



**Evaluating the Impact of Organizational Culture and Leadership Style on
Implementation of Knowledge Management in an Oil and Gas Company in
the United Arab Emirates**

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Implementation of Knowledge Management in an Oil and Gas Company in the
United Arab Emirates

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Abstract

Organizational culture (OC), leadership style (LS), and knowledge management (KM) have been identified as the most important factors affecting an organization's performance. KM is now widely recognized as a competitive advantage. It is included in the core strategy and is a fundamental source of wealth and success of many organizations. The subject of OC, LS, and KM are well researched; however, very few empirical studies have been carried out linking OC and LS with KM.

This research is set out to examine and evaluate the relationship between OC, LS, and KM in Abu Dhabi Gas Liquefaction Company (ADGAS) in the United Arab Emirates (UAE) using the competing value framework (CVF) developed by Cameron and Quinn (2006). To our knowledge, there are no studies carried out to evaluate or examine the impact of the intertwined network between OC types, LSs, and the implementation of KM and its transfer and sharing in oil and gas industries in the UAE. This empirical study was carried out using a questionnaire survey to answer the following research questions: 1) Which are the most dominant cultures in ADGAS?, 2) Which OC type is most effective in supporting KM?, 3) Which leadership style is most effective in supporting KM?, 4) Is there a positive relationship between OC and LS?, and 5) How is knowledge shared in ADGAS?

The Organizational Culture Assessment Instrument (OCAI) was used to measure OC types. The Multifactor Leadership Questionnaire (MLQ) was used to measure the three styles of leadership whereas the Knowledge Management Assessment Instrument (KMAI) was used to assess the six KM processes considered in this study. It was revealed that the main dominant culture is hierarchy followed by clan, and the leadership style was mainly transformational followed by transactional and that there was no existence of laissez-faire leadership style. The

results also showed that there is a positive relationship between OC, LSs, and KM. KM as a single construct is strongly related with culture and leadership. Individual different culture types and leadership styles were present in the divisions and are also strongly related to KM. Culture and leadership are also related, and the relationship between the OC types and KM was strongly positive except for adhocracy culture. The relationship between the LSs and KM was strongly positive except for laissez-faire (passive/avoidant). The relationship between LS and OC types was strongly positive.

The implications that the change in culture makeup due to employment of foreign workforce and the intake of young national staff will affect the organizational culture in general and particularly the level of trust, leadership, and knowledge sharing and transfer. Not only that, but will the increase of national employees also increase *wasta* and nepotism, or will it decrease with preferred changes in leadership styles and OC?

The main gaps in knowledge, skills, and experience created by new national recruits and leaving or retiring expats need to be addressed in terms of organizational cultural changes as well as changes in management and leadership styles.

The way knowledge is shared within ADGAS need to be driven away from the old Arab traditional way and replaced by a learning-oriented culture, which can be only achieved by building trust and motivation between both UAE nationals and expats. The processes of the knowledge cycle need to be reviewed and enhanced in accordance to the needs of each division with the aim to improve knowledge implementation bringing about performance excellence.

It is recommended that similar research has to be conducted in other oil and gas companies within the UAE and in other Gulf states, as well as in government sectors, with emphasis on the issue of trust and the drainage of knowledge. Research is suggested to

investigate how globalization is influencing the national culture (NC) of the UAE and how is that spilling into UAE organizational or corporate cultures.

Abbreviations

OC	-	Organizational Culture
KM	-	Knowledge Management
LS	-	Leadership Style
ADGAS/AG	-	Abu Dhabi Gas Liquefaction Company
UAE	-	United Arab Emirates
CVF	-	Competing Value Framework
OACI	-	Organizational Culture Assessment Instrument
MLQ	-	Multifactor Leadership Questionnaire
KMAI	-	Knowledge Management Assessment Instrument
NLPCA	-	Nonlinear Principal Component Analysis
AMOS	-	Analysis of Moment Structure Software Package
SEM	-	Structural Equation Modeling
SECI	-	Socialization, Externalization, Combination, and Internalization
SPSS	-	Statistical Package for the Social Sciences
GCC	-	Gulf Cooperative Council
OCI	-	Organizational Culture Inventory
ADNOC	-	Abu Dhabi National Oil Company
SPC	-	Supreme Petroleum Council
GASCO	-	Abu Dhabi Gas Industries Company Ltd.
TEPCO	-	Tokyo Electrical Power Company
LNG	-	Liquefied Natural Gas

ANOVA	-	Analysis of Variance
EM	-	Expectation Maximization
GFI	-	Goodness-of-Fit Index
SRMR	-	Standardized Root Mean Square Residual
LSD	-	Least Significant Diffuseness
ED	-	Engineering Division
FD	-	Finance Division
HRD	-	Human Resources Division
ITD	-	Information Technology Division
OD	-	Operations Division
MD	-	Maintenance Division
KMS	-	Knowledge Management System
CAMS	-	Competency Assurance Management System
CAS	-	Competence Assurance System
TT	-	Technical Trainer
OJT	-	On-The-Job Trainer
SME	-	Subject Matter Expert
SKT	-	Skill Knowledge Transfer
NFI	-	Normed Fit Index
CFI	-	Comparative Fit Index
RMSEA	-	Root Mean Square Error Approximation
SQA	-	Scottish Qualifications Authority

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Chapter 1

Introduction

1.1 Introduction

Knowledge and expertise are assets to any organization, and transferring and sharing these assets effectively can be seen as the most valuable contributors for competitiveness, sustainability, and success of an organization (Benmahamed & Ermine, 2007). Also, a strong and effective organizational culture is essential for survival in today's competitive world. Hence, it is of paramount importance to develop an effective strategy for knowledge management (KM) within the United Arab Emirates (UAE) oil and gas companies, in particular, Abu Dhabi Gas Liquefaction Company (ADGAS) (ADNOC Strategy for Emiratisation, 2013).

The potential damage caused by the loss of key competencies and the significant number of most experienced staff leaving the organization—because of retirement or market demand—have become a cause of great concern. The drainage of experienced personnel and knowledge has stressed the need to develop an effective strategy for knowledge management system (KMS) within the UAE oil and gas companies. To understand and analyze the depth of the problem at hand, one must not only consider the culture of the organization, its leadership styles (LSs), and the effectiveness of its KM system but also analyze the intertwined network between these variables and assess the impact they have on one another.

The subject of OC, LS, and KM are well researched and documented; however, very few empirical studies have been carried out linking OC, LS, and KM (Nguyen & Mohamed, 2011). There have been no academic studies carried out that considered the impact of OC types linked to LSs and the impact this combination might have on KM for the oil and gas companies within the UAE.

The present study is set out to evaluate and examine the impact and effects of OC and LS on KM and find out any pitfalls or gaps in ADGAS KMSs. Furthermore, the study attempted to find out how OC and LS influence and affect the implementations of knowledge transfer and knowledge sharing using the socialization, externalization, combination, and internalization (SECI) model. The competing value framework (CVF) was used to analyze OC types and how they may be related to the various dimensions of KM and LSs.

The scope of this study was limited to senior and middle management and technical and support staff from six divisions, namely, operations, maintenance, engineering, human resources (HR), information technology (IT), and finance. It is intended to collect comparative data from different divisions and from the male and female population of employees. Figure 1 shows the scope of the research process.

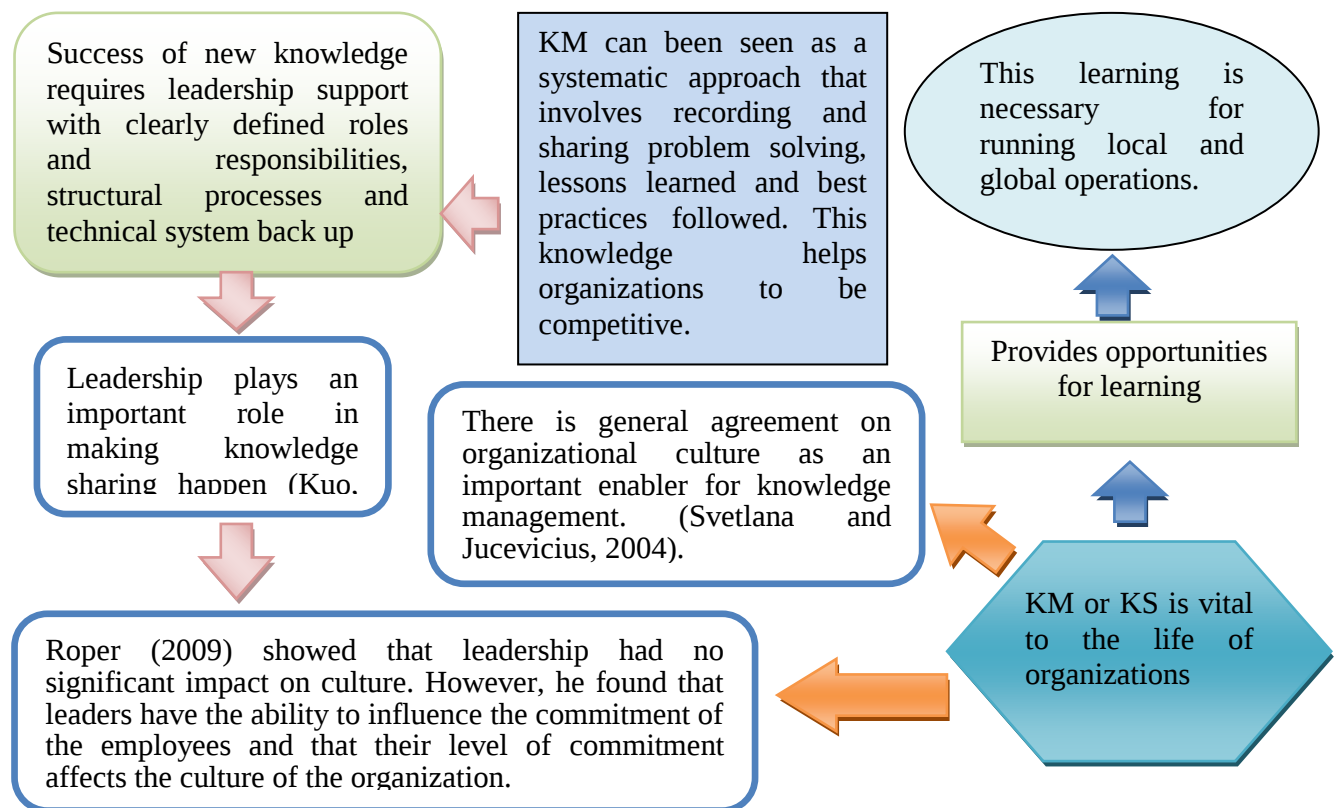


Figure 1 - Scope of Research (Source: Mulins, 2007; Skok Et Al., 2010; Kuo Et Al., 2011; Roper, 2009; Svetlana & Jucevicius, 2004)

1.2 Abu Dhabi National Oil Company and Group of Companies

Abu Dhabi National Oil Company (ADNOC) was established in 1971 and over four decades has steadily developed into 16 major diversified groups of companies in energy, exploration, and production of crude oil and natural gas and refining, marketing, supply and transportation, and manufacturing of petrochemicals. Oil and gas are essential in sustaining life on this planet, and this is particularly true when considering the economy of the UAE. The revenue generated from the sale of oil and gas and their uses locally had contributed to the rapid development and modernization of the UAE. The Supreme Petroleum Council (SPC), founded by the late His Highness Sheikh Khalifa Bin Zayed Al-Nahyan, president of the UAE and ruler of Abu Dhabi, formulates and oversees the implementation of Abu Dhabi petroleum policies.

Two of the 16 companies that are directly involved in the natural gas industry are Abu Dhabi Gas Industries Company Ltd. (GASCO) and ADGAS. ADGAS was founded in 1971 whereas GASCO was established in 1978 to process the associated gas from its offshore oil drilling operations. The establishment of ADGAS was in accordance with the vision and directive of the late Sheikh Zayed Bin Sultan Al-Nahyan to minimize flaring of the associated gas (by-product of oil production), thus protecting the environment from the emission and capture of flared gases as a valuable national resource of income. Consequently, ADNOC and its partners discussed the best ways to use these natural resources and find customers to purchase them. A 20-year agreement was struck between ADNOC and Tokyo Electrical Power Company (TEPCO) to construct a liquefied natural gas (LNG) plant to process and export it to Japan. The ADGAS plant, which is located in Das Island about 160 km from the coast of Abu Dhabi, was completed in 1977, and the first LNG shipment was exported to Japan on the 29th of April of the same year.

ADGAS is now one of the leading pioneers in the LNG industry not only in the Gulf region but also in the whole of the Middle East. ADGAS production increased with the addition of a third LNG train in 1994 and the construction of the Offshore Associated Gases (2011) and the Integrated Gas Development program (2013). ADGAS also produces propane, butane, pentane, and sulfur, which are marketed to a number of major companies around the world.

ADGAS (AG), which is one of the successful public limited companies in the oil and gas industry in Abu Dhabi, was selected for this study. AG has always been proud of its Emirati employees whose numbers had steadily increased as a result of the company's success in the implementation of its strategic plan that aims to raise the percentage of the Emirati employees among its workforce to 75% by 2017 (ADNOC Strategy for Emiratisation, 2013). Similar approaches are taking place in most of the Gulf states, and this is shared in conferences, seminars such as GCC Nationalization Summit and ADIPEC (Abu Dhabi International Petroleum Exhibition and Conference), and exchanged visits between oil and gas companies. Active sharing of L&D approaches and systems had been conducted between oil and gas companies in the region (ADIPEC, 2012; GCC Nationalization Summit, 2009).

1.3 Problem Statement

The lack of experienced people to manage oil and gas companies is one of the key issues faced by UAE and Gulf states today because of the large number of multibillion dollar projects both locally and globally. It is essential for organizations to compete successfully in the global markets (Bender & Fish, 2000). Furthermore, the ambitious Emiratization strategy of achieving a target of 75% of UAE staff in place of expats by 2017 has led to the loss of knowledgeable and experienced staff and will continue to do so in the near future.

These factors not only created shortages in staff with special technical skills but the motivation and morale of expatriate employees are also affected by Emiratization. Although the core management and other positions are manned by UAE nationals, the company depends on the expatriate workforce in many areas to maintain its quality of service. Within 5 years' time, the UAE oil and gas companies are expected to lose approximately 14% of its current intellectual manpower because of retirement. Approximately 2.8% of those retiring are seen to be aligned to key technical management roles. Of those that remain, more than 51% are between the ages of 25 and 39 (Y generation), and the 35% are between the ages of 40 and 54 (X generation) (ADNOC Strategy for Emiratisation, 2013), which makes the above statements even more relevant (Wangen & Hater, 2006). "The loss of experienced personnel combined with the influx of young employees is creating unprecedented knowledge retention and transfer problems that threaten companies' capabilities for operational excellence, growth, and innovation" (Stemke & Wilson, 2008, p. 73). One of the key challenges nowadays due to the fast and competitive developments in the oil and gas industries is attracting, training, developing, and retaining young UAE nationals to take up critical positions occupied by retiring employees (Orr & McVerry, 2007). Knowledge, skills, and experience are seen as the most valuable assets to any oil and gas company, and their effective transfer within organizations, especially to new members whether UAE nationals or expats. Figure 2 below summarizes the problem statement.

