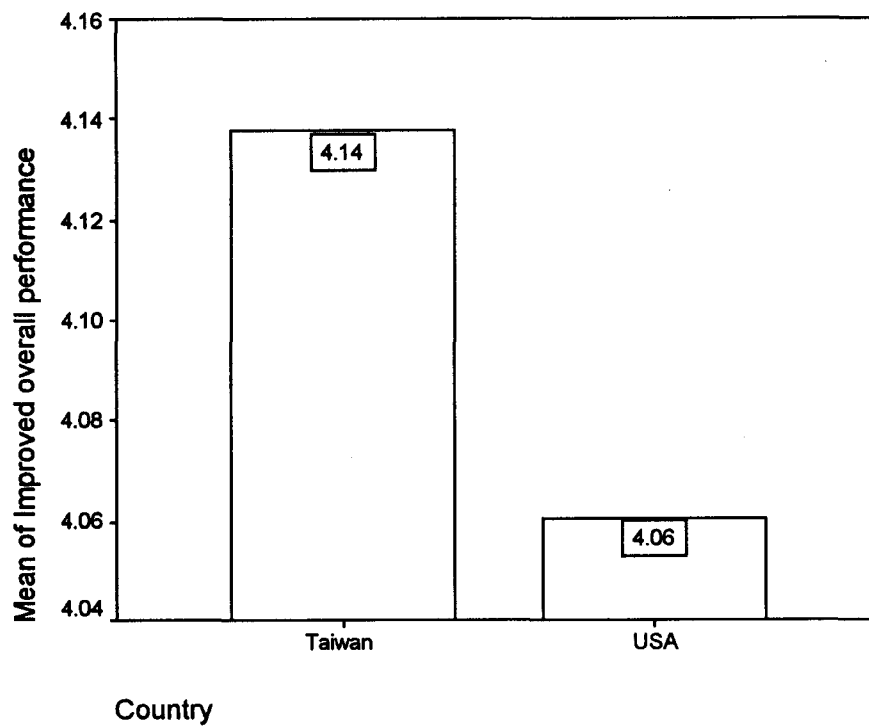


Chart A1.20 Mean of Better Client Relations

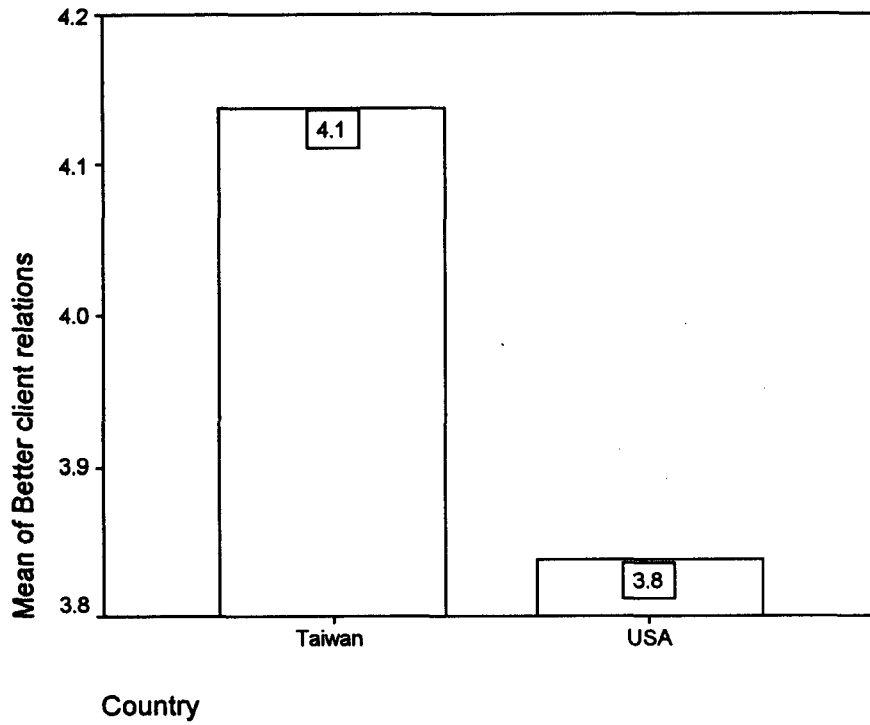


Chart A1.21 Mean of Develop Culture for Growth and Success

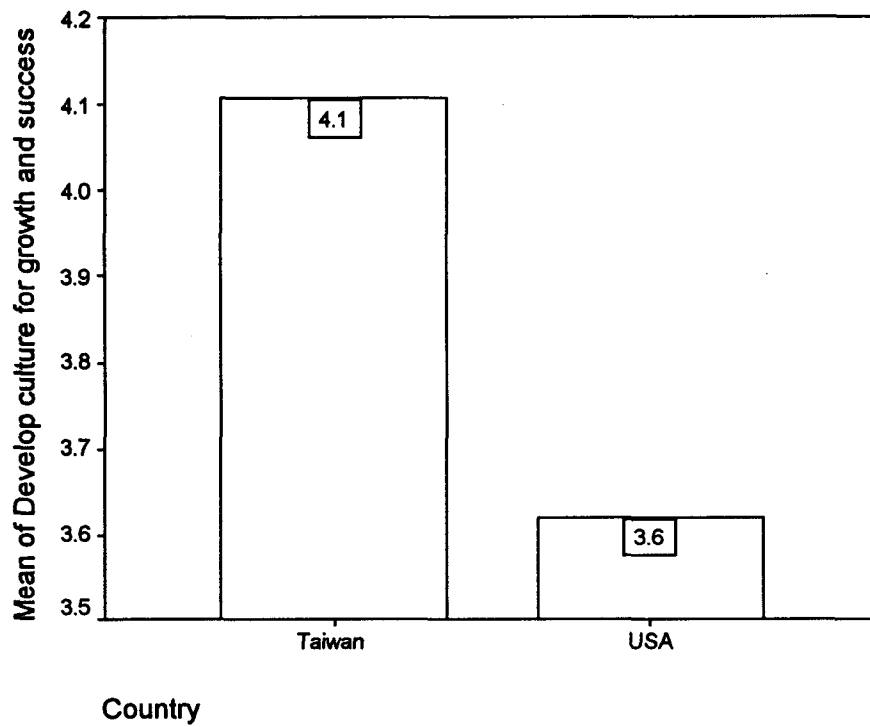


Chart A1.22 Mean of Improved Employee Retention

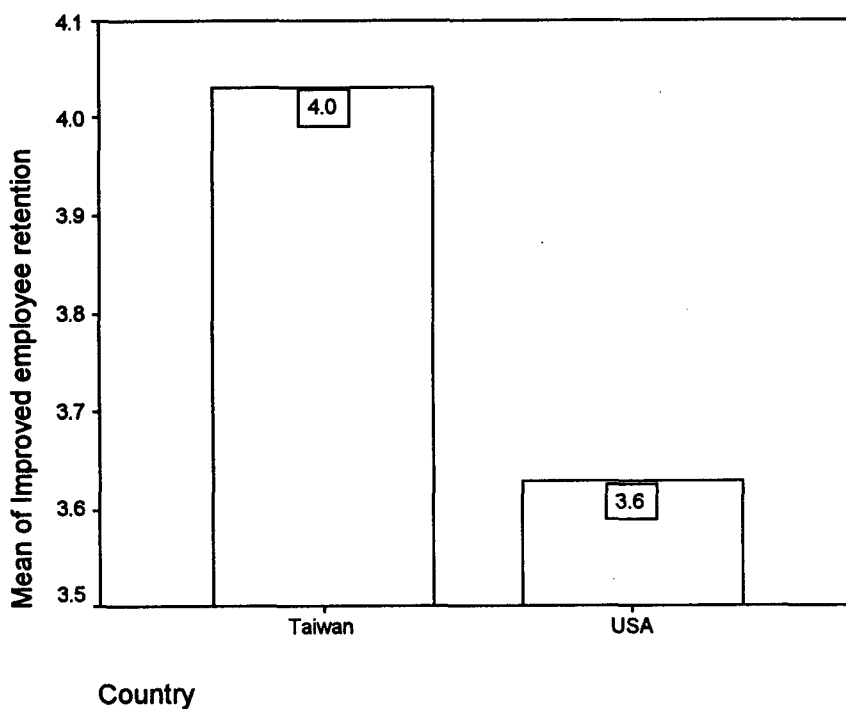


Chart A1.23 Mean of Improved Ability to Sustain a Competitive Advantage