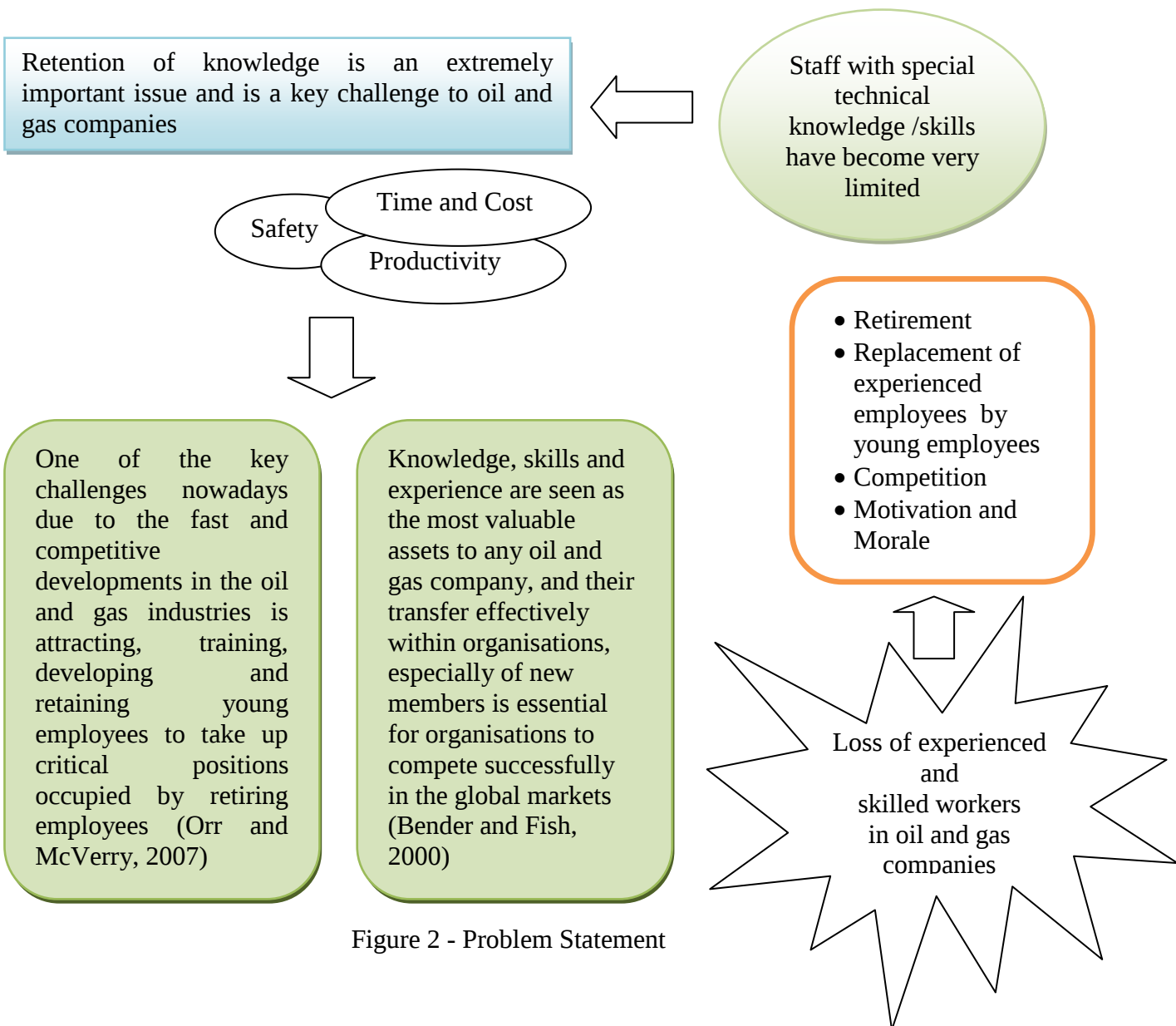


Figure 2 - Problem Statement

1.4 Knowledge Management System in ADGAS

Knowledge management (KM) is about building organizational intelligence by enabling people to improve the way they create, capture, share, and use knowledge. To manage the creation, sharing, and implementation of knowledge is a challenge, and many strategies had been developed and adopted to meet this challenge ranging from new technologies to altering organizational cultures (Kaur et al., 2012). KM involves using the ideas and experiences of employees to improve the organization's performance through better practices, strategies, and

policies (Levinson, 2013). It is essential to have structured roles, accountabilities, responsibilities, policies, and rules to achieve a KM framework. In 2010, ADGAS had embarked and initiated a five-year KM framework study to establish a culture of know-how where knowledge is analyzed, created, shared, and used effectively to enhance performance and competitiveness and retain organizational memory (Milton, 2010). The framework (Figure 3 and 4) was set out to involve the whole organization including people, processes, and technologies in order to establish an efficient KMS with a systematic approach to avoid uncalculated risks or failures to its operations. A phased plan was initiated by hiring a consultant in KM and started with the maintenance division (MD) and was followed by other divisions in ADGAS. An audit assessment was declared to pinpoint ADGAS's knowledge needs, assets and resources, KM gaps, and to what extent does ADGAS's leadership, employees, processes, and technologies support or stifle effective flow, sharing, and application of knowledge. One of the highlights of the audit was knowledge sharing and its transfer from expats to locals. This pilot scheme studied 15 elements made up of four main questions related to tacit and explicit knowledge in terms of communicating and capturing the former and in terms of structuring, assessing, and reapplying knowledge for the latter (see appendix 6). The questions were related to roles, accountability, process, and technology. There were three further questions based on the theme of KM expectations, activity, and support. The purpose of assessing these 15 elements was to find the strengths and gaps in the 15 elements and what actions and options to take to close these gaps.

The pilot test showed that there are multicultural differences and clashes and motivation factors for knowledge transfer and sharing, and the knowledge shared is very specific to troubleshooting maintenance problems. The practical content of ADGAS's Competency Assurance Management System (CAMS) and the assessment thereof are to be improved, and

young people are to be involved with more experienced teams, for example, attaching young trainees to the vendors and major contractors. In addition, the report recommended that there should be a motivation for the trainees and the trainers, coaches, and skill/knowledge transfer (SKT) expert.

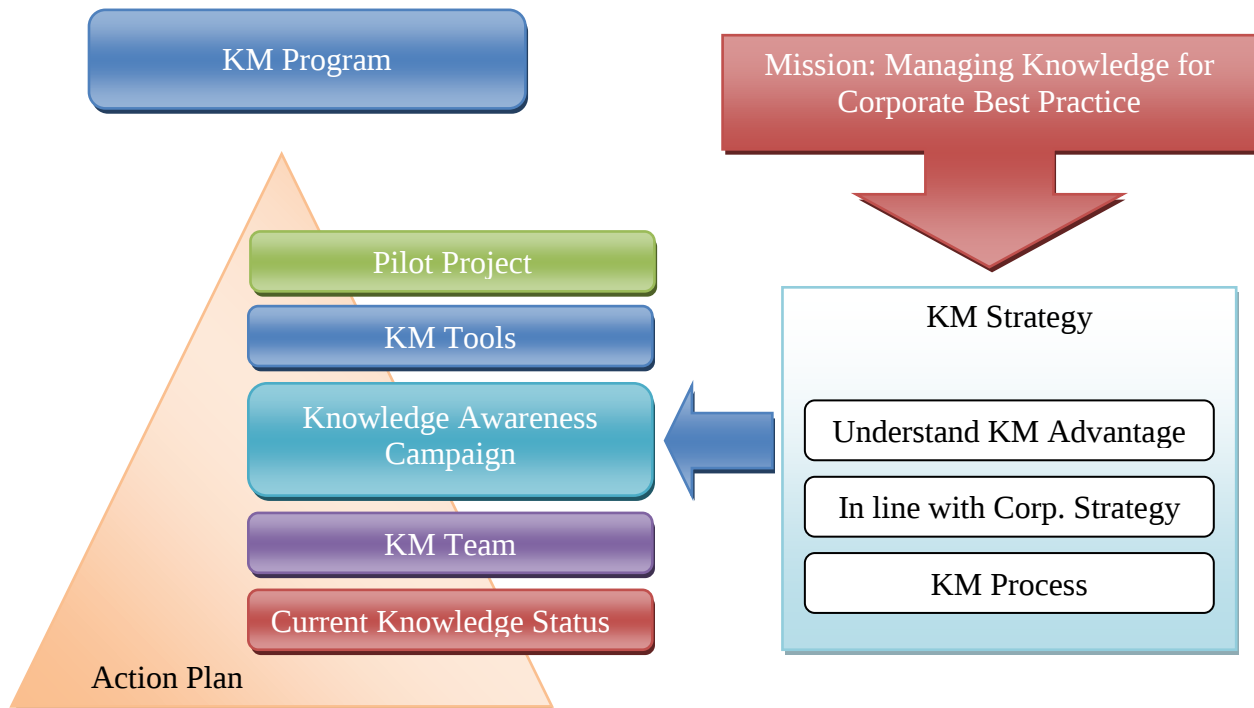


Figure 3- ADGAS Knowledge Management Framework 1 (Source: Milton, 2010)

The objectives of this approach are not only to connect people to information and knowledge, to connect people to people, and generally to improve the organization performance and give it a competitive edge over others but also to develop a strategic definition for KM implementation plan and to identify the resources needed for its success. Therefore, it can be stated that ADGAS did lay the foundations for the development of an effective KMS, and the present study will assess its status for future improvements (Milton, 2010).

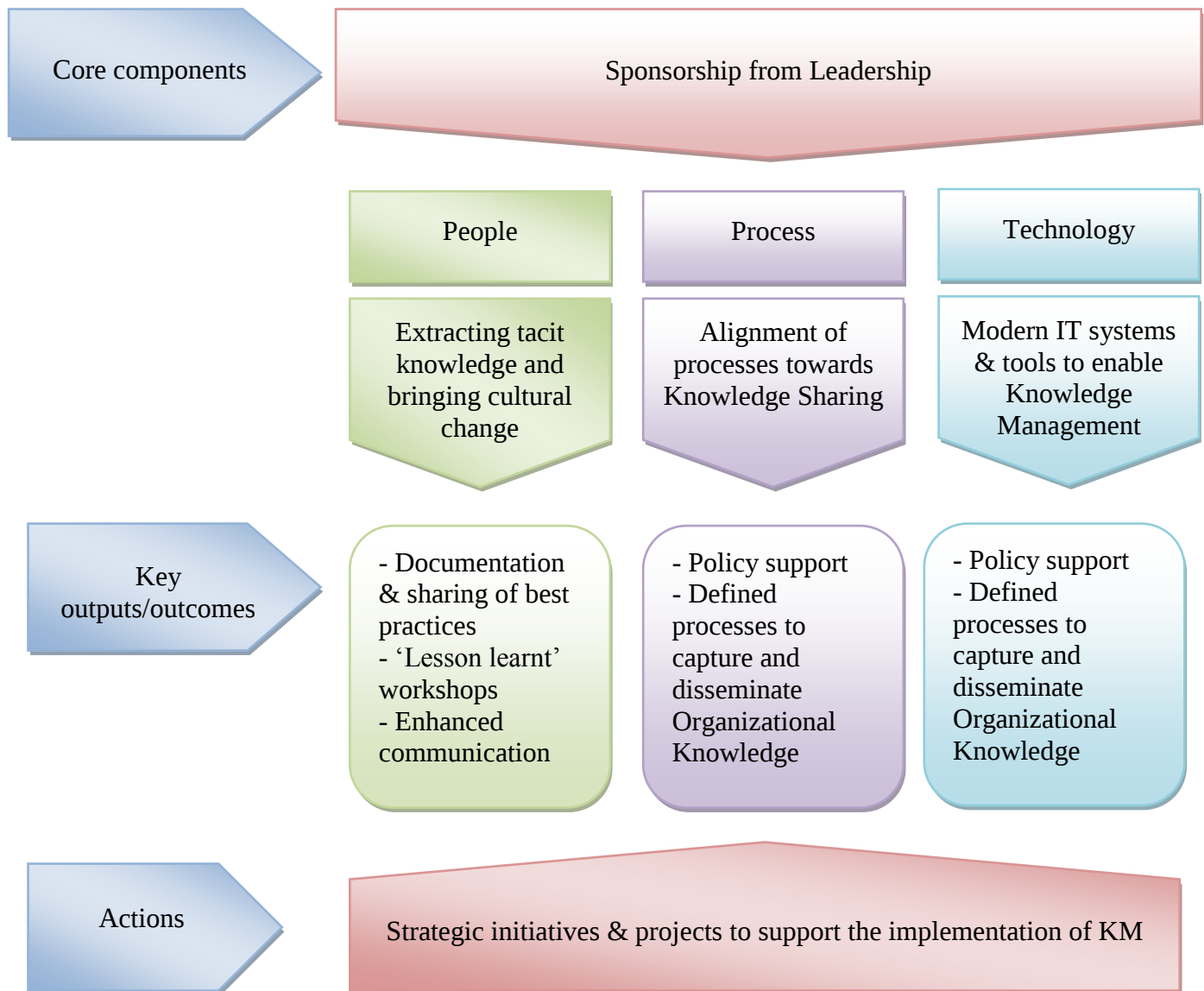


Figure 4- ADGAS Knowledge Management Framework 2 (Source: ADGAS Sustainability Report, 2011)

1.4.1 Competence Assurance Management System

ADGAS has a very comprehensive accredited CAMS program by the Scottish Qualifications Authority (SQA) as part of its KMS for young professional engineers, operators,

and technicians, as well as nontechnical staff. In addition, ADGAS has a well-equipped training center run by highly qualified technical trainers (TTs), on-the-job trainers (OJTs), and SKT experts for this purpose. The CAMS program is in line with ADNOC directives to safeguard people, businesses, and Health, Safety, and Environment (HSE) critical activities, assets, and reputation, and all work is to be performed by competent employees who meet ADNOC minimum competence standards. The aim of this directive is to attract young locals, develop them to a high level of professionalism, retain and motivate them, and recognize and reward them according to their performance. The CAMS had been benchmarked and standardized for all ADNOC groups of companies. The development framework process for CAMS is briefly presented in Figure 5.

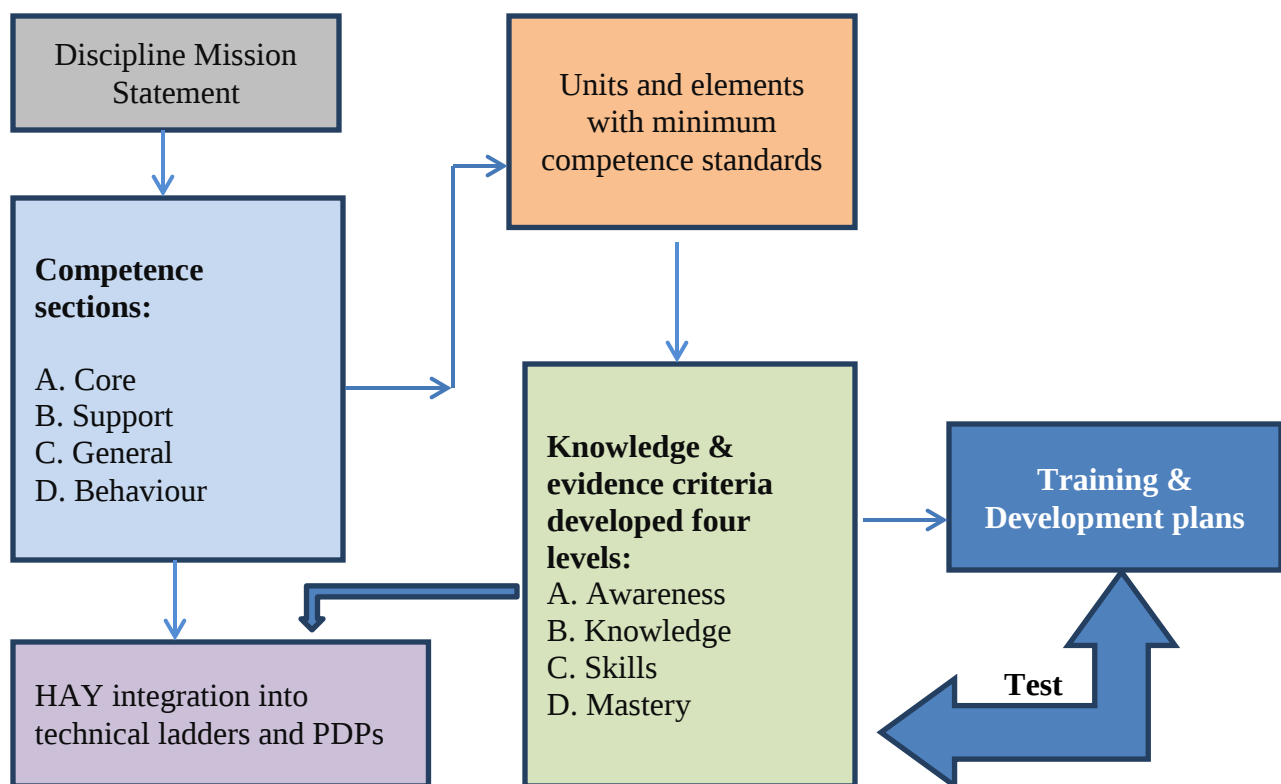


Figure 5 - ADGAS (CAMS) Development Framework Process (Source: ADGAS Competency Assurance Management System Gild Line, 2013)

1.5 Background on Culture and Definitions

The 1980s witnessed a growing interest in OC and its effects on other organizational parameters, and as a result, the literature lists a large number of definitions of culture presented by different researchers such as Schien (1990, 1992, 1995), Mintzberg (1990), Mehta and Krishnan (2004), Kilman et al. (1985), Lund (2003), and Dodek et al. (2010). Schein (1985) and other researchers such as Quinn and Rohrbaugh (1981) agreed that culture is reflected in the practices, values, beliefs, and underlying assumptions of formal and informal groups. Michelle et al. (2004) mentioned that Schein gave culture a multidimensional and multilevel concept categorizing culture into three interactive levels, namely, artifacts and creations (visible organizational structure), espoused values, and basic assumptions or unconscious beliefs. Rousseau (1990) added a fourth level and called it a pattern of behavior or behavioral norms.

The differences in definitions arise from the list of components/elements, some of which are implicit and some are explicit, embedded in the definitions. Tharp (2010) stated that in a study carried out in 1938 on culture, a universal list of all the elements were published showing 79 major elements with 637 sub elements. The lists of components are patterns of traditions, beliefs, values, norms, and meanings that are shared in varying degrees by members in a group. Therefore, culture can be seen as a mixture of cognitive and behavioral aspects. Al Suwaidi (2008) reported that Kluchohn and Kroeber (1952) listed over 100 definitions of culture. However, Al Suwaidi, in his thesis, defines culture as shared patterns of assumptions, values, and behaviors.

It is clear therefore that there is no general consensus on a comprehensive definition of culture, and it cannot be described completely or accurately (Ahmadi et al., 2012). As the word “culture” is used and applied broadly, it prompts the question “What is it exactly?” Tharp (2010, p. 2) wrote that culture means “cultivation” or “tending the soil” when it first appeared in the

Oxford English Dictionary around 1430. It became associated with the phrase “high culture” in the 19th century, meaning “refinement of mind, taste and manners.” Its meaning changed in the 20th century because of the fast development in media, IT, and computer technology to include transmitted social behaviors, beliefs, arts, and all other forms of man-made products and thoughts.

Alireza et al. (2013) stated that cultural differences have a significant influence and impact on both personal and corporate level/behavior. Culture contributes to our values from childhood as our communication, behaviors, and actions are molded by these acquired cultural values. Based on Hofstede’s statement, “behavior at work is a continuation of behavior learned earlier,” it is only reasonable to assume that national values have an impact on organizational culture.

The concept of OC evolved and became most influential yet most controversial in the 1970s and 1980s of the last century in the field of management practice and research (Linnenlueck & Andrew, 2009). The latest part of the 20th century experienced an upsurge of interest in OC, especially with the success of the Japanese industries, which sparked interest in the Japanese corporate values, attitudes, and behaviors as reasons for their superior performance (Tharp, 2010). Many theories were formulated suggesting that OC is an essential strategic resource in achieving and maintaining continuity and success of organizations and had been connected to KM, innovation, and information technology (Michelle et. al., 2004). Reiny et al. (2006) refer to the definition of Schein (1992, p.9.) as “a pattern of basic assumptions that the group learned as its problems of external adaptation and internal integration, that have worked well enough to be considered valid, and therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems.” It is known that OC touches on

most aspects of organizational life particularly of people's relationships and their social networking. The culture of the organization influences the way individuals or groups of individuals behave and the way they apprehend and communicate with the external environment.

Daulatram (2003, p. 1) quoted the definition of Kilmann et al. (1985) of corporate culture as "the shared philosophies, ideologies, values, assumptions, beliefs, expectations, attitudes and norms that unite an organization together." Furthermore, researchers make a distinction between corporate culture and OC, in which the former contains elements and values imposed by the management, such as standards of behavior, dress code, logos, office, and so on, that reflect the characteristics of the corporation. Handy (1985) stated that corporate culture is different from OC because it can be imported or adopted such as in a joint venture or foreign staff where individuals will bring in their own independently gained expertise and behavior that will influence the culture of the organization as a whole. OC is what the organization "is all about" and not what the organization "has." Corporate culture emphasizes corporate values, standards, and behavior that specifically reflect the objectives of the organization. Corporate culture is very hard to alter, and employees need time to adjust to the new changes. OC is a system built on shared behavioral patterns, beliefs, traditions, and actions taken when its members are confronted with decision-making responsibilities (Kefela, 2010).

1.6 Background on Leadership Style and Definition

"Leadership style" may be defined as the way in which plans are implemented and how people are motivated and guided to achieve objectives and targets set out by the leader. Rabinowtiz (2013, p. 1) quoted Gardner's definition of leadership as "the process of persuasion

or example by which an individual (or leadership team) induces a group to pursue objectives held by the leader or shared by the leader and his or her followers.”

Leadership assumes many roles and functions such as an influential process affecting the actions of team members (Polities, 2004). Another function is to drive the team to perform more efficiently by reflecting on learning experience and to promote both skills and knowledge transfer (Amagoh, 2009). Leadership is also critical in defining, planning, and sustaining an organization’s objectives, values, and vision. To be a successful leader, one must encourage and influence his team to achieve the organization’s objectives (Amagoh, 2009). Leaders must also lead by setting an example that demonstrates that they are congruent with the elements of culture such as values, behaviors, measures, and actions (Kefela, 2010).

People differ in their perception and repertoire of LS, hence, each leader will adopt his own style of leadership. There seems to be many ways by which leaders lead people from the times of Mahatma Gandhi and Winston Churchill to the times of Martin Luther King and Steve Jobs. A number of simple ways had been developed by business people and psychologists to describe LSs, which when understood and adopted correctly can make effective leaders.

LSs were first identified by Lewin et al. (1939), who established three major classes of LSs: authoritarian or autocratic, participative or democratic, and delegative or free reign. These latter became known as autocratic, democratic, and laissez-faire as described below:

1.6.1 Autocratic Leadership

Autocratic leadership adheres to policies and regulations and keeps strict and close control over members of the team. Such leaders tell their followers what they want done and how they want it accomplished without consultation or input from the team. This LS creates a distinct professional relationship with direct supervision as the tool for anything to be done and to make a successful environment. This style allows managers to retain as much power and decision-making authority as possible. Motivation is built on rewards and punishments, goals are set individually, downward communication, and controlled discussions (Martindale, 2011). The leader is ruthless and is only concerned with his or her own power and status; he or she will set out to destroy any opposition to his or her ideas or decisions. Autocratic LS often leaves mistrust and fear and tends to encourage others to do the same to protect their positions at all costs and does not foster personal relationships. Although autocratic leadership lacks initiatives, new ideas, and development of its people, it provides a stable and secure work environment and a decisive, effective leadership.

1.6.2 Democratic Leadership

Democratic leadership, sometimes referred to as participative LS, is one in which the leader involves one or more members of the team in the decision-making process, maintaining his authority over the final decision making. It can be expressed in one phrase: “What do you think?” It does not require that the leader should be expected to know everything but rather relies on knowledgeable and skillful employees. In other words, the leader shares the decision-making abilities with the team, promoting the interest of the group and practicing social equality (Foster, 2002). The democratic leader should be able to select who should participate in group meetings

in which decisions have to be made and voted on (Woods, 2010). Although democratic leadership is one of the most effective LSs, it has some potential downside. In situations where roles are not clear or time is of the essence, democratic leadership can result in communication failures and uncompleted projects. Although group meetings for making decisions may take a long time, it often produces good results. The team's skills and their willingness to share their knowledge in group meetings are the best contributing factors to a successful democratic LS. This type of leadership fosters and promotes creativity, develops people's competencies and skills, and provides job satisfaction (Martindale, 2011).

People make organizations, and a good leader should understand that his position and that of other members are based on roles and responsibilities and not on status. The ultimate decision making lies with the democratic leader, and he should be prepared to take the consequences of his decisions.

1.6.3 Laissez-Faire Leadership

Lewin, Lippitt, and White were the first researchers to describe laissez-faire along with both the autocratic and the democratic LSs in 1938. Laissez-faire is a French phrase that means “leave things as they are” or “free reign.” This LS relies on delegating tasks to the team members with little or no interference or directions from the leader (Leadership Styles, n.d.). Laissez-faire LS gives the team members a high degree of autonomy and total freedom in decision making regarding their tasks. It provides them with all the materials needed to accomplish their goals while at the same time offers support and guidance when requested. The style is effective when (a) the team members are highly skilled, experienced, trustworthy, and educated; (b) when the followers have pride in their work and the drive to achieve their goals successfully; and (c) the input of certain outside expertise and consultation is required. It can lead to high job satisfaction and increased productivity. Its downfall shows when the team feels insecure because of the unavailability of the leader and when the leaders cannot and will not provide feedback to the team (Leadership Styles, n.d.).

1.7 Background on Knowledge Management and Definitions

In today’s demands in the market, knowledge is the fundamental source of an organization’s wealth and success, as described by Biygautane and Al-Yahiya (2011). To manage knowledge effectively, the first step is to understand it. Collins English Dictionary (sixth edition, 2004) defines knowledge as “the facts, feelings and experiences known by a person or group of people.” Knowledge is thus more than just information; it includes awareness, understanding, and lessons learned from results and comparisons of experiences or studies and making connections and analysis.

Csepregi (2004) stated that the old phrase of “knowledge is power” is not applicable these days and is replaced by “knowledge sharing is power.” “Knowledge,” as defined by Sveiby, (1997) is the capacity to act. Davenport and Prusak (1998) stated that knowledge is “broader, deeper, and richer than data or information.” Knowledge is retained in the organizations after employees leave. The barriers to KS had been outlined by Davenport and Probst (2002), and they are personal, collective, structural, and political/cultural barriers. Firestone (2001, p. 9) quoted a few definitions of knowledge offered by writers and researchers in KM such as the following. Many philosophers define knowledge as “justified true belief,” “it is information in context,” and “knowledge is an understanding based on experience.” The Oxford English Dictionary, 10th edition, defines knowledge as “information and skills acquired through experience and education.” Allee (1997, p. 27) quoted that “knowledge can be perceived as a collection of understandings, experiences, acts and events that we retain, learn from and apply to manage and interpret the world that we live in,” and “knowledge is experience or information that can be communicated or shared.”

Knowledge can be expressed as a wealth of information acquired over a person’s life through stages of learning and experience. Knowledge is evergreen and continues to build up and develop to meet the needs and requirements of our changing world. It is stated that knowledge has two dimensions: tacit and explicit (Nonaka, 1994; Nonaka & Takeuchi, 1995). The tacit knowledge dimension is composed of two elements, namely, technical and cognitive. The technical elements are made up of the individual’s expertise and know-how, experiences, and skills acquired in a certain field. The cognitive element is that which is closely related to the individual’s beliefs, cultures, and viewpoints whereas the explicit dimension of knowledge is

designed and formed in certain codified form and is shared through common language and in the form of manuals and written procedures.

1.8 Knowledge Management, Knowledge Sharing and Knowledge Transfer

There is no agreed definition for KM, and the literature demonstrates that by giving so many definitions for it. In his article, Firestone (2001) raised and addressed key issues arising from the different definitions of both KM and knowledge from his personal point of view. “One essential definition is that, KM is composed of potential acts that are grounded in the signs that refer to them”, (Cavaleri & Reed, 2001, p. 114). The definition of KM has gained interest and evolved rapidly from its simple connotation as valuable information in action, in the last two decades. “Succinctly put, KM is the process through which organizations generate value from their intellectual and knowledge-based assets”, (Levinson, 2013, p. 1). Such assets may be previously gained skills and experiences that are captured and transferred into documents, policies, manuals, and procedures that, in turn, are saved in databases. KM is also defined as an evolving set of strategies, plans, and approaches to create, store, and disseminate knowledge and use other related assets such as people and information to allow knowledge to flow to the right people at the right time so they can apply knowledge effectively to create more value for the organization (Hassan, 2002). KM is the identification and analysis of existing and newly acquired knowledge and its useful utilization through planning and control to develop such knowledge toward achieving value.

The main objective of KM is not knowledge itself but rather the management of the people who possess this knowledge and how to transfer it between and among them. KS is becoming important in decision making. Knowledge sharing unlike transfer is a two-way process

with equal benefits to both involved parties. It is also concerned with creation of an atmosphere or a culture in which there is trust between individuals who are willing to share their knowledge with the aim to contribute to successful performance of the organization. Ideas generate new knowledge the value of which is recognized when utilized. An organization's success is measured by its application of knowledge among its employees (Gomezelj et al., 2011). Thus, KM can be seen as a system that involves analyzing and generating new knowledge, through technologies, and recording and sharing problem-solving techniques and best practices that will improve organization's performance and make them more competitive (Skok & Tahir, 2010). Technologies alone are not effective, and one must consider the cultural factors that are critical to an effective KMS (Kaur et al., 2012). They stress the fact that OC holds the key to a successful KM, and hence, organizations should put more efforts in instituting a proper system to manage it more efficiently and effectively. OC should influence how members learn and share knowledge since it can also impede KM. MacDermott (2001) noticed that culture is perceived as an inhibitor of effective knowledge sharing. OC is also influential in the creation and sharing of tacit knowledge that is affected by the willingness and ability among the staff to share this knowledge.

Wang et al. (2011), Ajmal et al. (2009), and Siakas et al. (2010) showed that OC has a significant effect on knowledge creation. Oliver et al. (2006) identified 10 major factors affecting knowledge culture organizations such as leadership, organizational structure, evangelization, communities of practice, reward system, time allocation, business process, recruitment, infrastructure, and attributes. Sabri (2007) proposed a framework on how to transfer Arab bureaucracies into knowledge-creating cultures. Lopez et al. (2004) studied the impact of OC on KM, organizational learning, and performance. To achieve a successful KMS, it is essential to

have supporting LS with clearly defined roles and responsibilities, structured processes, and an adequate technical system (Milton, 2010). In a study by Campbell (2003), it was shown that sharing knowledge and information enables organizations to market, sell, and service customers more effectively. They concluded from various studies that an OC that places more weight on information sharing, cross-functional teams, performance-based rewards, supportive relationships, and a higher degree of risk-taking and innovation is more likely to success. To create the right conditions for sharing, there must be a visible LS support, strong team leadership, and shared rewards. Leaders should emphasize that knowledge sharing is equally important to the organization as well as the employees. Knowledge sharing also supports them to perform their duties more effectively. Leaders should also be aware of the barriers that hinder KS (Csepregi, 2004).

The following chapter will review the literature and find out the results and conclusions presented in terms of the relationship and the impact of OC and LS on KM and how it influences the effectiveness of knowledge transfer and sharing. It will also find out if any studies had been carried out particularly in the UAE oil and gas companies and to explore the differences and similarities reached among scholars and how this can support the present study.

Chapter 2

Literature Review and Research Questions

2.1 Introduction

The purpose of this chapter is to give a thorough review of the literature in terms of OC, LS, and KM and how these three are interrelated. An attempt will be made to find out how Western culture is affecting the national culture and organizational cultures in the Arab and Muslim world. Furthermore, how the different dimensions of national culture as defined by Hofstede are reflected in this concept. Also to throw light at the impact OC, LS, and KM have on each other and in particular the impact on knowledge transfer and sharing and the consequences the latter have on organizational performance. Brief reference will also be made to the concept behind this study and the tools and instruments used in this field of research. The analysis of the literature review showed that there are different schools of thought regarding the relationship between the four OC types, KM processes, and LSs. It has already been identified that OC, LS, and KM are the most important factors that affect how organizations perform and compete. It is mentioned that KM and knowledge management based on SECI model has a strong and positive relationship with OC and LS.

However, to our knowledge, there are no empirical studies carried out to investigate the effects or the interrelationships between these three parameters on one another. Most of the literature showed studies conducted on the relationship and effects of only two of the above variables on one another and separate processes of the knowledge cycle, leadership characteristics, and organizational culture types, with little reference to knowledge transfer and sharing. However, Cameron and Quinn (2006) mentioned that OC is some combination of the four culture types, and it is not a good idea to separate and study them as if they are independent.

This study aspires to fill this gap in the relevant literature by addressing the following research questions:

- Which are the dominant cultures in ADGAS?
- Which OC types are most effective in supporting KM in ADGAS?
- Which LSs are most effective in supporting KM in ADGAS?
- Is there a positive relationship between OC and LS?
- How is knowledge shared in ADGAS according to the SECI model?

2.2 Literature Review

2.2.1 Organizational Culture

Anthropology has helped in finding more practical applications of culture within the field of organizational research. Organizations differ from one another because each one builds its own culture through history, traditions, and structure. Again, it is noticed that even the types of cultures are identified under different nomenclature, for example, power, role, task, and person's culture. Hofstede (1980) identified five dimensions of culture in his study of national influence. These are (1) power distance, (2) uncertainty avoidance, (3) individualism versus collectivism, (4) masculinity versus femininity, and (5) long- and short-term orientation. Handy (1985) stated that corporate culture is different from OC because it can be imported or adopted such as in a joint venture or foreign staff where individuals will bring in their own independently gained expertise and behavior that will influence the culture of the organization as a whole.

It is only fair to assume the Arab culture for the purpose of the present study. Al Suwaidi (2008) examined and compared the five elements of culture presented by Hofstede. Al Suwaidi pointed out that it is important to understand the concept of *fate* and *time orientation* in the Arab

culture and that management styles are affected by the national culture. According to Hofstede, national cultures with collectivistic values (e.g., Arabs; where the community is knitted into one strong and cohesive entity) have a different influence on OC than cultures with individualistic values.

Western influence in the 20th century and urbanization had a huge effect in modifying the traditional Arab values. The majority of Arabs (95%) are Muslims, and Islam is the major driving force that shapes and governs the way of life, social values, social practices, and legal systems in the Arab world. This collectivistic culture may influence the workplace and creates nepotism, *wasta*, and saving face. However, these are not the teachings of Islam, which encourages group decision making (*shura*) and prohibits *wasta*. The prophet Mohammed (Peace Be upon Him) said, “Whoever appoints an individual upon a group of people and amongst them is someone who pleases Allah more, he has betrayed Allah, the messenger and the believers” (Al Suwaidi, 2008, p. 17). The Quran (Chapter 28 Surat Al Qasas, verse 26) also emphasizes the appointment of competent and trustworthy people, “Truly the best of men for thee to employ is the man who is strong (competent) and faithful.” On the other hand, *wasta* in the Islamic sense is “*Shafaáh*.” According to the Quran (Chapter 4 Surat Al Nisaa, verse 85), “Whosoever intercedes for a good cause will have the reward thereof and whosoever intercedes for an evil will have a share in its burden” (Al Suwaidi, 2008, p. 23). Hence, *wasta* can be a good thing or a bad thing and is generally discouraged in Islam because it can lead to unethical acts and can influence decision making in different ways.