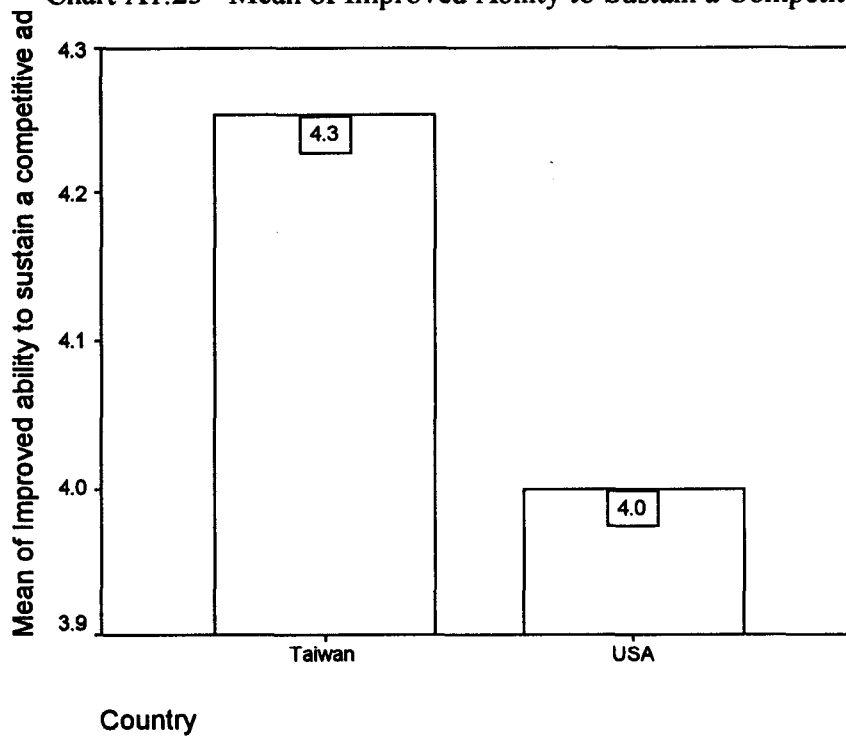


Chart A1.24 Mean of Enhanced Knowledge Transfer from One to Another

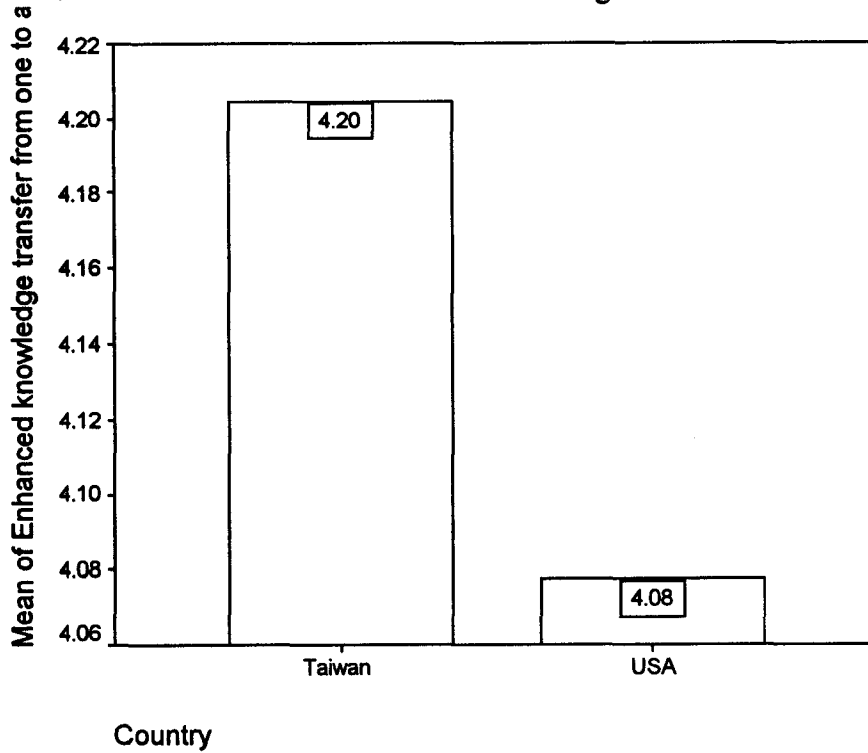


Chart A1.25 Mean of Means to Identify Best Practice

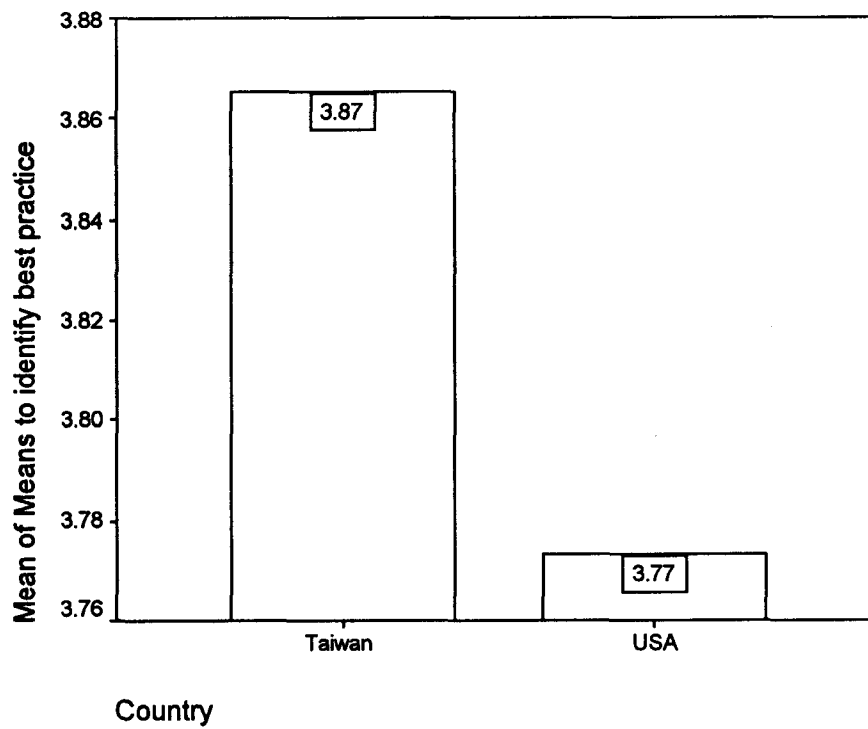


Chart A1.26 Mean of Better Problem Solving

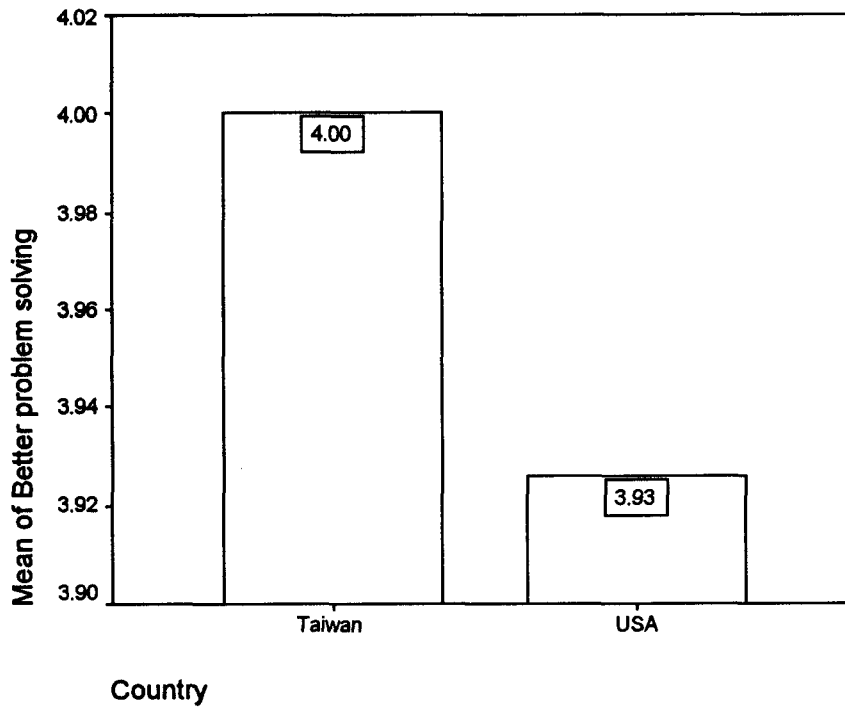


Chart A1.27 Mean of Enhance Development of Business Strategies