It can be seen clearly that national culture governs people who in turn can influence OC and its decision-making processes. The social connections and the tribal bondage play a definite role when it comes to decision making. In addition, Arab management is highly influenced by

cultural and historical values and reverts to the shura's style, that is, consultative decision making according to Islam. The Quran (Chapter 4 Surat Al Nisaa, verse 29) states that, "Who conduct their affairs by mutual consultation" (Al Suwaidi, 2008, p. 23). The Quran (Chapter 3 Surat Al Imran, verse 159) commands the prophet Mohammed (PBUH) to "forgive them, and pray for them, and consult them in all matters of public concern" (Al Suwaidi, 2008, p. 27). The Arab culture may be private and secretive and should not be looked upon as alien or strange; rather, it should be perceived as a culture with special values of its own right as explained above. Alireza et al. (2013) investigated the relationship between national culture and organizational culture and referred to cultural studies related specifically to Iran. He mentioned that Hofstede's results showed that Iran has a collectivistic dimension and works well in teams and explained that on the bases of Islamic influence. However, the researcher argues that Iranian culture is more inclined toward individualistic dimension. Alireza referred to the study of Zareei-Matin (1995) in which his suggested ideal model for management based on Islamic values crumbled because of the huge gap between OC and the ideal cultural model in government organizations. The investigation concluded that the strict norms in Iran impede many cultural improvements. There is disagreement among scholars and researchers as to whether OC is shaped and developed by leaders or employees. Bass and Aviola (1996) proved that leadership is influenced by culture and that people are shaped and formed by their OC and vice versa. It is claimed that leaders are the driving force behind the creation, management, and even the destruction of OC. Others claim that OC is created by members of the organization. Yet, others looked at the wider cultural values that might influence the OC as argued by Song and Zhu (2003), and quoted by Yu Liu (2013) that under the basis of leadership theory, different OC have different requirement on leadership.

Whittington and Tammy (2009) developed the asymmetric influence model (four quadrants) as shown in Figure 6 below, which examines the relationship between people and culture. The model showed that people in the organization have varying degrees of influence over the culture of the organization and that the organization's culture also influences the people in the organization to varying levels of strength being either positive or negative. In the first quadrant, both people and the OC have the same effect on each other. In the second quadrant, the people have more influence on the culture of the organization. In the third quadrant, it is the organization's culture that influences its people more. While in the fourth quadrant, neither party influences the other.

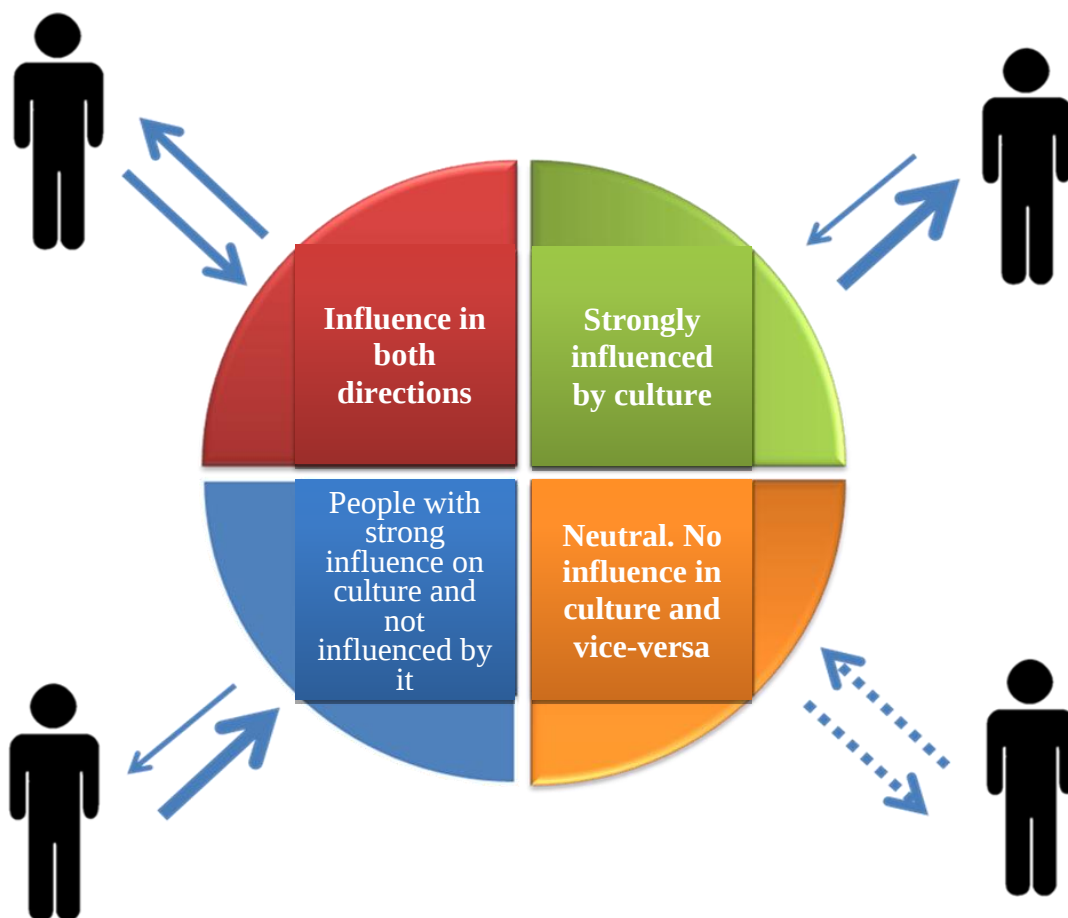


Figure 6 - The Influence of Culture Diagram, Adapted from Whittington and Tammy (2009)

Whittington and Tammy (2009) used the Organizational Culture Inventory (OCI), which looks at culture through four lenses, namely, task, people, basic human needs, and higher career needs. Their study showed that formal organizational leaders have strong influence over the culture, whether they are aware of it or not. Therefore, a strong positive culture will have more or less a positive influence over everyone in the organization and vice versa.

2.2.2 Transformational and Transactional Leadership Styles

The “classic” theory on LS had been expanded linking LSs to personality traits to include many more categories, namely, idealists, mentors, achievers, innovators, synthesizers, partners, cheerleaders, challengers, and diplomats. The literature review on the subject alludes to the role of leaders in creating and maintaining particular type of cultures (Schein, 1992) and that the understanding of the culture is a prerequisite to managerial excellence. For organizational leaders to function effectively, they must find a balance between the eight leader roles as outlined by Ahmed et al. (2009). These roles are director, producer, monitor, coordinator, facilitator, mentor, innovator, and broker; however, they may exist simultaneously but not necessarily receive the same emphasis. The correct leadership style is based on social skills such as perception, persuasion and influence, social adaptability, and emotional intelligence. Many studies have reached a common conclusion that leadership is influenced by OC. Schien (1992) proved this relationship and stated that people are shaped by their organizational culture and vice versa. Song and Zhu (2003), however, argued that under the basis of leadership theory, different OC have different requirement on leadership. It was Burns (1985) who gave a different view and popularized the following two styles of leadership:

- *Transformational leadership* looks at a leader who has a vision built upon the values, hopes, and needs of his team who are encouraged and supported to pursue his vision. A

transformational leader is one who wants to change the world if he can even to a small extent. The vision can also be that of the team members based on their needs and aspiration, which the leader gives form and sets it up as a goal to strive for. He or she has the element of taking care of the team and of task orientation. Transformational leaders work harder than anyone else and strive to achieve the goals. They may also use sharing of power or persuasion to help the team toward its goal.

Transformational leadership inspires and encourages followers to exceed their own self-interest for the good of the organization and increases their confidence and motivation to achieve performance beyond expectations (Polities, 2004). This could lead to the promise of extraordinary individuals and organizational outcomes in the future (Pillai et al., 1999). Transformational leadership can affect the processes and achievements of learning organizations and encourage individuals to work through learning boundaries and to share their learning experience (Nguyen & Mohamed, 2011). Alireza et al. (2013) referred to studies that stated that OC has an effect on management style selection and that SEM analysis showed that transformational leadership has a significant positive influence on effectiveness and on OC.

- *Transactional leadership* on the other hand has a direct and significantly negative impact on organizational effectiveness and a positive impact on OC. Hence, a transformational leader expects the best from everyone in the team as well as from himself, and this leads to high productivity and engagement from everyone in his team. The disadvantage of this style of leadership is that while the enthusiasm is passed onto the team, the leader needs the support of knowledgeable people.

There are two factors on which transactional style of leadership is based as described by Bass in 1981: contingent reward and management by exception. The former provides rewards, materialistic or psychological, for efforts and recognizes good performance whereas the latter allows the leader to maintain the status quo, to intervene when the subordinates do not meet the objectives, and to initiate corrective action to improve performance (Leadership Styles, n.d.). As the name implies, this style of leadership is based on the transactions between leader and followers. The transaction usually involves payment of the employees for their efforts and compliance by the organization. It makes roles and responsibilities very clear to the members of the team and judges the members on their performance, and the leader has the right to punish team members if their work does not meet standards and expectations. Thus, rewards and punishments constitute the basis of this style of leadership.

It is a LS that is based on interaction and exchange of knowledge between the leader and his subordinates (Bass, 1985). It has been shown that transactional leaders motivate and guide their staff toward achieving a set of established goals by defining their roles and tasks and also by dispensing reward (Polities, 2002). Transactional leadership improves the efficiency of learning in the form of values and routines and also provides the organizational staff with a formal system and adequate programs of learning. Companies should involve the most skilled and knowledgeable people in decision making (Nguyen & Mohamed, 2011). It is beneficial when employees have the knowledge, skills, and experience to do their job competently. Chen and Lee (2013) suggested that transactional leadership is in line with economy-oriented culture and that transformational closely matches development-oriented culture. Yao and Jiang (2008) revealed that transactional leaders can achieve higher performance in rule-oriented and goal-

oriented organizational cultures than transformational leaders whereas transformational leaders do better than transactional leaders in innovation-oriented and support-oriented OCs.

2.2.3 LSs Behavior

Benincasa (2012, p. 2) makes reference to Goleman's (2000) article "Leadership That Gets Results" (a landmark 2000 Harvard Business Review Study), in which he studied 3,000 middle-class managers over three years hoping to uncover specific leadership behaviors and measure their effect on the organizational climate (culture) and the impact on performance and profitability. He found out that there are six LSs depending mainly on the characteristic traits of the leader, namely, the pacesetter, the authoritative, the affiliative, the coaching, the coercive, and the democratic leader. Some of these clearly fall under the three major LSs mentioned above but with different interpretations. Two further LSs can be added, namely, visionary and commanding.

Generally, it is accepted that the traits of a good leader consist of honesty (free of deceit, truthful, sincere, with integrity, and bases his actions on reason and moral principles), competence (possesses the ability and knowledge, capable, and efficient), forwardness (has a clear direction and goal for the future and makes the right decisions at the right time), inspiring and imaginative (creative, innovative, and inspires his team with new ideas and better ways to solve problems; confident; and shows both mental and physical endurance), intelligent (able to acquire knowledge and skills and apply them effectively and seeks challenging tasks), fair-minded (treats people equally and fairly and shares other people's feelings, values, interests, and well-being), courageous (acts on his ideas regardless of the obstacles and shows perseverance, resilience, and calmness when under stress) (Leadership Styles. n.d.).

A leader should have and must provide knowledge (Sabri, 2007). Leaders should maintain a knowledge transfer process to enable them to manage knowledge gaps (Martin & Marion, 2005). Knowledge information and knowledge process are a leader's functions (Lakshman, 2009). Transformational and transactional types make effective leaders, which has been addressed by Nguyen and Mohamed (2011) and are explained briefly in the sections below.

Knowledge, skills, and learning must be among the high value targets of a leader and should incorporate building trust and facilitating experiential learning through staff participation. Without knowledge sharing by staff, even when the company has implemented an effective KMS, the system cannot achieve its maximum benefits and provide useful and sufficient knowledge to fulfill user needs (Nguyen & Mohamed, 2011). Leadership plays an important role in making knowledge sharing happen (Kuo, Lai, & Lee, 2011). For example, British Petroleum have identified huge saving in time and cost in their drill operation over the last five years largely due to better use of knowledge gained through effective recording and review prior to commencing with new projects (Milton, 2010). The Discoverer Enterprise oil spill incident in Gulf of Mexico in April 2010 is clear evidence that even with the most advanced KMSs in place, there is room for accidents to take place as initial investigations revealed that information about the problem was there, but it was neither shared nor acted upon (Hong Kong Knowledge Management Society, 2010).

The style of the leader influences his subordinates in a number of ways, such as gaining their trust, maintaining their faith and respect, and demonstrating dedication to his leadership. The leader's behavior should secure his place as a role model and appease to hopes and dreams of his followers. The degree to which leaders provide a vision, use appropriate symbols and

images to help others focus on their work, and try to make others feel their work is significant is measured by inspirational motivations and commitment to the team and their target objectives.

Furthermore, intellectual stimulation shows the degree to which leaders encourage others to be innovative, creative, and analytical in looking at old problems in new ways; create an environment that is open and tolerant of seemingly extreme positions; and nurture people to question their own values and beliefs and those of the organization. Individualized consideration indicates the degree by which leaders show interest in others' well-being, assign projects individually, and pay attention to those who seem less involved in the group (Avolio & Bass, 1995).

Contingent reward is based on a deal struck between the leaders and his followers to perform a certain task and they will be rewarded accordingly (Avolio & Bass, 1995). Management by exception assesses whether leaders tell others the job requirements or are content with standard performance and are believers in "if it is not broken, do not fix it" (Avolio & Bass, 1995). Laissez-faire, on the other hand, is based on what leaders require from the team, is content with the status quo, and gives freedom to the team to do things their own way (Avolio & Bass, 1995).

A leader's repertoire can include all styles of leadership, and he can select and adapt each style to meet the requirements, demands, and challenges facing the organization. Hence, the most effective leaders can select from these styles and implement the one that meets the needs at the moment (Goleman, 2000). In addition to the different styles linked to the personal traits mentioned above, the literature quotes more styles such as coaching, charismatic, task oriented, people oriented/relation oriented, servant, managerial, and collaborative. There are similarities and overlaps between some of these leaders or LSs; for example, autocratic leadership is an

extreme form of transactional leadership, and charismatic leadership resembles transformational leadership.

2.2.4 KM

KM plays an important role in the continuity and sustainability of organizations. It provides opportunities for learning, sharing, and transferring of knowledge, which are necessary in the performance and competitiveness of organization, and can assist innovation processes that can make or break a company (Mullins, 2007). Today's expansion in Internet technologies makes it easy for knowledge to cross organizational boundaries; however, spreading of knowledge from within a corporation may become an issue particularly when such knowledge needs to be kept internal or confidential (Woodill, 2011).

KM is needed because of the fast pace of development the world is seeing today and that almost all jobs are knowledge work based to some degree or another. It is needed to increase peoples' skills and expertise through learning and sharing. It prevents companies from reinventing the wheel, provides a baseline for progress measurement, reduces the burden on experts' attrition, and manages vast amount of information to perform better.

In the Arab context, a firm relationship based on confidence and trust forms the basis for knowledge sharing with individuals within the organization or group (Weir & Hutchings, 2005). Historically, the Arabs are known to share their knowledge by passing it orally from father to son or from generation to generation or among their closely knitted tribal members. Traditionally, Arabs are known to share their knowledge with whom they trust and those who are close to them rather than with strangers (Mohamed et al., 2008). This traditional method for knowledge sharing does not only create a boundary and act as an inhibitor for exchange of knowledge in Arab

organizations, which rely heavily on high proportions of foreign workers, but also makes it somewhat difficult to develop a long-term trusting relationship (Mohamed et al., 2008).

In UAE and the Gulf Cooperative Council (GCC state), there is an overreliance on foreign workers, and this leads to problems, as they are not given permanent contracts and are doubtful of their future, which in turn makes it difficult to share information and to form a long-term relationship based on trust (Skok et al., 2010).

Although KM is in essence the main driving force to optimize performance and competitiveness, it also makes human knowledge more transferable; it still remains a discipline highly dependent on human interactions. Achieving the desired level of knowledge transfer requires exchange of personal know-how, skills, and experience (Forstenlechner et al., 2009). It was also noted that knowledge may be unclear because of the interpretation of those who hold it (Davenport et al., 1998). Furthermore, strong ties are needed for sharing knowledge and experiences; hence, it is essential to ensure good relations among the staff of the organization (Eckenhof & Ersbova, 2011). There is evidence that knowledge sharing behavior is influenced by organizational culture (De Long & Fahey, 2000; Friesl, et al., 2011; Gray & Densten, 2005; Issa & Haddad, 2008). DeLong and Fahey (2000) established horizontal and vertical levels of interaction as different cultural fundamentals influencing knowledge sharing. On the horizontal level, the cultural fundamentals that influence knowledge sharing are the following: 1) volume of interaction, 2) level of collaboration and collective responsibilities, and 3) orientation to seek out expertise knowledge. They pointed out that cultures that reward people for sharing knowledge behaviors create different knowledge sharing patterns than cultures that do not support or promote rewards for such activities. The transfer of knowledge mainly depends on the learning intent, absorptive capacity, and motivation of the recipient of knowledge (Al-Salty et al., 2010).

The stronger the motivation, the more likely it is that the individuals will attempt to master and use both existing and new knowledge. This could be enhanced by external motivation in the form of incentives, such as reward, recognition, and praise.

Nguyen and Mohamed (2011) reported the findings of a study on how KM is influenced by transformational and transactional leadership behaviors and what is the moderating effect of OC on this relationship. They found that there is a positive relationship between both styles of leadership—particularly of charismatic and contingent reward leaders—on KM practices. On the other hand, there is a relationship between LS, OC, and job satisfaction. Leaders sometimes need to adjust their leadership behavior to meet the objectives of the organization, and this could affect the employee's job satisfaction. Both academics and researchers had shown considerable interest in the relationship between leadership, job satisfaction, and OC. Bin Zahari and Al Shurbagi (2012) demonstrated that OC has an impact on the relationship between transformational leadership and job satisfaction, and the relationship is positive. In another paper, the same authors, Al Shurbagi and Bin Zahari (2012), showed that leaders in the National Oil Corporation of Libya follow transformational LS and that the dominant culture is a hierarchical one with a positive relationship between these variables. Daulatram (2003) demonstrated that there is a positive relationship between job satisfaction and both clan and adhocracy cultures and a negative relationship with both market and hierarchy cultures.

There seems to be no clear relationship between LS, OC, and KM. A study by Roper (2009) showed that leadership had no significant impact on culture; however, he found that leaders have the ability to influence the commitment of the employees and that their level of commitment affects the culture of the organization. His article argues that scholars differ on how organizational outcomes are affected. Some believe that the outcome is influenced by leadership

whereas others believe that it is affected by culture. There are stronger claims suggesting that OC and leadership are linked to each other and that both may be influential in determining organizational success. Leaders shape the way people behave and think and are perceived as if their behavior is consistent with the organization's espoused values, beliefs, and philosophies. There is a general agreement on OC as an important enabler for KM. However, none of the studies comprehensively covered the OC while studying its effect on KM (Svetlana & Jucevicius, 2011).

Chapter 3

Theory

3.1 Introduction

The literature covered the subject of OC, LS, and KM extensively; however, linking OC and LS to KM did not receive similar attention. The impact of OC and LS on KM in oil and gas companies in UAE has not been academically studied or researched before. OC, LS, and KM have been identified as the most important factors affecting organizations' performance (Mullins, 2007; Mujtaba, et al., 2011; Zheng, 2005). It was mentioned earlier in Chapter 2 that OC types and LSs have a significant and positive relationship with KM. This chapter will briefly examine the theoretical background in search for results and conclusions presented in terms of the relationship and the impact of OC and LS on KM and how it influences the effectiveness of knowledge transfer and sharing in general. The main objective is to find out if any studies that had been carried out particularly in the UAE oil and gas companies and to pinpoint the gaps and the deficiencies, if any, and to make recommendations to contribute toward improving the existing practices and maintain ADGAS's position as a leading pioneer in the LNG industry.

People do shape culture which is an important contributor to KM. The concept of OC had been rigorously developed and studied over the past decades, and as such should be considered when it comes to conducting research, since it has an impact on the organization as well as the individuals within the organization. According to Schein (1985), among the most difficult attributes to change in an organization is its culture. The different types of culture identified by the competing value framework developed by Cameron and Quinn (2006) are useful when it comes to studying their comparison or effects with or on other organizational factors such as leadership styles and KM system within organizations. Knowledge management, on the other

hand, is composed of different processes that are perceived differently by people and their leaders. The KM process framework indicates how knowledge is created, captured, organized, stored, disseminated, and applied to achieve value, performance, and competitiveness in the market place.

The theoretical structure of this work was based on the CVF, which is used by many researchers in determining different types of organizational cultures, behaviors, and effectiveness. The Organizational Culture Assessment Instrument (OCAI) based on the CVF was also used to diagnose and test the overall profile of the dominant OC types in ADGAS. The assessment of culture stems from the fact that it is crucial to the success of organizations. Knowledge Management Assessment Instrument (KMAI) was used to test the KM variables. The Multifactor Leadership Questionnaire (MLQ) was used to measure the three styles of leadership (Avolio & Bass, 2004). When examining the relationship between OC and KM, there are several theoretical and practical implications to be considered. It was suggested that integrating the CVF with SECI which acts as a theoretical guide may broaden the perception of the social processes that govern organizational effectiveness, such as leadership behaviors that contribute and enhance KM (Kaur et al., 2012). Leaders play an important role in developing KM in particular creating and sharing which have important implications for change and development of organizations.

3.2 The Competing Value Framework

A question is often asked, “What are the components of a company’s culture and how can we know them?” As mentioned above, Tharp (2009) presented a universal list showing 79 major elements with 637 sub elements and to study all of them will be a tremendous and daunting task to achieve; however, the dominant attributes/indicators were identified. He mentioned that

Campbell et al. (1974) and his fellow researchers had identified 39 important indicators that are impractical for organizations to account for. The famous CVF was developed by Quinn and Rohrbaugh (1983) after reviewing many of these indicators, summarized them into two major dimensions focusing on flexibility and control, whereas the second dimension is focusing on internal and external effects, making it easy to account for. “The first dimension places the values of flexibility, direction and dynamism at one end of the scale with stability, order and control on the other end. “The second value dimension is marked by internal orientation, integration and unity at one end of the scale with external orientation, differentiation and rivalry on the other end”, (Tharp, 2009, p. 2). They developed their famous CVF, which consists of two dimensions: one focusing on flexibility and control whereas the other focuses on internal and external effects creating a 2×2 matrix with four clusters.

Cameron and Freeman (1991) presented a framework of OC types by integrating the works of several researchers (e.g., Quinn & McGrath, 1985; Quinn & Rohrbaugh, 1983) among others based on four sets of attributes: (a) the dominant characteristics or values, (b) the dominant style of leadership, (c) the bases for bonding or coupling, and (d) the strategic emphasis present in the organization. Each culture type has its own characteristics made of a set of shared beliefs, style of leadership, values that act as a bond or glue for members, and strategic emphasis in pursuit of effectiveness. Cameron and Quinn (2006) modified the Computing Value Framework (CVF) and categorized OC into four types: clan (collaborate), adhocracy (create), market (compete), and hierarchy (control). Cameron and Quinn (2006) then identified how these quadrants represent the organization’s basic assumptions, beliefs, and values that are termed culture. The CVF categorized OC into four types: clan, adhocracy, market, and hierarchy, as displayed in Figure 7.

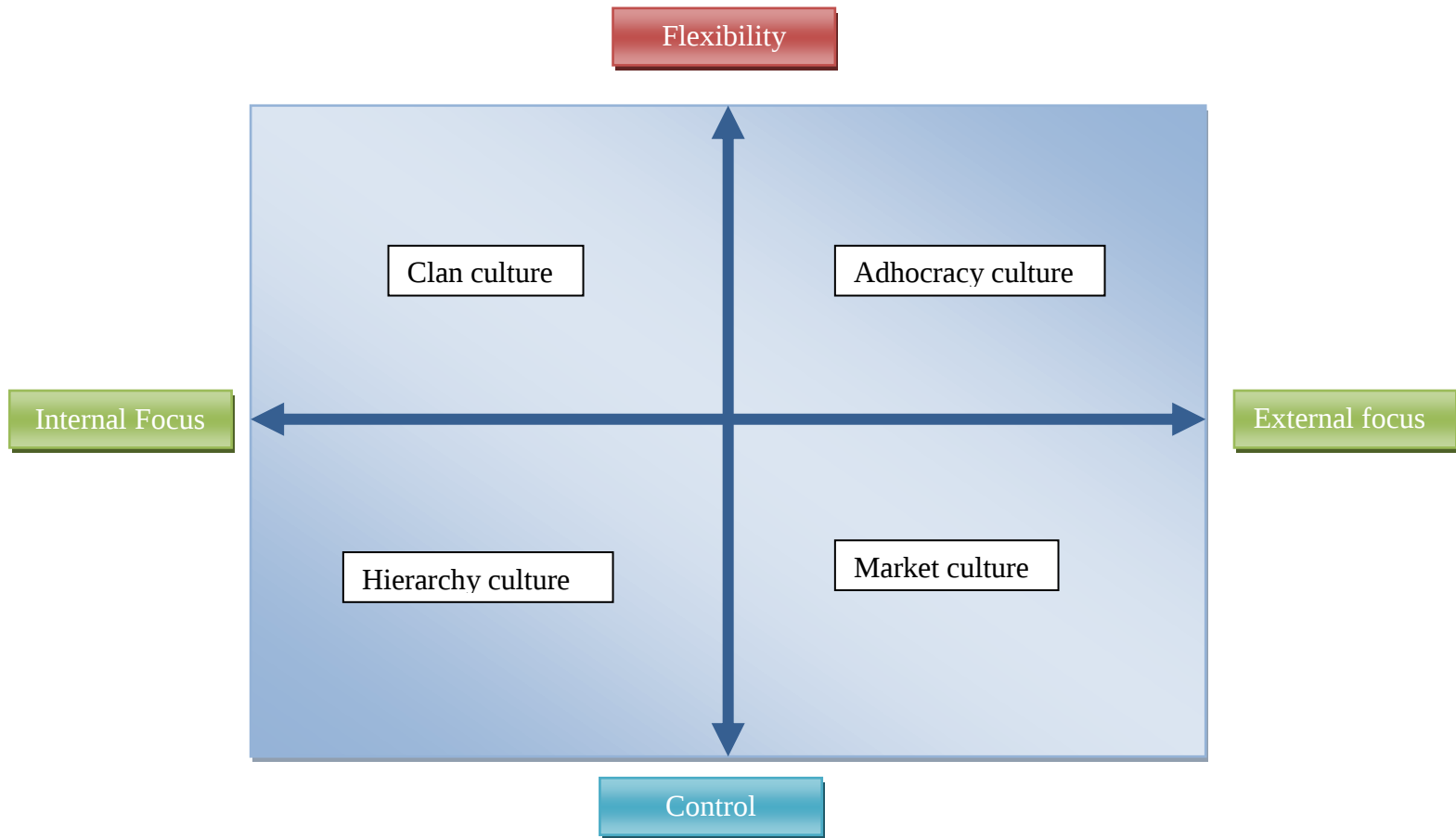


Figure 7 - The Competing Values Framework Model (Adapted from Cameron & Quinn, 2006, P. 35)

The following four types of culture had been explained in detail by Cameron and Quinn (2006), Chin-Loy and Mujtaba (2007), Mujtaba et al. (2011), Rahgozar et al. (2012), and Lawson (2003) and are briefly summarized below.

3.2.1 Clan Culture

The clan culture is a family type that does things together with commitment and loyalty. This culture creates an open and friendly place to work where leaders are considered to be mentors or father figures. It has a strong sense of tradition and group cohesion and places great concern on team development. Clan culture is somewhat similar to hierarchy culture in that there is an inward focus with concern to integration. However, clan culture emphasizes flexibility and discretion rather than the stability and control of the hierarchy and market cultures (Cameron & Quinn, 2006; Chin-Loy & Mujtaba, 2007; Mujtaba et al., 2011; Rahgozar et al., 2012; Lawson, 2003).

3.2.2 Adhocracy Culture

The adhocracy culture places value on creative innovation and allows employees to take risks. It is similar to clan culture except it does not share the inward focus. Instead, it is like market culture in its external focus and concern for differentiation. Such culture is continuously changing, innovative, entrepreneurial, and a creative place to work. Leaders and employees like to take risk, experiment with new ideas, and think outside the box. They like to develop and grow, to acquire new technologies and resources, and to be competitive, successful, and global leaders in their business. Such culture values flexibility and adaptability and encourages individual freedom and initiative (Cameron & Quinn, 2006; Chin-Loy & Mujtaba, 2007; Mujtaba et al., 2011; Rahgozar et al., 2012; Lawson, 2003).

3.2.3 Market Culture

Market culture refers to the type of organization productivity, is result oriented, and is competitive for customers, contractors, and regulators. It is similar to hierarchy culture in that it values stability and control; however, instead of an inward focus, it has an external orientation and favors differentiation over integration. This culture is concerned with relationships or transactions with suppliers, contractors, unions, and so on. People are competitive and goal oriented whereas leaders are demanding, hard-driving, and productive (Cameron & Quinn, 2006; Chin-Loy & Mujtaba, 2007; Mujtaba et al., 2011; Rahgozar et al., 2012; Lawson, 2003).

3.2.4 Hierarchy Culture

Hierarchy culture can be viewed as the traditional bureaucracy, rules, policy, get-the-job-done values, scheduling, and lowering costs. This culture practices stability and controls through rules, standard operating procedures, and specialized job functions. Such culture provides a highly structured and formal place to work where behaviors are regulated. It has efficiently minded leaders who strive to be good organizers and coordinators. Its goal is to maintain stability, performance, and efficient operations (Cameron & Quinn, 2006; Chin-Loy & Mujtaba, 2007; Mujtaba et al., 2011; Rahgozar et al., 2012; Lawson, 2003).

3.3 Knowledge Creating Cycle

An organization with a strong knowledge culture presents the right environment for its employees to be innovative and creative by providing them with means to create knowledge. Figure 8 shows the four ways of creating knowledge in organizations as developed by Nonaka and Toyama (2004). These components of the so-called SECI model are socialization, externalization, combination, and internalization.

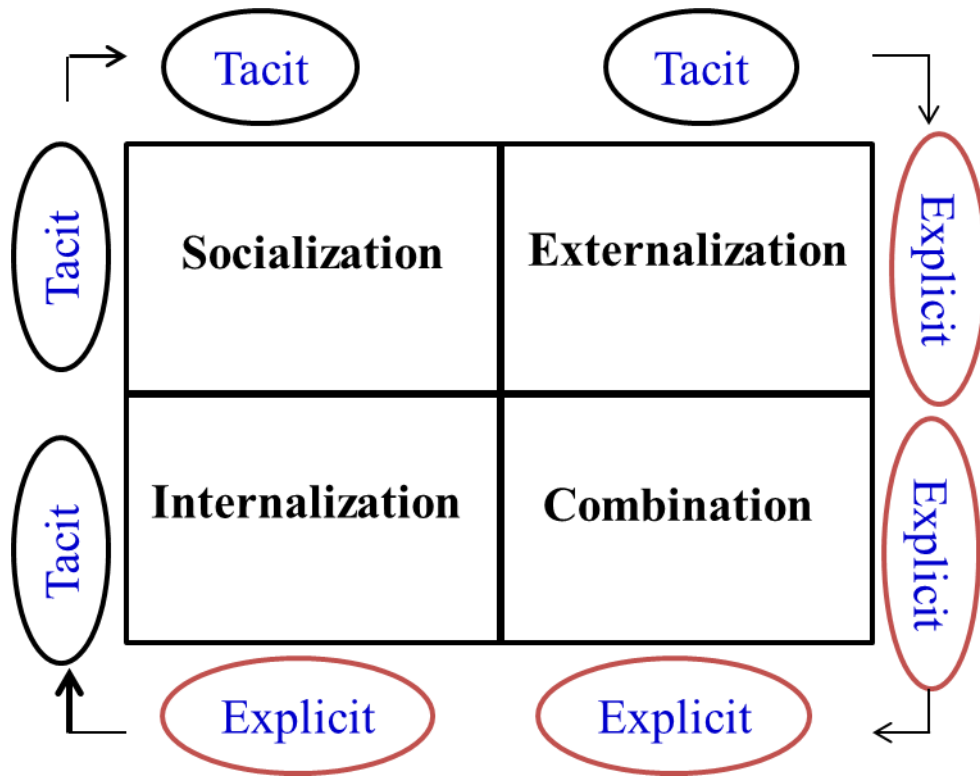


Figure 8 - The SECI Model (Adapted from Nonaka & Toyama, 2004, P. 98)

The creation of knowledge by socialization is when tacit knowledge is shared between individuals creating tasks that require working together and involve observation of other experienced employees. The tacit knowledge received from other employees should be practiced and cannot be converted to explicit knowledge. Creating knowledge by externalization is through interaction between tacit and explicit in such a way that tacit knowledge can be transferred into an explicit way (documented) and can also be easily accessible within the organization. This lies at the heart of knowledge creation. Creating knowledge by combination is when new explicit knowledge is introduced by best practices and lessons learned within the organization to already existing explicit knowledge. Creating knowledge by internalization is when the dissemination of

explicit knowledge shared by employees throughout the organization to increase existing tacit knowledge in the organization (Nonaka, 1994; Nonaka & Takeuchi, 1995).

Lawson (2003, p. 10) stated that the KM creation cycle may be divided into six processes, namely, creation, capture, organization, storage, dissemination, and application. These have been defined according to Rahgozar et al. (2012) and Lawson (2003) as follows:

Creating knowledge: Organizations spend a great deal of money and effort to examine, analyze, and define appropriate knowledge to enhance and create useful new knowledge. This is accomplished by finding new ways of performing new tasks and solving new problems or by seeking new knowledge from outside sources or business partners.

Capturing knowledge: New knowledge must first be identified as relevant and valuable to the current and future needs of the organization. “Capturing new knowledge is vital in today’s fast developing world in order to keep up with the new advancements in almost all fields and to be up to date with the state of the art. Hence capturing new knowledge and applying it, seems to be a logical way which simplifies the process of gaining, storing, extracting and distributing knowledge” (Lawson, 2003, p. 12).

Organizing knowledge: It is important to filter, organize, and store knowledge in such a way that it can be easily accessed and retrieved. It is also essential that the beneficial aspects of such knowledge must be made in relation to the different activities of the organization in terms of products and services. Knowledge must become actionable, continuously reviewed and updated, and kept current and relevant.

Storing knowledge: Knowledge needs to be stored somewhere whether in books, journals, magazines, or in database systems that are easily accessible to those who seek it. With

the fast developments in IT, it has become easy to store and retrieve huge amounts of knowledge that can be instantly accessed and shared through the Internet.

Disseminating knowledge: There should be no restrictions in dissemination of knowledge, and knowledge should be easily accessed by those who need it when they need it. Knowledge should be disseminated and shared in an efficient, responsible, and suitable manner. To make it effective, it must be put in a language and data systems that are easily understood by the users.