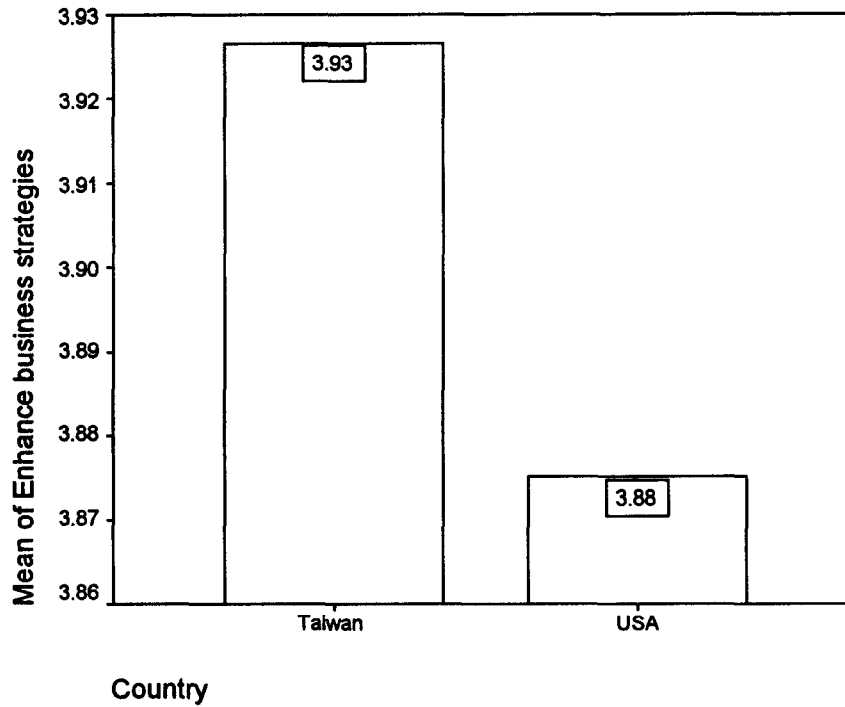


Chart A1.28 Mean of Enhance Development and Creation of Enterprise Opportunities

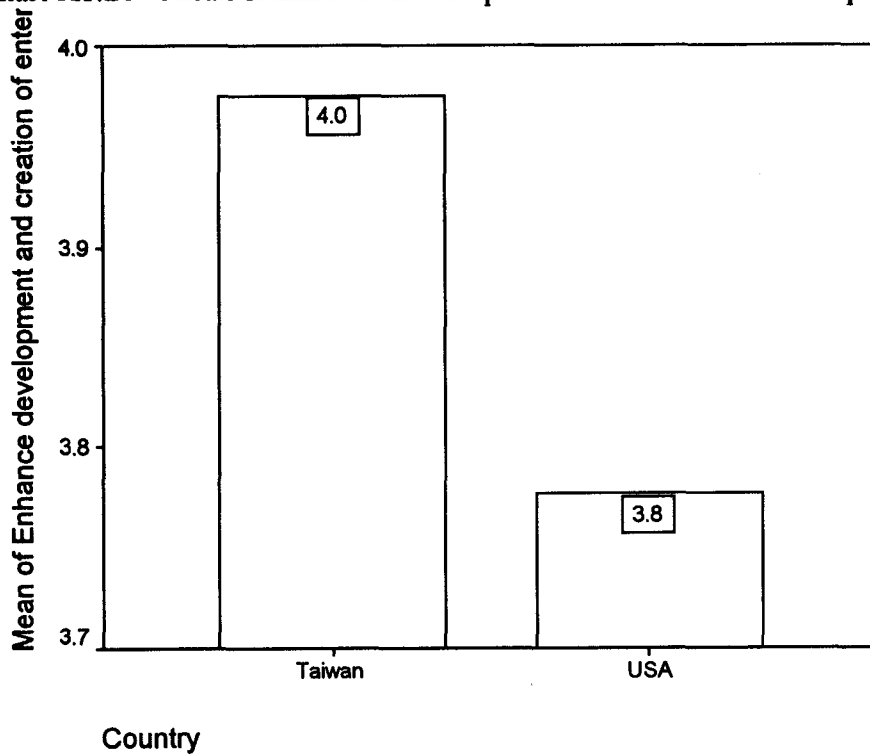


Chart A1.29 Mean of Enhanced and Streamlined Internal Administrative Processes

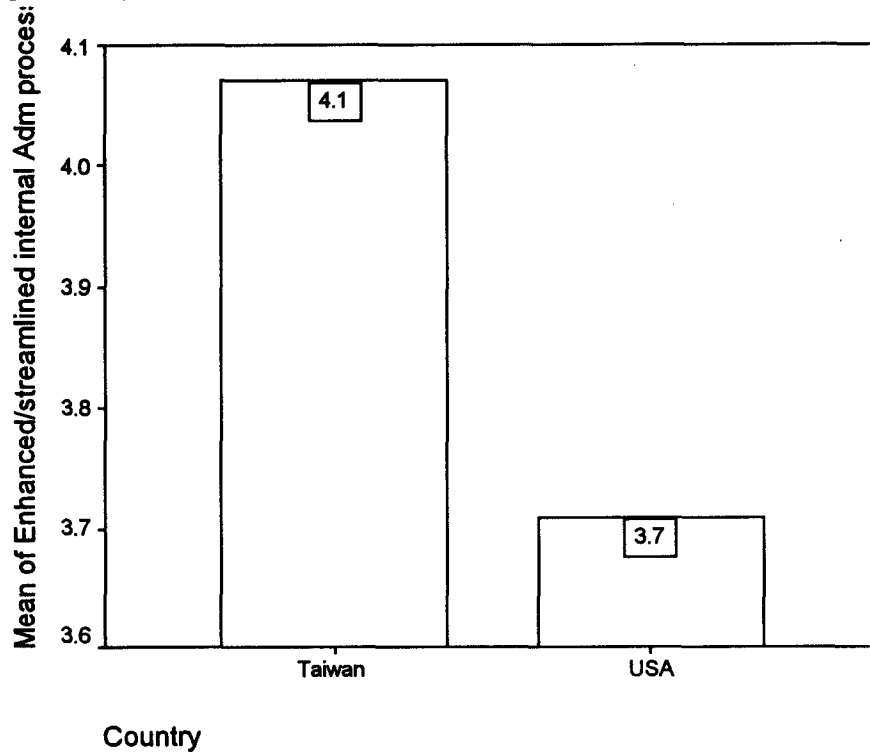


Chart A1.30 Mean of Everyone Knows the Benefits of Knowledge Management

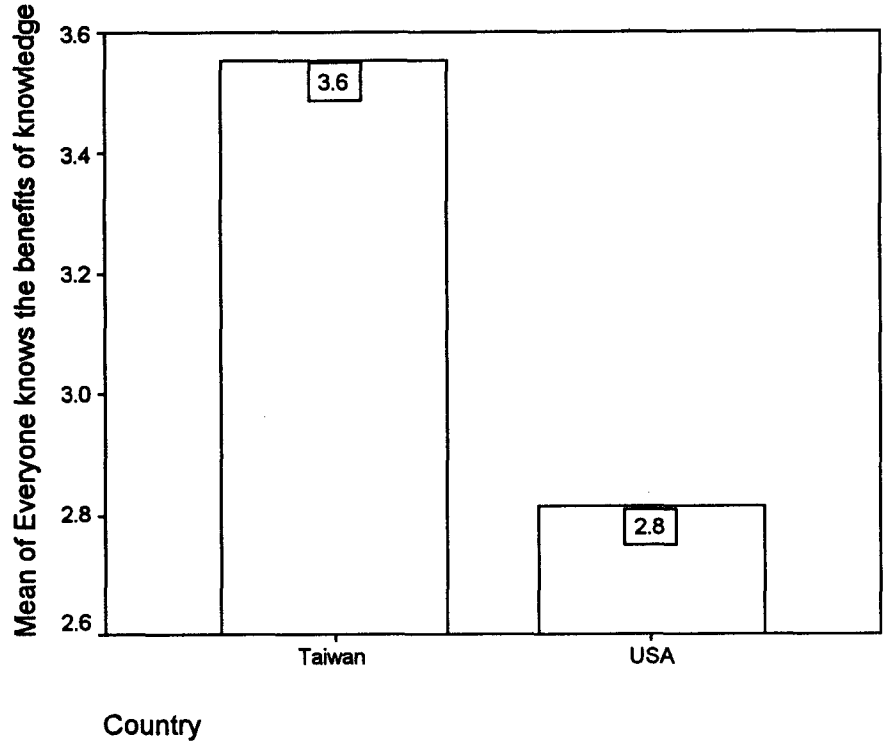


Chart A1.31 Mean of Knowledge Management is Top Priority in Our Organization

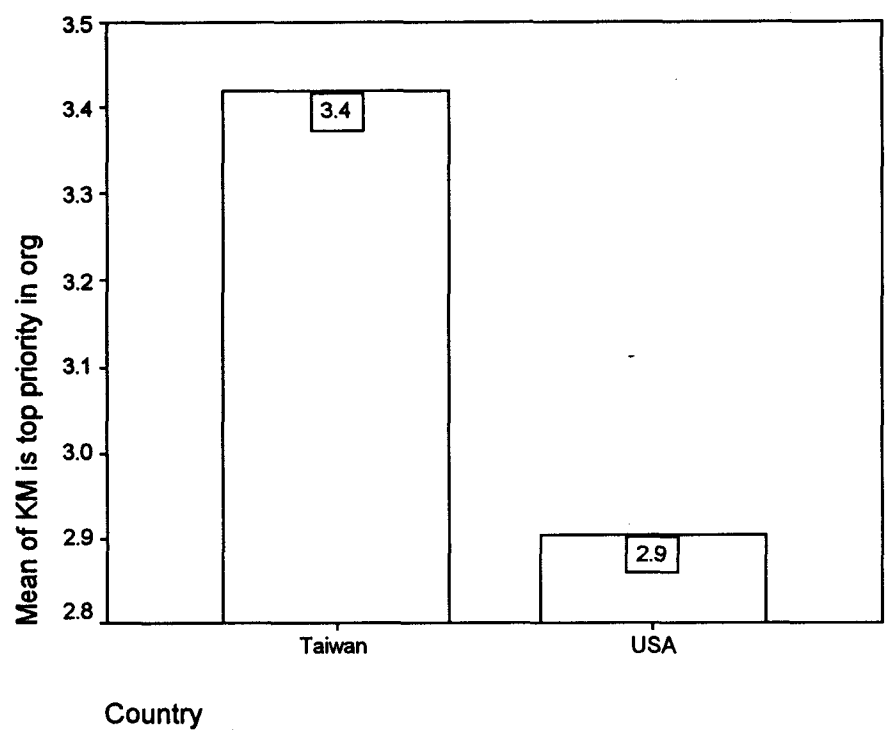


Chart A1.32 Mean of Senior Management has a Strong Commitment

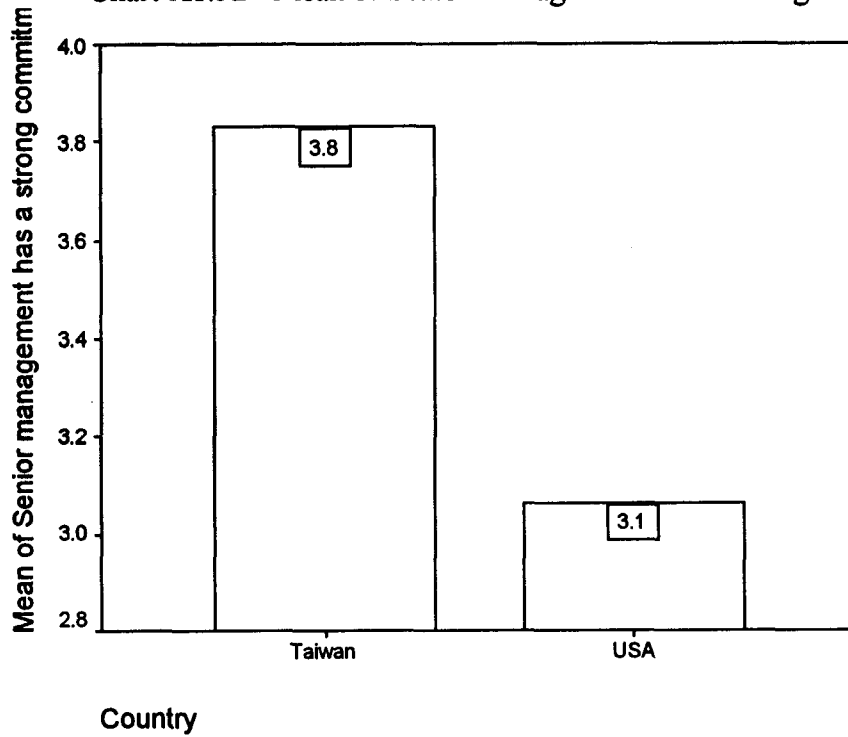


Chart A1.33 Mean of Organization has Sufficient Financial Resources to Support

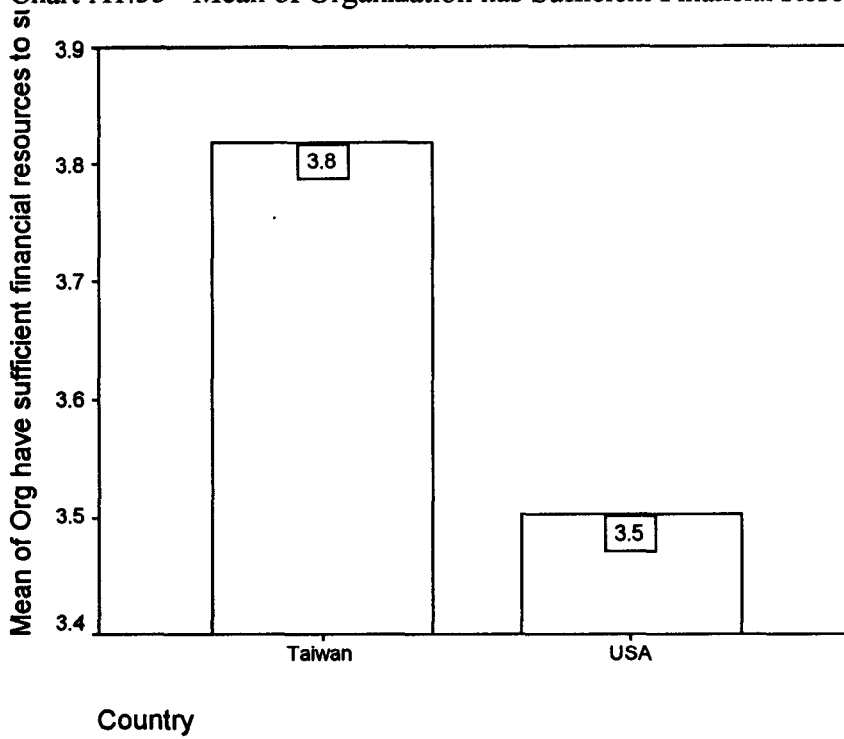


Chart A1.34 Mean of Organizational Culture Encourages Knowledge Sharing