Applying knowledge: Knowledge should be applied in a professional and appropriate manner that benefits the user and the community and can also lead to the development of further new knowledge through research, development, critical assessment, and analysis. “When these knowledge processes become an effective part in the corporate strategy, the corporate is said to be actively engaged or managing their knowledge assets” (Lawson, 2003, p. 12).

3.4 Study of the Proposed Theoretical Model

Leaders should trust their subordinates and develop a culture based on ethics and trust that should have an impact on KM and KS as a whole. Simultaneously, this should influence the organizational culture. Each of the leadership styles studied has an impact on both organizational culture types and knowledge management processes. Therefore, the proposed theory is to investigate and determine the extent of such impact. The theory was also structured to through light on which leadership style and organizational culture have the most impact on the six knowledge management processes and the contribution from the four knowledge management cycle on knowledge transfer and sharing in ADGAS. The theory behind the proposed model as

presented in Figure 9 is to link all the variables together including their related processes, from which the proposed hypotheses were developed as presented in Figure 10.

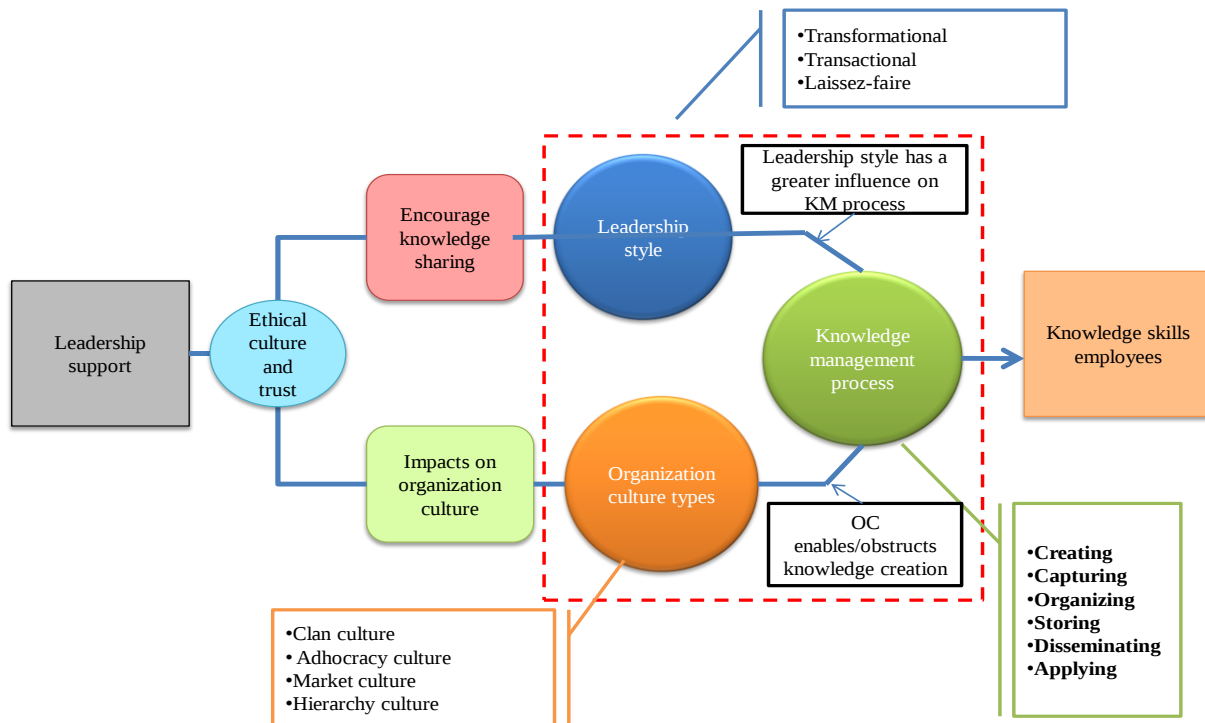


Figure 9 - Study of the Proposed Theoretical Model

3.5 Formulated Hypothesis

The study also attempted to test the proposed hypothesis below; now, the independent and dependent variables had been identified. As mentioned previously, no such relationship had been investigated before, yet, there is evidence in the literature that such a relationship could exist.

There is a general agreement on OC as an important enabler for KM. However, none of the studies comprehensively covered the OC while studying its effect on KM (Svetlana &

Jucevivivus, 2011). Wiewiora et al. (2012) stated that knowledge management and in particular knowledge sharing is influenced by OC. Their study added a wealth of empirical evidence on which culture values contribute more toward improving knowledge sharing behaviors.

The authors quote the studies conducted by Bower and Walker (2007), Kotnour (1999), Schindler and Eppler (2003), and Walker, Wilson, and Srikanathan (2004) to reveal the need for knowledge management sharing in project execution phases. Knowledge sharing within project-based organization is often poor and wasted. To avoid repeating the same mistakes, recent studies had primarily focused on mechanisms such as lessons learned and post-project reviews as the source of knowledge for future projects. It is not only knowledge sharing that is important, but collaborative relationships, as suggested by Ndoni and Elag (2010), are needed to accomplish effective knowledge management and improve project performance as well.

Eckenhof and Ersbova (2011) looked at how OC influences dense intra-organizational networks. As mentioned earlier, OC has an influence on most aspects of people's relationships and their social networking as well as the way individuals or groups of individuals behave, apprehend, and communicate with the external environment. Relative prerequisites or indicators to a positive networking are trust, proximity, and reciprocity as well as which culture types promote the same.

Gomezelj et al. (2011) studied the concept of culture and of KM as well as the correlations between their dimensions. They stated that man had entered the age of knowledge in which experts, professionals, and skilled people have become a thought after commodity essential for our security, prosperity, and social well-being and growth. The important relationship between OC and the implementation and sustainability of KM initiatives had been underscored while recommendations were emphasized for OC to be creative and incorporate

KM, including motivation, ability, performance, education, learning, training, trust, behavior, values, and beliefs. Organizations that are made up of experts need KM where success relies on the creation, use, and uniqueness of knowledge base.

Ahmadi et al. (2012) quoted many researchers who studied the relationship between OC and performance and effectiveness, commitment and job satisfaction, organizational change and organizational learning, and innovation. Furthermore, Mozaffari (2008) set out to find a link between OC and leadership and organizational performance and found that cultures that are dynamic and entrepreneurial, with visionary, innovative, and risk-oriented leaders, are creative and successful organizations.

Borouan et al. (2012) have studied four KM critical success factors, namely, management culture, OC, IT, and KM strategy. Al-Adaileh (2011) has studied four independent variables—trust, collaborative working environment, a shared vision, and managerial perspective. The findings revealed that the four cultural factors proposed in his study have significant direct impact on KM.

Lawson (2003) studied the relationship between OC and KM and found that the four culture types based on competing values framework are not distinctive characteristics. Some companies may have one or two dominating culture types. It is also possible that more mature companies have balance of all the four types. Hence, trying to relate each culture type individually to KM is not practical. In conclusion, the researchers highlighted that the results were not sufficient to predict which culture type would conclusively support KM. Denison et al. (1995) stressed the important roles associated with human relations that have an impact on knowledge management. Lack of association with these roles may be attributed to poor

socialization and externalization of KM that could hinder the transfer of tacit to implicit knowledge. A culture of knowledge hoarding creates obstacles in knowledge sharing.

Michelle et al. (2004) referred to the work of Goodman, Zammuto, and Gliford (2001), in which they studied 276 nurses in different hospitals and concluded that a group-oriented clan culture was positively correlated to with organizational commitment, job involvement, empowerment, and job satisfaction. Berrio (1999) stated that organizations that develop a strong clan culture become a more effective and efficient learning organization. They stated that there is enough evidence from the OC and general CVF studies to support the argument that culture can illuminate critical characteristics of an organization's culture or subculture. Also, that OCs and values are important resources that need to be managed like other resources.

In a family-type business like in China, Japan, Malaysia, Arab states, etc., paternalistic leadership is based on three dimensions: authoritarianism, benevolence, and morality. Research studies on paternalism showed that it is negatively correlated with the other two dimensions as well as with commitment, job satisfaction, loyalty, and trust (Yu Liu, 2013).

Eckenhof and Ersbova (2011) showed that clan culture, with its flexibility, discretion, internal focus, and integration, forms a good basis for the support of a growing intra-organizational network. The characteristic of the leadership in such a culture which is the mentor or the father figure requires the willingness to share information, experience, and best practices with the team.

Ahmadi et al. (2012) proved that there is a positive link between OC and in particularly adhocracy culture and strategy implementation and that flexible cultures facilitate implementation processes. Adhocracy is characterized by a dynamic, entrepreneurial, and

creative workplace, whereas the effective leadership is visionary, innovative, and risk oriented (Mozaffari, 2008).

Wiewiora et al. (2012) showed that in a market culture, there is evidence of hesitancy and resistance to share knowledge contrary to clan culture in which people are open to knowledge sharing. However, they did not explore the other two types of culture. On the other hand, the analysis of Gomezelj et al. (2011) results using Pearson's coefficient indicated that there is a significant correlation between market culture and knowledge storage, knowledge transfer, and knowledge application while there is a significant correlation between clan culture and knowledge transfer and knowledge application. However, they concluded that there is a nonexistent correlation between adhocracy culture and the KM processes.

Kaur (2012) cited Tseng (2012) who explored the impact of hierarchical culture on the effectiveness of knowledge management processes and showed that hierarchical does influence KM and can act as a mediator. It is generally stated that hierarchical culture is suitable for conducting combination and externalization which is beneficial for implementation of KM, unlike socialization and internalization. Sharimllah et al. (2009) found that the six KM processes have a moderate significant correlation coefficient for adhocracy culture. They were in agreement with Cameron (1986) in that an organization with a balanced culture is better than one with a dominant culture. Their study showed that market and adhocracy culture recorded a higher correlation followed by clan culture and hierarchy, respectively. Daulatram (2003) demonstrated that there is a positive relationship between job satisfaction and both clan and adhocracy cultures and a negative relationship with both market and hierarchy cultures. Hence, trying to relate each culture type individually to KM is not practical. In conclusion, the

researchers highlighted that the results were not sufficient to predict which culture type would conclusively support KM.

Crawford (2003) investigated the relationship between transformational, transactional, and laissez-faire leadership and KM. His results provided substantial support that KM and follower-centered leadership are strongly related with each other. He showed through his regression analysis that there is a strong relationship between transformational leadership and KM behaviors. Another interesting finding of his study deals with the relationship between transactional leadership and KM. He pointed out that effective managers need to adopt transactional strategies that are more centered toward goal attainment. He also found that there is a significant correlation between KM and contingent reward and a significant negative correlation with management by exception. Finally, his study concluded that KM was a strong negative predictor of laissez-faire leadership, which provided a basis for the assumption that KM is more related to active follower-centered leadership.

Kaur et al. (2012) integrated KM theory with the CVF to try to understand how OC drives or enhances the development of organizational knowledge. Their approach was used to help understand the managerial leadership behavior that facilitates KM. Nguyen and Mohamed (2011) reported the findings of a study on how KM is influenced by transformational and transactional leadership behaviors and what is the moderating effect of OC on this relationship. They found that there is a positive relationship between both styles of leadership—particularly of charismatic and contingent reward leaders—on KM practices. Shockley (2000), O’Connell (1999), Todd (1999), Katz, (1998), and Rowley (2000) described KM as the collective knowledge of an organization and that is an integrated approach to identify, manage, share, and

utilize knowledge with an effort to decipher tacit knowledge into explicit knowledge. Shockley and others stressed that to successfully implement knowledge management, it is important to have positive and effective leadership characteristics. It was concluded that a considerate leadership style could be more supportive toward the implementation of KM than a competitive leadership style. Their study showed that demographically, there were significant differences in the perception of KM, with male and middle-age showing a more positive perception than female and younger people; nevertheless, there was evidence of significant direct effect of leadership on knowledge management.

There seems to be no clear relationship between LS, OC, and KM. A study by Roper (2009) showed that leadership had no significant impact on culture; however, he found that leaders have the ability to influence the commitment of the employees and that their level of commitment affects the culture of the organization. His article argues that scholars differ on how organizational outcomes are affected. Some believe that the outcome is influenced by leadership whereas others believe that it is affected by culture. There are stronger claims suggesting that OC and leadership are linked to each other and that both may be influential in determining organizational success. Leaders shape the way people behave and think and are perceived as if their behavior is consistent with the organization's espoused values, beliefs, and philosophies. There is general agreement on OC as an important enabler for KM. However, none of the studies comprehensively covered the OC while studying its effect on KM (Svetlana & Jucevicius, 2011). Many studies surveyed indicated the idea that leaders need to adopt all four cultures and managerial styles depending on the current operation requirements and objectives of their organization. Leaders are considered to be effective when they show ability to handle different situations demanding competing roles. Leaders need to promote a dynamic cultural environment

to emphasize trust and loyalty, personal involvement and teamwork, cohesion, empowerment, and commitment (Hamidifar, 2012). Furthermore, Ahmed et al. (2009) studied OC and its relation to development indicators and revealed that most of the development indicators are associated with clan, market, and adhocracy cultures. Clan culture was characterized by respecting traditions, morals, and sense of family orientation associated with competitiveness and excellence.

Chang and Lee (2007) pointed out that acquisition and diffusion of knowledge are significantly affected by innovative and supportive culture, whereas Al-Khalifa and Aspinwall (2001) investigated the degree of compatibility of the Arab culture in the industrial sector in Qatar and found that a mix of two cultures characterized many organizations. On the other hand, there is a relationship between LS, OC, and job satisfaction. Leaders sometimes have to adjust their leadership behavior to meet the objectives of the organization, and this could affect the employee's job satisfaction. Both academics and researchers had shown considerable interest in the relationship between leadership, job satisfaction, and OC. Bin Zahari and Al Shurbagi (2012) demonstrated that OC has an impact on the relationship between transformational leadership and job satisfaction, and the relationship is positive. In another paper, the same authors, Al Shurbagi and Bin Zahari (2012), showed that leaders in the National Oil Corporation of Libya follow transformational LS and that the dominant culture is a hierarchical one with a positive relationship between these variables.

Based on the literature discussion above, the following hypotheses were formulated:

Group 1 National/UAE Local Culture:

H1: Clan Culture has a significant effect on KM.

H6: Transactional leadership has a significant effect on KM.

H8: Leadership has a significant effect with OC.

Group 2 Expatriate/Western Culture:

H2: Adhocracy culture has a significant effect on KM.

H3: Market culture has a significant effect on KM.

H5: Transformational leadership has a significant effect on KM.

Group 3 Industry Based/Oil and Gas Culture:

H4: Hierarchy Culture has a significant effect on KM.

H7: Passive avoidant leadership has a significant effect on KM.

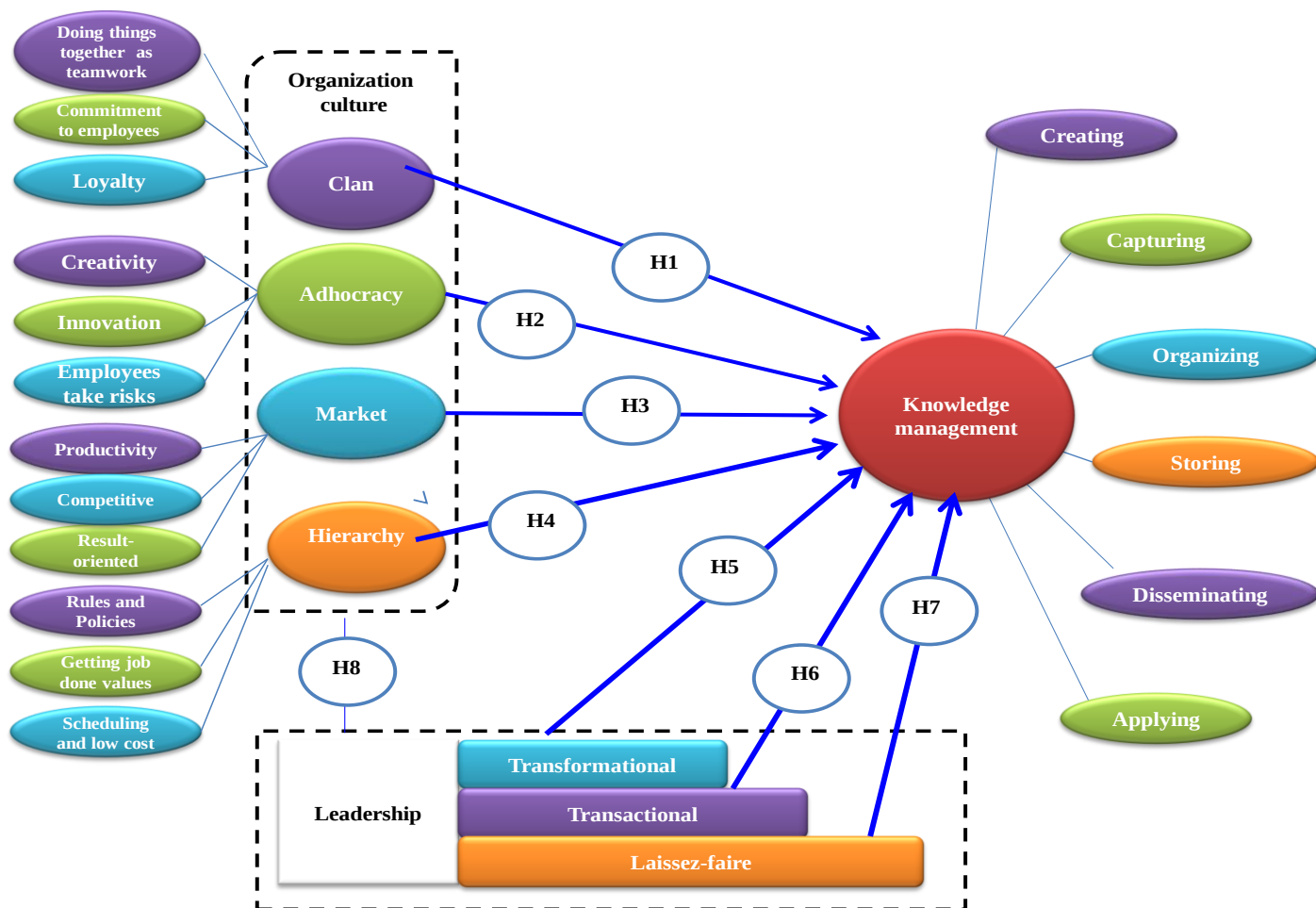


Figure 10 – Hypotheses Development

Chapter 4

Data and Methodology

4.1 Introduction

This chapter will discuss the data collected and their analysis and interpretation in a similar fashion to that used by a few of the researchers referred to in this study. It will also attempt to explain the findings and make comparisons with those reported in the literature. A further detailed explanation to the brief description of the tools and software used to handle the data collected from the questionnaire will be given here. The Organizational Culture Assessment Instrument (OCAI), developed by Cameron and Quinn (2006), was used to test OC types, which contained 24 elements grouped into six parts whereas the Knowledge Management Assessment Instrument (KMAI), developed by Lawson (2003), was used to test the KM variables, each of this contained 24 elements. The Multifactor Leadership Questionnaire (MLQ) was used to measure the three styles of leadership (Avolio & Bass, 2004), and it contains 36 elements. All the three instruments were answered on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

The results will be used to identify any need for further data gathering and provide a ground for formulating issues or areas of concern. It is anticipated that such issues can form the basis for a series of recommendations to facilitate and improve knowledge transfer resulting in a more efficient and effective personnel development process. The data presented in this chapter will be analyzed and discussed in more detail below. Furthermore, an attempt will be made to evaluate the significant findings from this research and how these findings will be used to

improve the KMS in AG and formulate recommendations for further research to clarify gaps found if any.