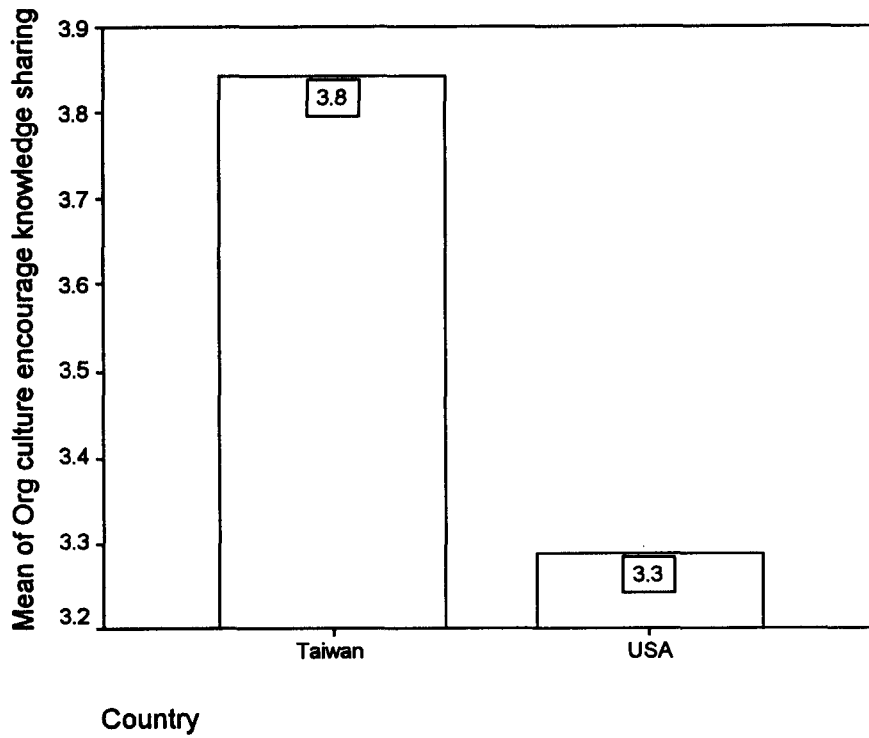


Chart A1.35 Mean of People have Time to Share Information

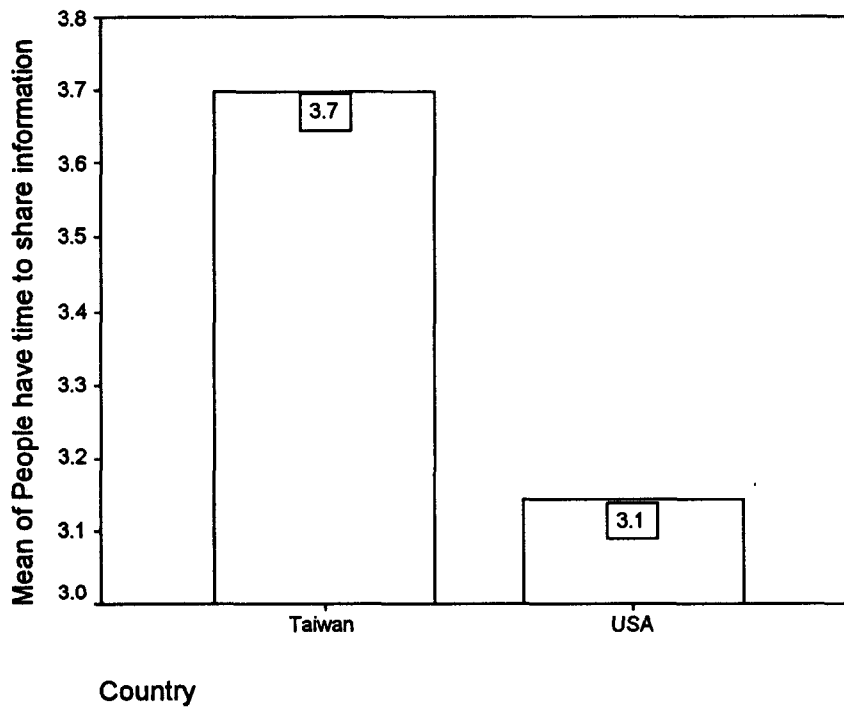


Chart A1.36 Mean of Teamwork is Critical to Culture, Structure, and Processes

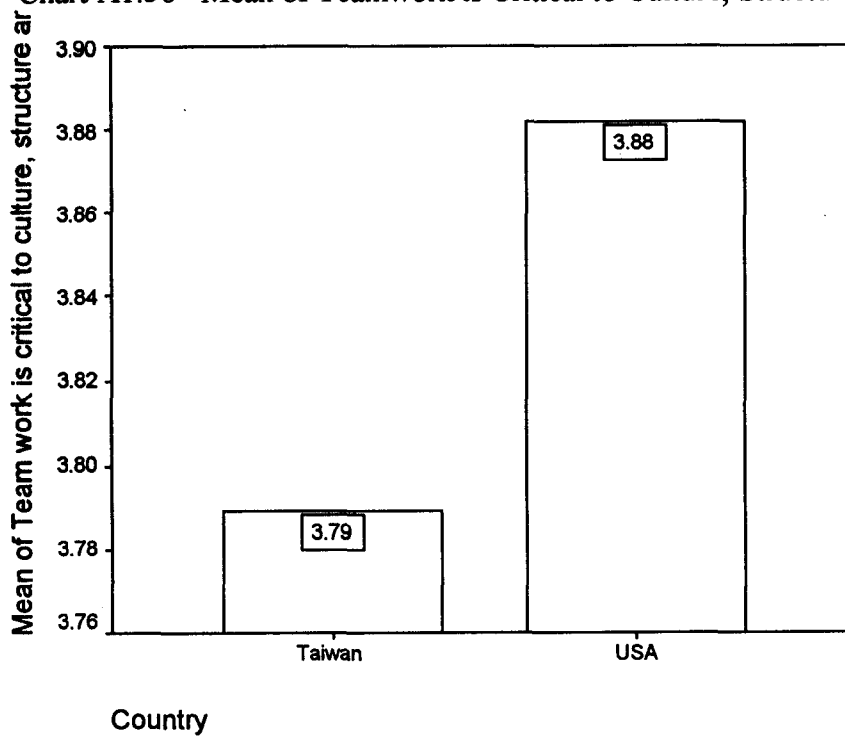


Chart A1.37 Mean of Organization Focused on Long-Term Growth

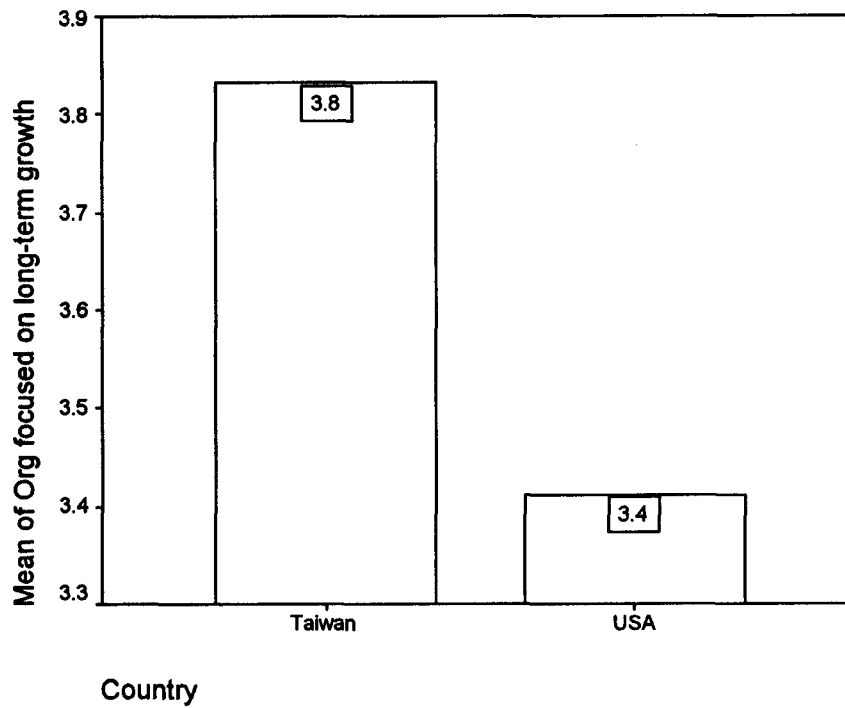