The CVF developed by Cameron and Quinn (2006), which is one of the most elaborate and comprehensive tools employed in many empirical studies, was used to identify the OC types. The relationship between OC types, LSs, and the combined dimensions of KM was assessed using the OCAI, KMAI, and MLQ tools/instruments. The OC was considered in the most comprehensive manner covering four culture types, namely, clan (collaborate), adhocracy (create), market (compete), and hierarchy (control). The three LSs considered were transformational, transactional, and passive avoidance (*laissez-faire*). Furthermore, for KM, the six knowledge processes, namely, knowledge creation, knowledge capture, knowledge storage, knowledge organization, knowledge application, and knowledge dissemination, were considered. The scope of this study was limited to senior and middle management and technical and support staff from six divisions, namely, operations, maintenance, engineering, HR, IT, and finance after permission from ADGAS (see appendix 1). It is intended to collect comparative data from different divisions and from the male and female population of employees.

4.2 Research Design

The literature survey showed that most researchers and studies in this field only considered one independent variable at a time and never the two independent variables together as in the present study. That is to say that for the first time, OC and LS will be studied in relation to KM. The current research proposes to study KM as a dependent variable whereas OC and LS are taken as independent variables. The designed model was built on the need to find out such a relationship between these variables. Hence, the proposed model shown in Figures 11 and 12

below was devised to cater for both dependent and independent variables and their related dimensions.

Independent Variables

The two independent variables used are OC and LSs.

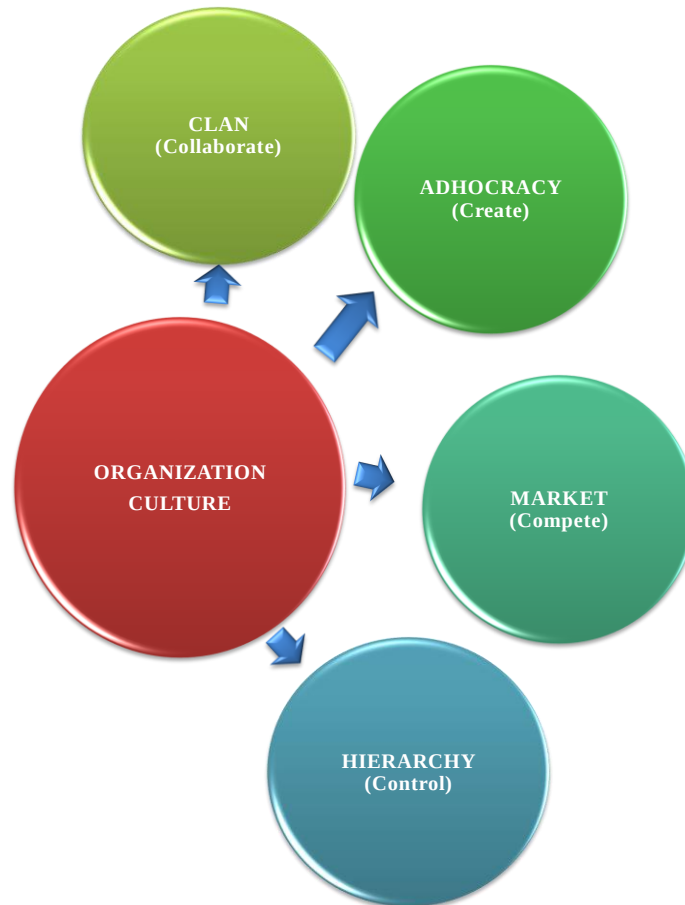


Figure 11 - The Four Organizational Culture Types (As Identified by Cameron & Quinn, 2006)

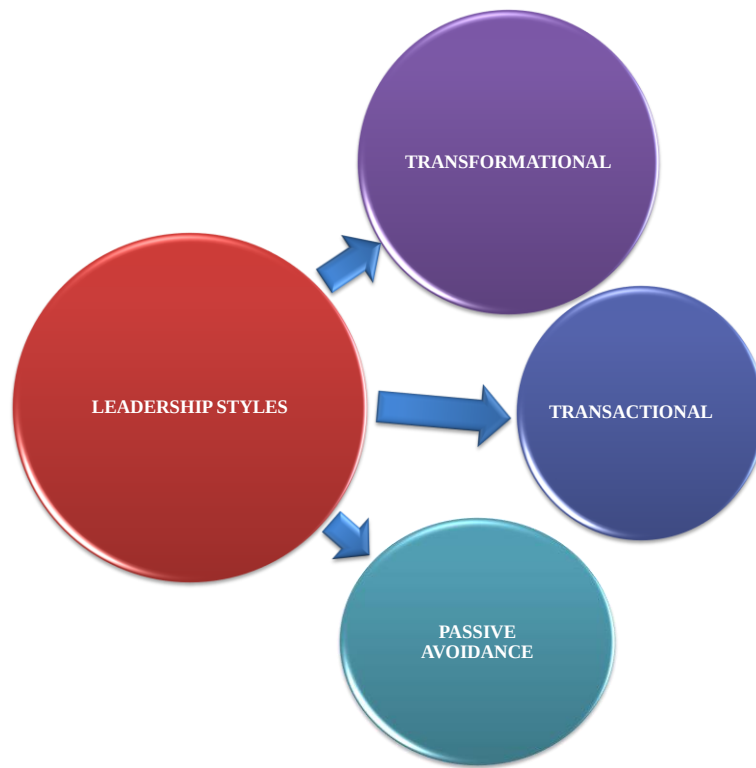


Figure 12 - The Three Types of Leadership Styles (As Identified by Avolio & Bass, 2004)

The LSs contained the following dimensions: transformational leadership (idealized influence attributes, idealized influence behavior, inspirational motivation, intellectual stimulation, individual consideration), transactional leadership (contingent reward and management by exception-active), and passive avoidance (management by exception-passive, and laissez-faire).

4.2.1 Dependent Variable

The dependent variable used is KM with the six processes as identified by Lawson (2003), which are shown in Figure 13 below. The participants were asked to describe how the LSs and organization would influence KM in their (divisions) in terms of implementation and

sharing of knowledge and how this is further affected by their senior management and their direct leaders.

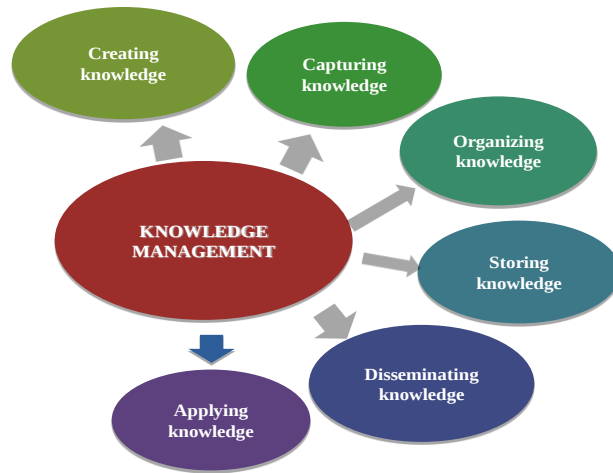


Figure 13 - The Six Processes of Knowledge Management (As Identified by Lawson, 2003)

4.3 Research Instruments

In order to answer the research questions and to address the hypotheses mentioned in Chapters 2 and 3, respectively, a theory was postulated and a methodology was adopted to generate data to examine how the four types of OC and the inherent LSs might affect the KM process in AG. To achieve this aim, a survey questionnaire was used as the main research instrument after obtaining permission from institutional review board (IRB) (see appendix 2). The survey questionnaire used has three main characteristics. First, OCAI was adopted after permission from Cameron and Quinn (2006) and Lawson (2003) to test the OC independent variables. It has been designed with six key dimensions, namely, dominant characteristics,

organization leadership, management, organization glue, strategic emphasis, and criteria for success. Second, KMAI was adopted after permission from Chin-Loy and Mujtaba (2007) and Lawson (2003) to test the KM dependent variables with its six processes. Third, the MLQ by Avolio and Bass (2004) with license from the Internet was used to test the second independent variable to measure leadership as transformational, transactional, and laissez-faire. The validity and reliability of the survey questionnaires were tested during the pilot test. The survey was carried out using Survey Monkey (Web-based survey). The research participants were asked to describe the culture, LS, and KM that exist in their divisions within the AG organization. For further details regarding these research instruments, see Appendixes 1, 3, and 4.

4.4 Data Collection

In this study, a variety of data capture approaches were used, such as the survey questionnaire, using Monkey Survey

The survey questionnaire was sent out by e-mail to 500 participants explaining the nature of the survey and its purpose. The survey questionnaires were distributed to senior and middle management and technical and support staff from six divisions (operations, maintenance, engineering, HR, IT, and finance). A correctly completed 486 responses were received and were considered for this study. The data collected were used to test the hypothesis using the correlation and regression factors for OC types, LS, and KM and also to find out if there are different cultures within the six divisions of AG organization and how these cultures together with the LSs present within the divisions influence KM and its six processes. The SPSS software was used to conduct a variety of statistical analysis on the data collected, for example, descriptive statistics, to measure the demographic and general variable's distribution. The

average, standard deviation, percentage, and the correlation coefficient of the 13 variables in the proposed model were computed. The analysis of variance (ANOVA) and least significant differences (LSD) were used to test the relationships between the main variables of the study. NLPCA was also applied to check the reliability of the data. The research model was also tested using a linear structural equation modeling (SEM), as discussed below. Such analysis involved looking for results to support or refute the stated hypotheses in Chapter 3.

4.5 Data Analysis and Results

The majority of respondents (Table 1) were males (90.5%), and 27.2% of the respondents' age ranged from 21 to 30 years whereas expats made 50.2% of the surveyed population. Staff with less than five years of experience was 42.4%. The majority of respondents were from operations division (OD), with 28.2%. Regarding the question about the existence and implementation of a KM program within the organization, 64.8% replied affirmatively.

Table 1- Distribution of Demographic and General Variables

Variable	Category	Frequency	%
Gender	Male	440	90.5
	Female	46	9.5
Age	20 or younger	8	1.6
	21–30	132	27.2
	31–40	127	26.1
	41–50	106	21.8
	51 and above	113	23.3

Nationality	UAE	242	49.8
	Expats	244	50.2
Division	Engineering	66	13.6
	Finance	34	7.0
	Human resource	101	20.8
	IT	39	8.0
	Operations	137	28.2
	Maintenance	109	22.4
Experiences	1–5 years	206	42.4
	6–10 years	92	18.9
	10–20 years	99	20.4
	20+ years	89	18.3
My organization has a knowledge management program in place.	Yes	315	64.8
	No	46	9.5
	Unsure	125	25.7

4.5.1 Reliability and Data Reduction

In the first stage of data analysis, the researcher used the NLPCA, which is also known as categorical principal components analysis with optimal scaling. The NLPCA method is used for dimension reduction problems when the items are of ordinal scale (Ferrari & Manzi, 2010). The NLPCA was performed on the data set, and each item with component loading less than .4 suggests an existence of some problems with the corresponding item; therefore, such item was excluded from the analysis (Table 2).

Table 2 - Model Factors, % Variance, Cronbach's Alpha, and Component Loading Range

Dimension	Number of Items	Number of Removed Items	% of Variance	Cronbach's Alpha	Component Loading Range
Clan	6	0	61.53%	.874	.712–.820
Adhocracy	6	0	61.17%	.871	.738–.835
Market	6	0	53.70%	.819	.485–.822
Hierarchy	6	0	57.34%	.847	.631–.830
Org. culture—overall	24	0	46.48%	.952	.401–.805
Knowledge creating	4	0	68.78%	.848	.811–.846
Knowledge capturing	4	0	71.31%	.865	.822–.877
Knowledge organizing	4	0	76.35%	.895	.836–.898
Knowledge storing	4	0	67.07%	.833	.753–.848
Knowledge disseminating	4	0	63.97%	.810	.751–.820
Knowledge applying	4	0	70.02%	.855	.793–.881
Knowledge—overall	24	0	54.91%	.964	.616–.832
Transformational leadership	20	0	47.04%	.930	.459–.788
Transactional leadership	8	0	43.37%	.809	.496–.768
Passive leadership	8	0	61.16%	.909	.618–.861
Leadership—overall	36	0	33.69%	.922	.434–.788
Model—overall	84	0	36.29%	.974	.452–.758

It can be noted that none of the proposed items within the questionnaire were excluded from the analysis, which means the questionnaire design was based on a very strong theory, and it was found applicable to the UAE culture. Moreover, almost all items had the same component loadings sign, which indicated that the measure fits well with the data as shown in the biplots in Figures 14 to 17. Based on the reliability analysis, it was clearly shown that the questionnaire had a very good internal consistency and reliability with Cronbach's alpha coefficients that ranged from .81 (knowledge disseminating) to .93 (transformational leadership) as shown in Table 2 above. Therefore, all dimensions will be considered in all further analysis in this study. The Cronbach's alpha values were compared with previous results obtained by researchers such as Lawson (2003), Chin-Loy and Mujtaba (2007), Schimmoller (2010), and Bin Zahari and

Shurbagi (2012), who used the same questionnaire and found that there is a good agreement with their computed values. The biplots given in Figures 14 to 17 indicate that there is an interrelationship through the component loading between the dimensions of the factors suggested in the proposed models.