Chart A1.38 Mean of Organization has Evolved to a Process-Oriented Structure

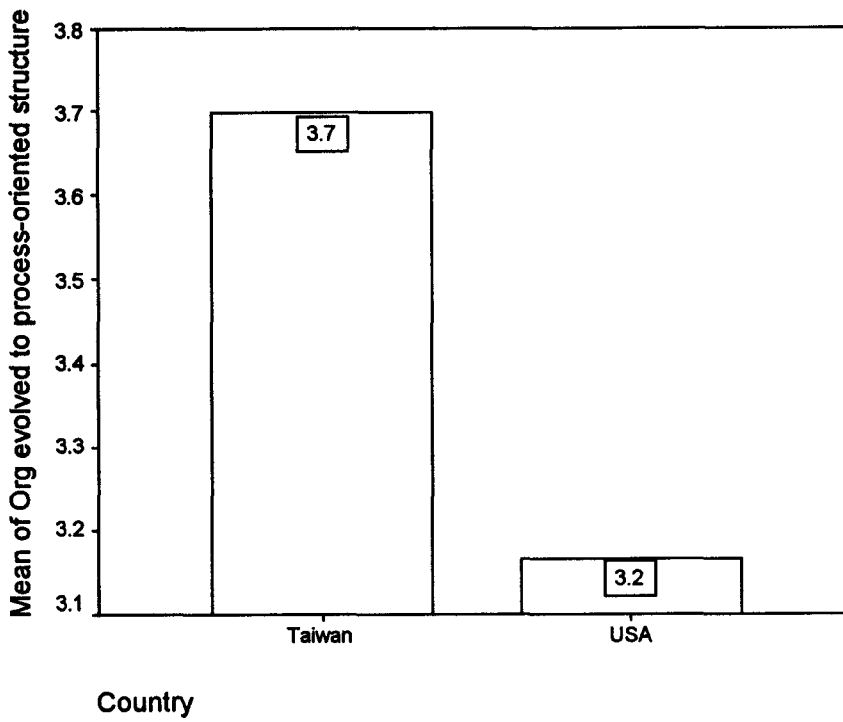


Chart A1.39 Mean of Organization has Invested in KM Technologies

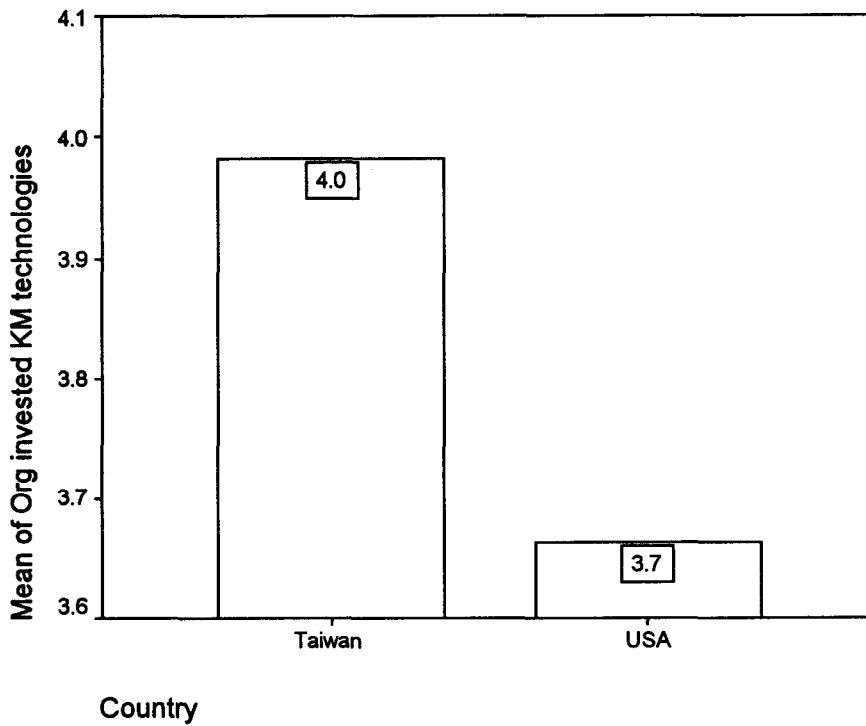


Chart A1.40 Mean of Organization has Human Resources to Support IT System

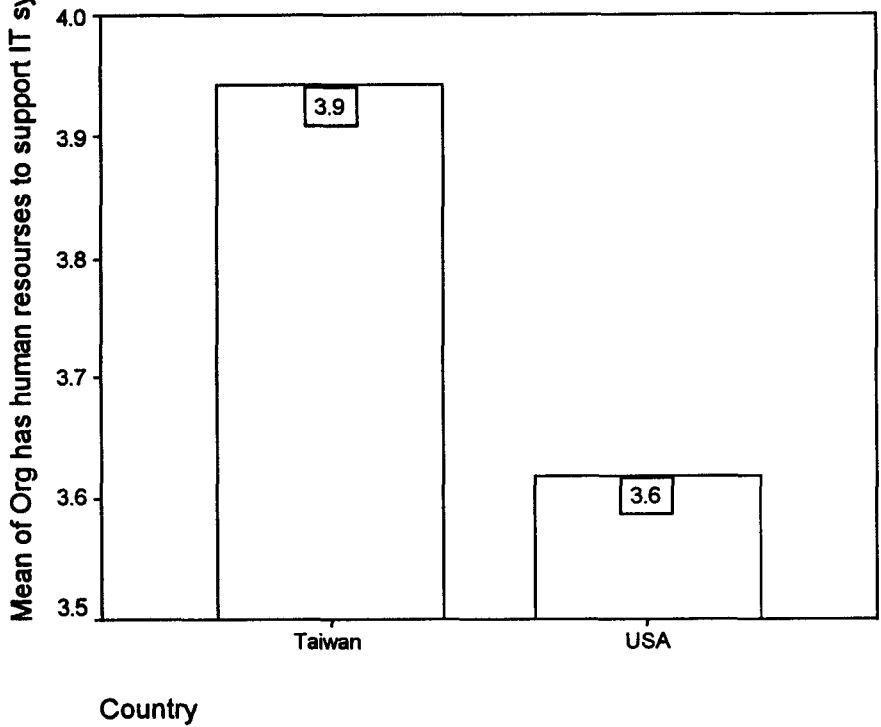
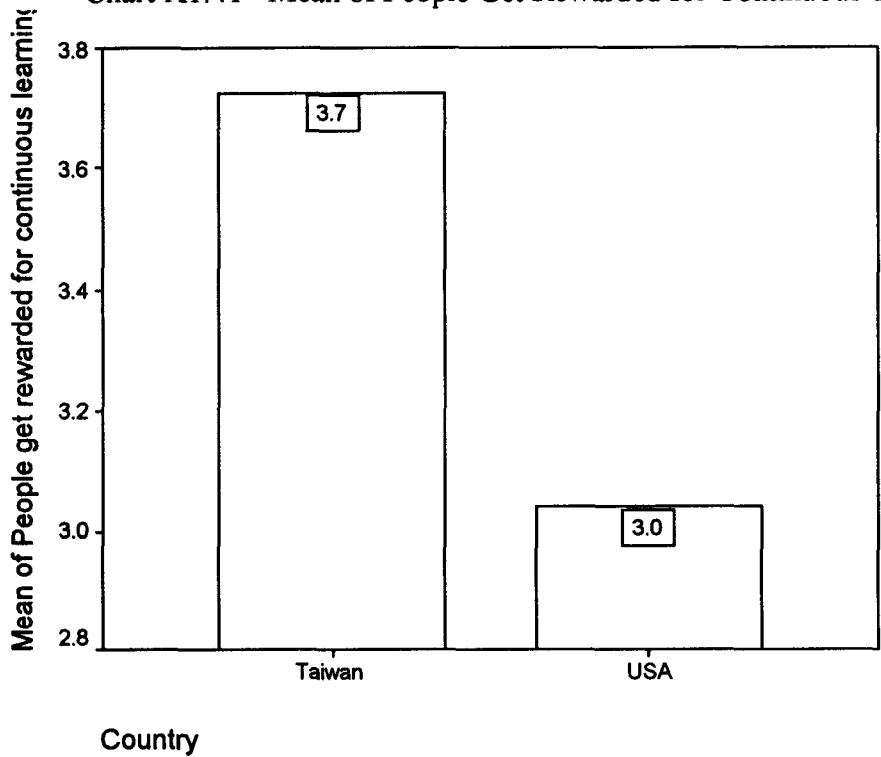


Chart A1.41 Mean of People Get Rewarded for Continuous Learning



Appendix 2 Barcharts of Control Variables by Indexes

Chart A2.1 Mean in KMFINDEX: size

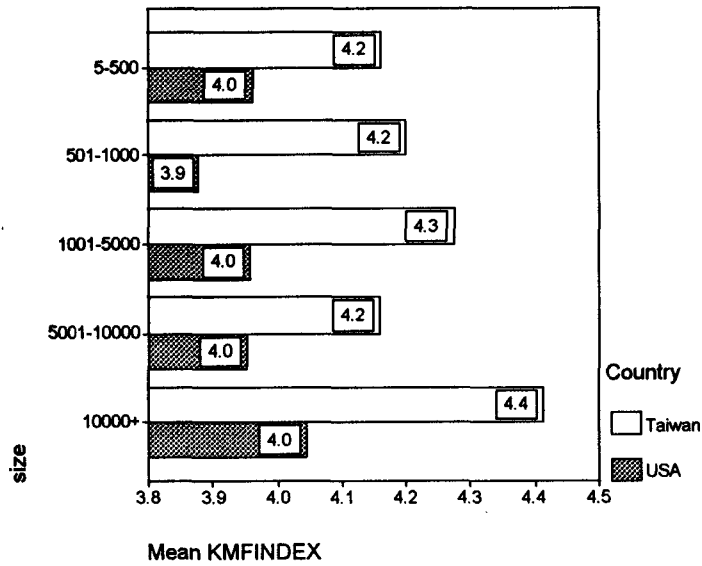


Chart A2.2 Mean in KMFINDEX: type

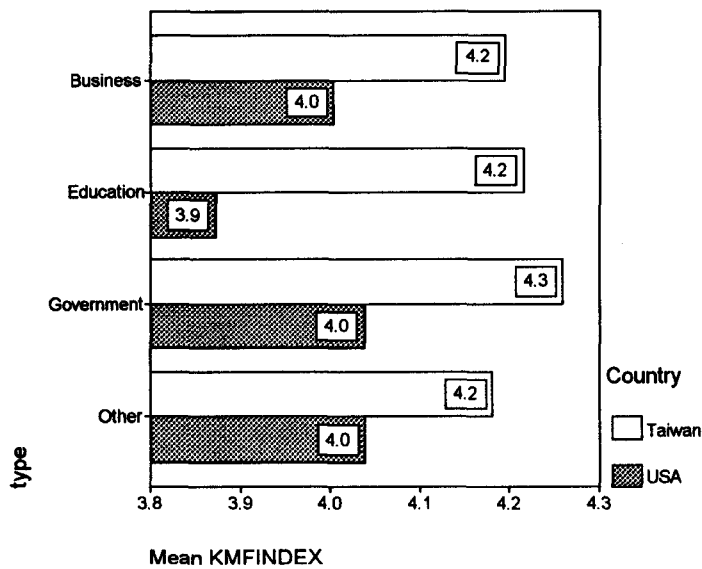


Chart A2.3 Mean in KMFINDEX: focus

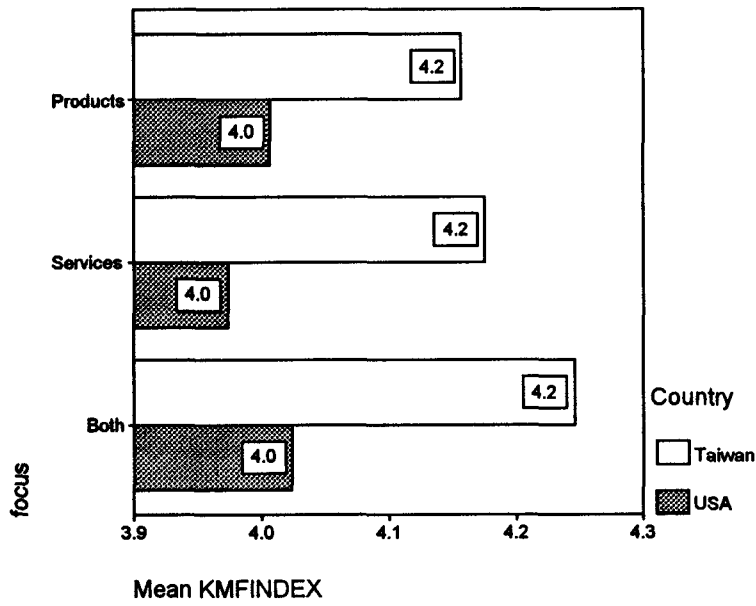


Chart A2.4 Mean in KMEINDEX: size

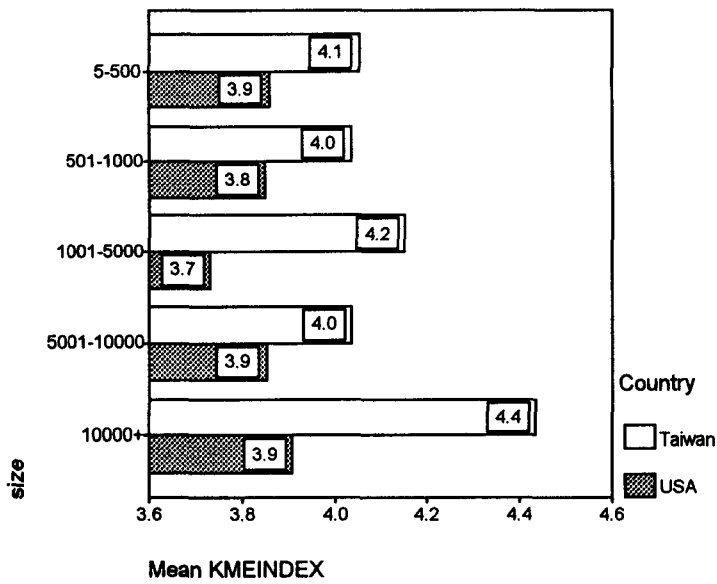


Chart A2.5 Mean in KMEINDEX: type

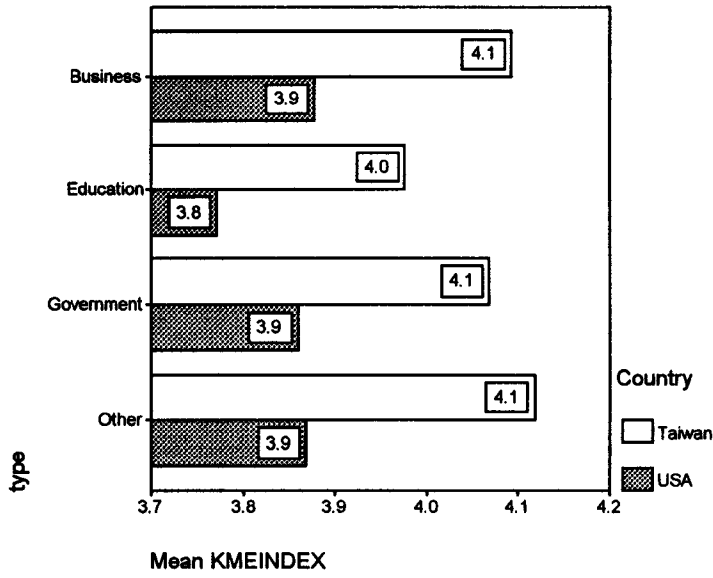


Chart A2.6 Mean in KMEINDEX: focus

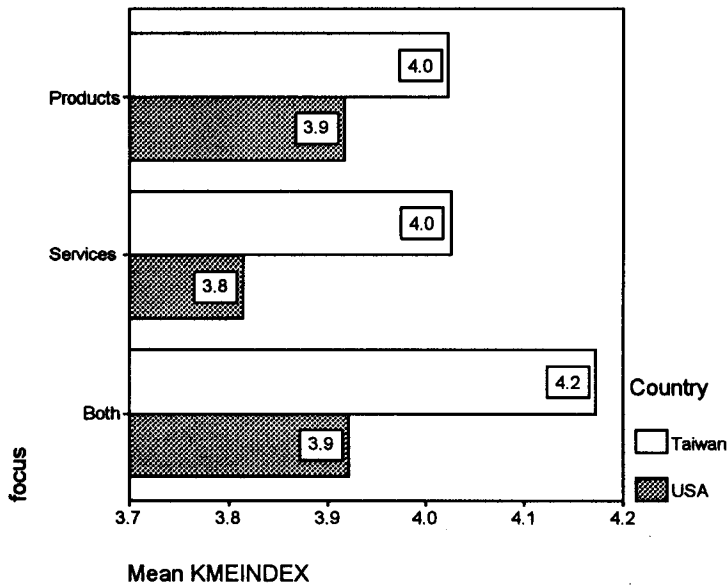


Chart A2.7 Mean in KMPINDEX: size

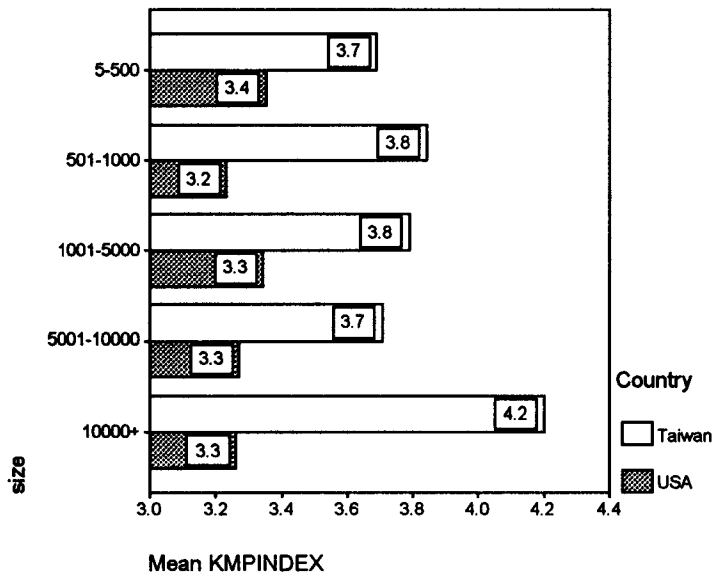
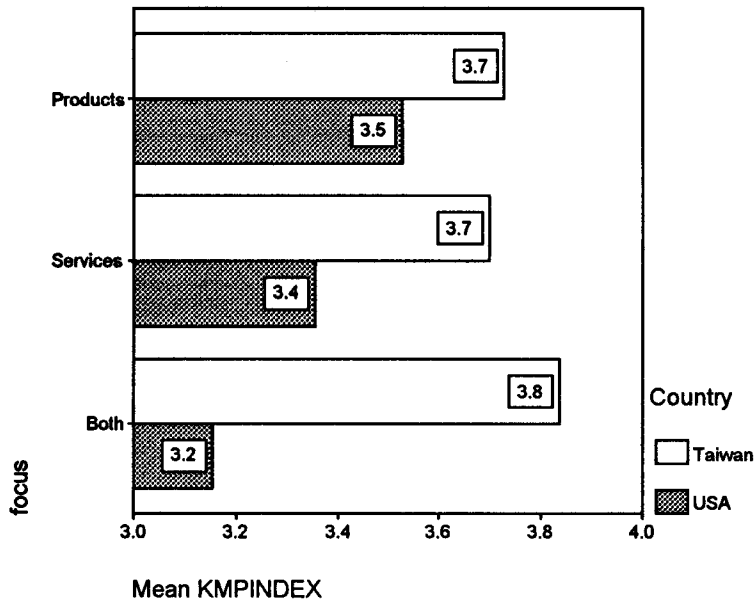


Chart A2.8 Mean in KMPINDEX: focus



Appendix 3 Survey Instrument

August 15, 2003

Re: National Culture and Knowledge Management

Dear Respondent:

Knowledge Management (KM) is an evolving discipline that involves the integration of people, processes and information technologies to define, acquire, create, store, retrieve, disseminate and systematically leverage information, expertise, intellectual assets, experiences, insight, rule-of thumb, knowledge and wisdom in the enterprise.

Many scholars and practitioners are working to understand the value of Knowledge Management in various countries. This study hopes to gain insight about knowledge management in Taiwan. The survey should not take more than ten minutes to complete. There are “no right or wrong” answers, so please share with us your beliefs, opinions and experiences. Your participation is voluntary and your responses will be kept completely confidential.

This research is conducted under the supervision of Dr. Michael Stankosky, a leading professor in the area of Knowledge Management of the Engineering Management and Systems Engineering Department of The George Washington University.

Please **Mail or Fax** the completed questionnaire to the following address or fax number:

Po-Jeng Wang
5203 Concordia Street, Fairfax, VA 22032-3409 USA. TEL/FAX: (703) 425-0162. USA

Thank you for your participation! Please respond by September 30, 2003 or sooner if possible.

With appreciation!

Po-Jeng Wang
Doctoral Candidate in Department of Engineering Management and Systems Engineering
School of Engineering and Applied Sciences
The George Washington University

Knowledge Management Survey

Demographics

Business Size: (1) 5-500 (2) 501-1000 (3) 1001-5000 (4) 5001-10000 (5) 10001+

Business type: (1) Business (2) Education (3) Government (4) Other

Business Focus: (1) Products (2) Services (3) Both

Please circle the letter that best fits your response to the following questions.

1. Which one of the following statements best describes your organization?

- A. Knowledge Management programs in place
- B. Currently setting up such a program
- C. Examining need for such a program
- D. No program/Not consider one
- E. Considered and decided against program
- F. Don't know

2. What level in the organization promotes hardest to have a Knowledge Management program?

- A. Board level
- B. Senior management
- C. Middle management
- D. Grass roots/employees
- E. Across the spectrum
- F. Don't know

3. What departmental or functional budget contributes most to Knowledge Management costs?

- A. IT
- B. Marketing
- C. Customer Service Sales
- D. Human Resources
- E. Operations
- F. Finance
- G. R&D
- H. Training, learning & development
- I. Others
- J. Don't know

KM Factors

Please indicate the extent to which you agree or disagree that the following statements are critical factors for developing successful Knowledge Management within your enterprise. Please respond by circling the number to the right of the statement that best represents your opinion using the following scale: 5 (Strongly Agree), 4 (Agree), 3 (Neutral), 2 (Disagree), 1 (Strongly Disagree).

Factor of Successful KM	5	4	3	2	1
Improvements in IT infrastructure to support the Knowledge Management.	5	4	3	2	1
Organizational buy-in and support of Knowledge Management.	5	4	3	2	1
Leadership involvement, support, and advocating of KM.	5	4	3	2	1
Rewards system based on employee KM participation and support.	5	4	3	2	1
Climate of openness and thinking "outside the box."	5	4	3	2	1
Continuous education of employees.	5	4	3	2	1
KM advocates and champions within the enterprise.	5	4	3	2	1
Identifying enterprise core competencies and necessary knowledge domains to support those core competencies.	5	4	3	2	1
Gathering and formalizing existing internal enterprise knowledge for present and future use.	5	4	3	2	1
Gathering and formalizing existing external knowledge for present and future use.	5	4	3	2	1
Developing an enterprise repository and database of information and knowledge to support a KM.	5	4	3	2	1
Allocating resources to manage enterprise knowledge as to relevance, accuracy and value to the enterprise – ability to eliminate old, outdated, incorrect, or unnecessary information and knowledge.	5	4	3	2	1
Effective and efficient methodology of distributing knowledge to employees (automating information and knowledge to be easily accessible to employees).	5	4	3	2	1
Developing and promoting employee sharing and collaboration.	5	4	3	2	1

KM Expectations

Please indicate the extent to which you agree or disagree that the following statements are expected benefits to your enterprise from Knowledge Management. (This relates for example to investing in KM – what would you expect to achieve for your investment?) Please respond by circling the number to the right of the statement that best represents your opinion using the following scale: 5 (Strongly Agree), 4 (Agree), 3 (Neutral), 2 (Disagree), 1 (Strongly Disagree).

Expected Benefit to Your Enterprise from a KM	5	4	3	2	1
Stimulation and motivation of employees.	5	4	3	2	1
Formalized knowledge transfer system established (Best practices, lessons learned).	5	4	3	2	1
Better on-the-job training of employees.	5	4	3	2	1
Enhanced enterprise innovation and creativity.	5	4	3	2	1
Improved overall enterprise performance.	5	4	3	2	1
Enhanced client relations - better client interaction.	5	4	3	2	1
Development of an entrepreneurial culture for enterprise growth and success.	5	4	3	2	1
Improved employee retention.	5	4	3	2	1
Improved ability to sustain a competitive advantage.	5	4	3	2	1
Enhanced transfer of knowledge from one employee to another.	5	4	3	2	1
Means to identify industry best practices.	5	4	3	2	1
Better methods for enterprise-wide problem solving.	5	4	3	2	1
Enhance the development of business strategies.	5	4	3	2	1
Enhance business development and the creation of enterprise opportunities.	5	4	3	2	1
Enhanced and streamlined internal administrative processes.	5	4	3	2	1

KM Practices

Please indicate the extent to which you agree or disagree with the following statements. Please respond by circling the number to the right of the statement that best represents your opinion using the following scale: 5 (Strongly Agree), 4 (Agree), 3 (Neutral), 2 (Disagree), 1 (Strongly Disagree).

KM Practices in my Enterprise	5	4	3	2	1
The organizational benefits of a knowledge-centric organization are clearly understood by everyone in our organization.	5	4	3	2	1
Knowledge management is a top priority in our organization.	5	4	3	2	1
Our organization has a clear and strong commitment to knowledge management initiatives from senior management.	5	4	3	2	1
Our organization has sufficient financial resources to support Knowledge management initiatives.	5	4	3	2	1
Our organizational culture encourages knowledge sharing.	5	4	3	2	1
People in our organization have the time to share information.	5	4	3	2	1
Teamwork is a critical component of our organization's culture, structure and processes.	5	4	3	2	1
Our organizational strategies, structures, policies, procedures, processes and reward systems focus on long-term growth.	5	4	3	2	1
Our organization has evolved from a rigid hierarchical structure to a process-oriented structure.	5	4	3	2	1
Our organization has invested in effective knowledge management technologies (i.e., intranet, databases, email and digital libraries).	5	4	3	2	1
Our organization has the human resources to support our information technology systems, software and network.	5	4	3	2	1
People in our organization are often rewarded for continuous learning or knowledge sharing.	5	4	3	2	1