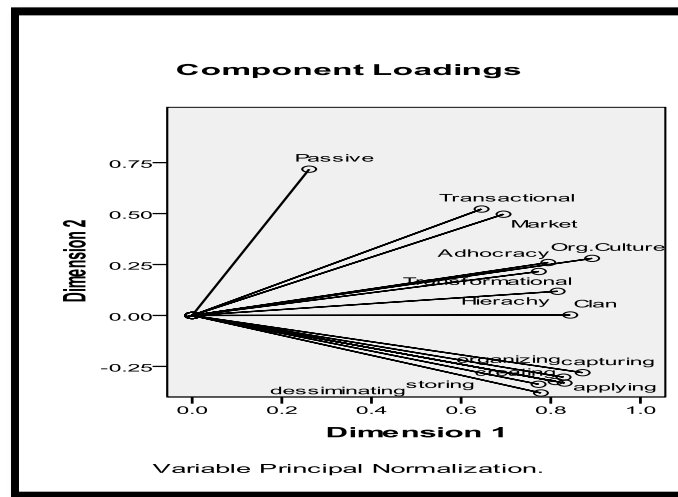


Figure 14 - Interrelationship through the “Component Loading” between the Dimensions of the Factors suggested in the Proposed Models

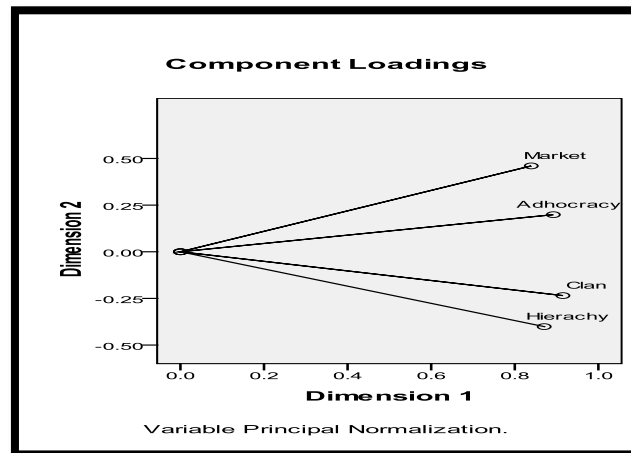


Figure 15 - The Organization Culture Types Indicate the Interrelation through the Component Loading between the Dimensions of the Two Factors suggested in the Proposed Models

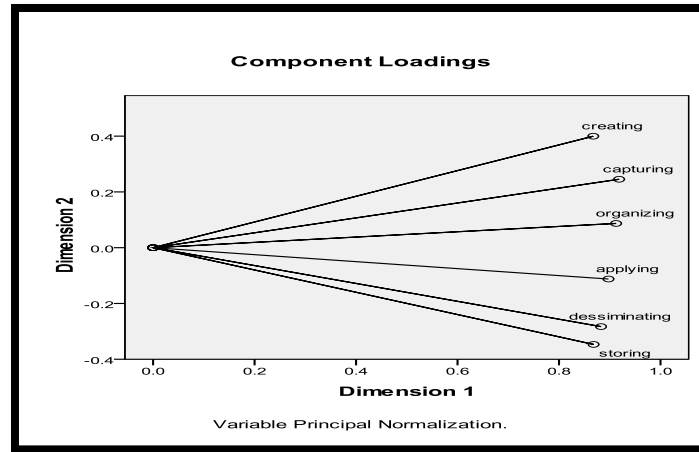


Figure 16 - Knowledge Management Process Indicates the Interrelation through the Component Loading between the Dimensions of the Two Factors suggested in the Proposed Models

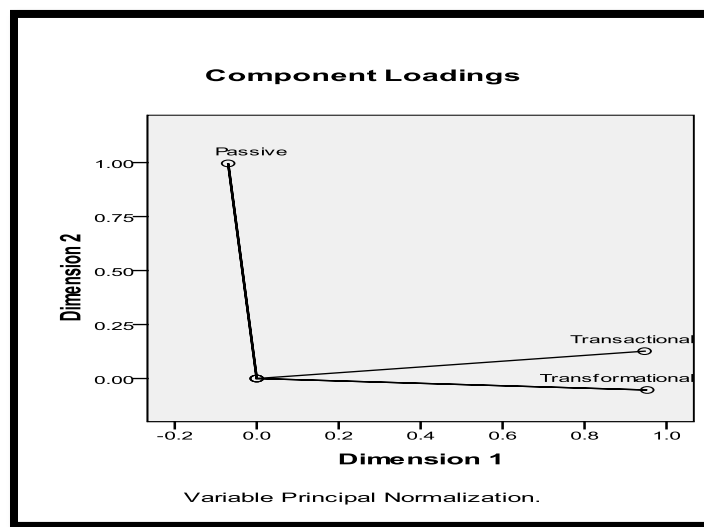


Figure 17 - Leadership Style Indicates the Interrelation through the Component Loading between the Dimensions of the Two Factors suggested in the Proposed Models

4.5.2 Structural Equation Modeling

The research model (Figure 10) was tested using a linear SEM with latent variables, which is well suited to highly complex predictive models (Joreskog, 1973). SEM analyses were

performed using a covariance matrix as input to the Analysis of Moment Structure (AMOS) software package (Arbuckle & Wothke, 2003), using maximum likelihood estimation. Any missing data would be replaced by using the expectation maximization (EM) approach prior to analysis; however, in the present study, there were no missing data. The mean average, standard deviation, and the correlation coefficient of the 13 variables in the proposed model were computed and tabulated in Tables 3 to 6.

Table 3 - Descriptive Statistics and Correlation Matrix of Structural Variable

	M	SD	Culture	Leadership	Knowledge
Culture	3.5729	.57718	1		
Leadership	3.2853	.46018	.579**	1	
Knowledge	3.6063	.63092	.785**	.519**	1

**Correlation is significant at the .01 level.

Table 4 - Descriptive Statistics and Correlation Matrix of Organization Culture

	M	SD	Clan	Adhocracy	Market	Hierarchy
Clan	3.6625	.68739	1			
Adhocracy	3.3535	.68839	.754**	1		
Market	3.5188	.60140	.754**	.818**	1	
Hierarchy	3.7569	.56586	.840**	.675**	.747**	1

**Correlation is significant at the .01 level.

Table 5 - Descriptive Statistics and Correlation Matrix of Organization Knowledge

Knowledge	M	SD	Creating	Capturing	Organizing	Storing	Disseminating	Applying
Creating	3.7328	.68847	1					
Capturing	3.6969	.65501	.823**	1				
Organizing	3.6085	.69372	.755**	.852**	1			
Storing	3.5906	.66288	.625**	.745**	.750**	1		
Disseminating	3.5546	.72429	.677**	.713**	.717**	.785**	1	
Applying	3.5292	.68121	.678**	.746**	.779**	.747**	.767**	1

**Correlation is significant at the .01 level.

Table 6 - Descriptive Statistics and Correlation Matrix of Leadership Style

	M	SD	Transformational	Transactional	Passive
Transformational (1)	3.5346	.55591	1		
Transactional (2)	3.5012	.55478	.849**	1	
Passive	2.8200	.77209	.023	.174**	1

**Correlation is significant at the .01 level.

Testing the proposed linear structural model (Figure 10), the chi-square for the model was significant ($\chi^2(21) = 5.357; p < .001$). The statistical fit indices are the goodness-of-fit index (GFI), which was devised by Joreskog and Sorbom (1989), and the standardized root mean square residual (SRMR) (GFI = 0.837 and SRMR = 0.020), which indicated an acceptable model. Other fit indices were computed: The Bentler and Bonett (1980) normed fit index (NFI = 0.915) and the comparative fit index (CFI = 0.929) (Bentler, 1990). Moreover, the root mean square error approximation (RMSEA) was found to be 0.121; these values indicated that a fit index value of more than 0.90 represented a good fit of the model. Based on the SEM model data analysis (Table 7), there is a positive significant effect of LS on OC ($\beta = .349, p = .000$). There is a positive significant effect of transformational leadership on KM ($\beta = .333, p = .000$), and there is a positive significant effect of transactional leadership on KM ($\beta = .173, p = .000$). Moreover, each of the OC types has a significant effect on KM; for instance, there is a positive significant effect of organization hierarchy culture on KM ($\beta = .349, p = .000$), there is a positive significant effect of organization clan culture on KM ($\beta = .179, p = .000$), and there is a positive significant effect of organization market culture on KM ($\beta = .105, p = .005$).

Table 7 - SEM Model Data Analysis

Endogenous Variable		Hypothesis	Exogenous Variable	Standardized Estimate	SE	CR	P
Knowledge management	←	H1	Clan	.178	.026	4.756	.000
	←	H2	Adhocracy	.049	.030	1.310	.190
	←	H3	Market	.105	.031	2.821	.005
	←	H4	Hierarchy	.349	.026	9.351	.000
	←	H5	Transformational	.333	.033	8.902	.000
	←	H6	Transactional	.173	.033	4.622	.000
	←	H7	Passive	-.122	.023	-3.261	.001
OC	←	H8	LS	.349	.057	12.58	.000

Based on the SEM model data analysis (Table 7), it was possible to answer the eight hypotheses addressed in this dissertation as presented in the following Figures 18, 19, 20 and 21.

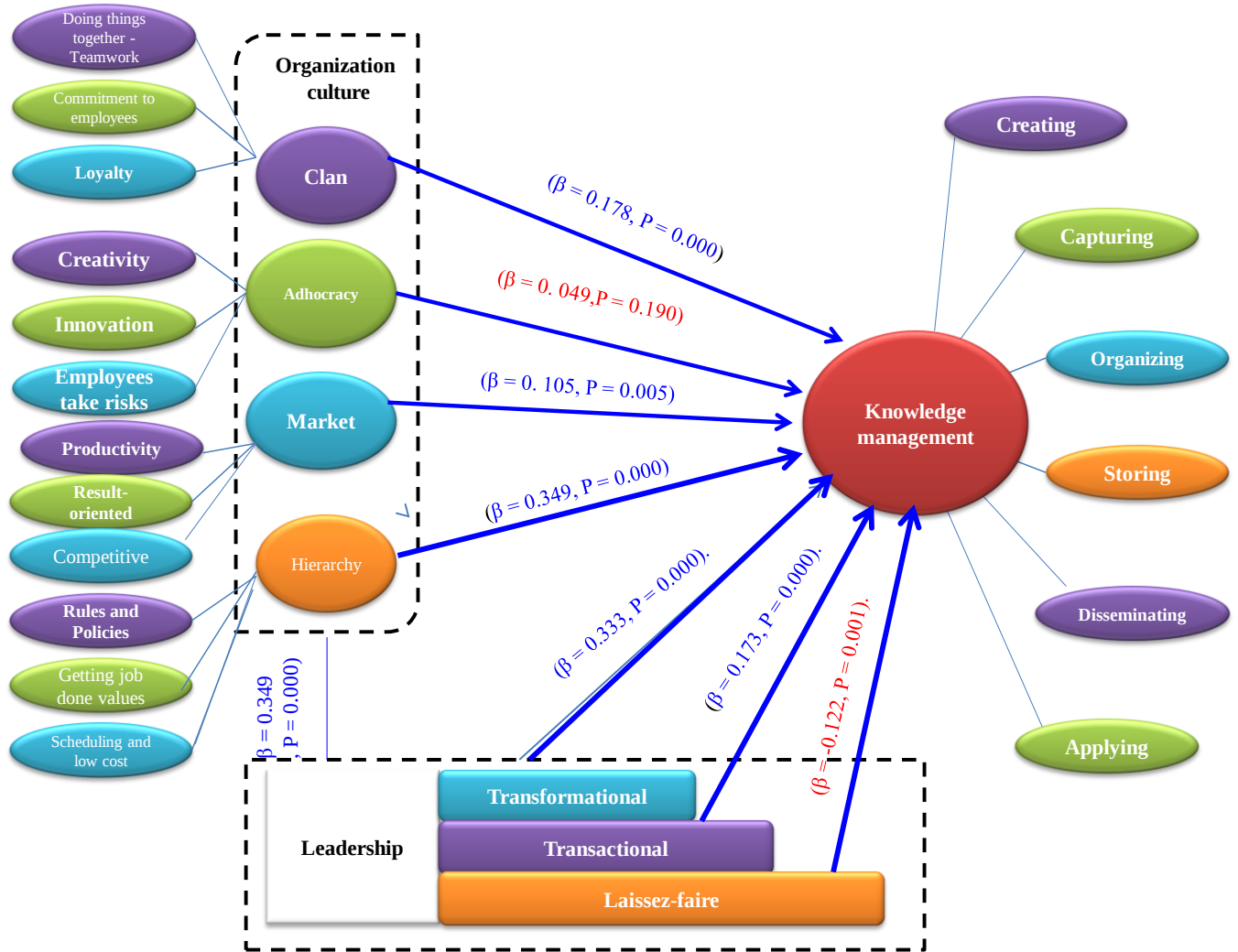


Figure 18 - Results of the Eight Hypotheses tests using SEM

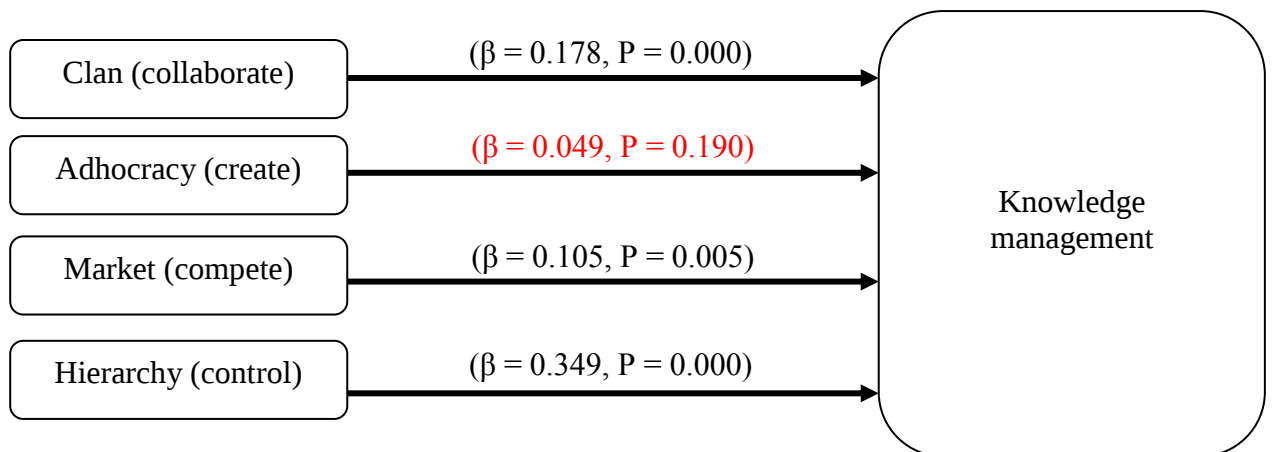


Figure 19 - Relationships between Organizational Culture and Knowledge Management

H1: There is a significant effect of clan on KM ($\beta = .178, p = .000$).

H2: There is a significant effect of adhocracy on KM ($\beta = .049, p = .190$).

H3: There is no significant effect of market on KM ($\beta = .105, p = .000$).

H4: There is a significant effect of hierarchy on KM ($\beta = .349, p = .005$).

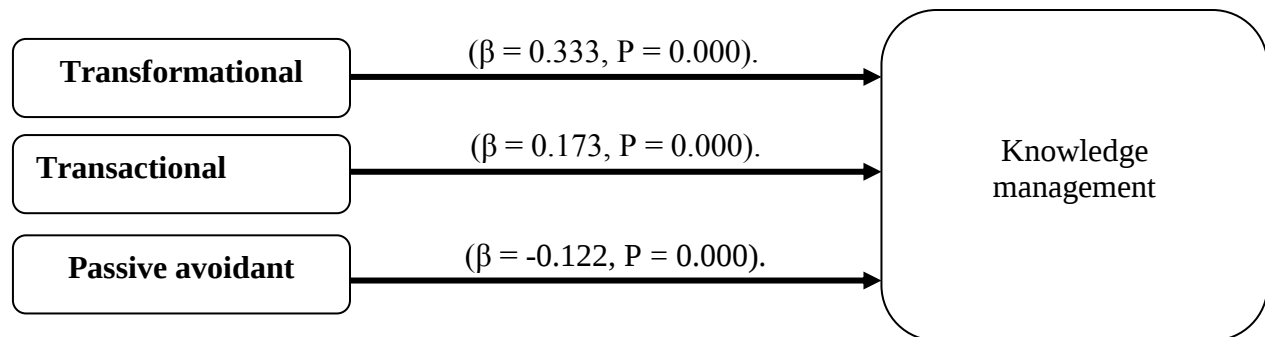


Figure 20 - Relationships between Leadership Style and Knowledge Management

H5: There is a significant effect of transformational leadership on KM ($\beta = .333, p = 0.000$).

H6: There is a significant effect of transactional leadership on KM ($\beta = .173, p = .000$).

H7: There is a negative significant effect of passive leadership on KM ($\beta = -.122, p = .000$).

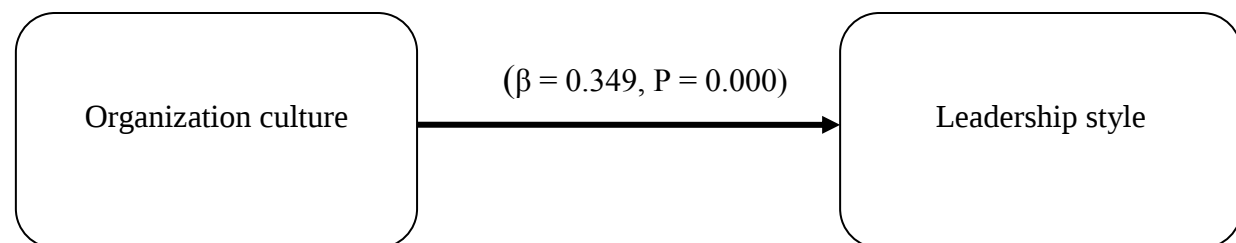


Figure 21 - Relationships between Leadership Style and Organizational Culture

H8: There is a positive significant effect of leadership on culture ($\beta = .349, p = .000$).

4.6 Division Comparisons

Since data were collected from different AG divisions, it was only imperative to explore if there were significant differences between the participants in terms of the different variables studied using one-way ANOVA in Table 8. It was noted that at .05 levels, there were no significant differences between participants' divisions regarding OC or in their LSs. However, there were significant differences in the KM, $F(5, 328) = 2.486, p = .031$.

Table 8 - Comparison of Knowledge Management, Leadership Styles, and Organization Culture

ANOVA						
		Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Significance
Org. culture	Between groups	3.038	5	.608	1.845	.103
	Within groups	117.889	358	.329		
	Total	120.928	363			
Leadership	Between groups	2.125	5	.425	2.040	.073
	Within groups	64.581	310	.208		
	Total	66.706	315			
KM	Between groups	4.841	5	.968	2.486	.031
	Within groups	127.714	328	.389		
	Total	132.555	333			

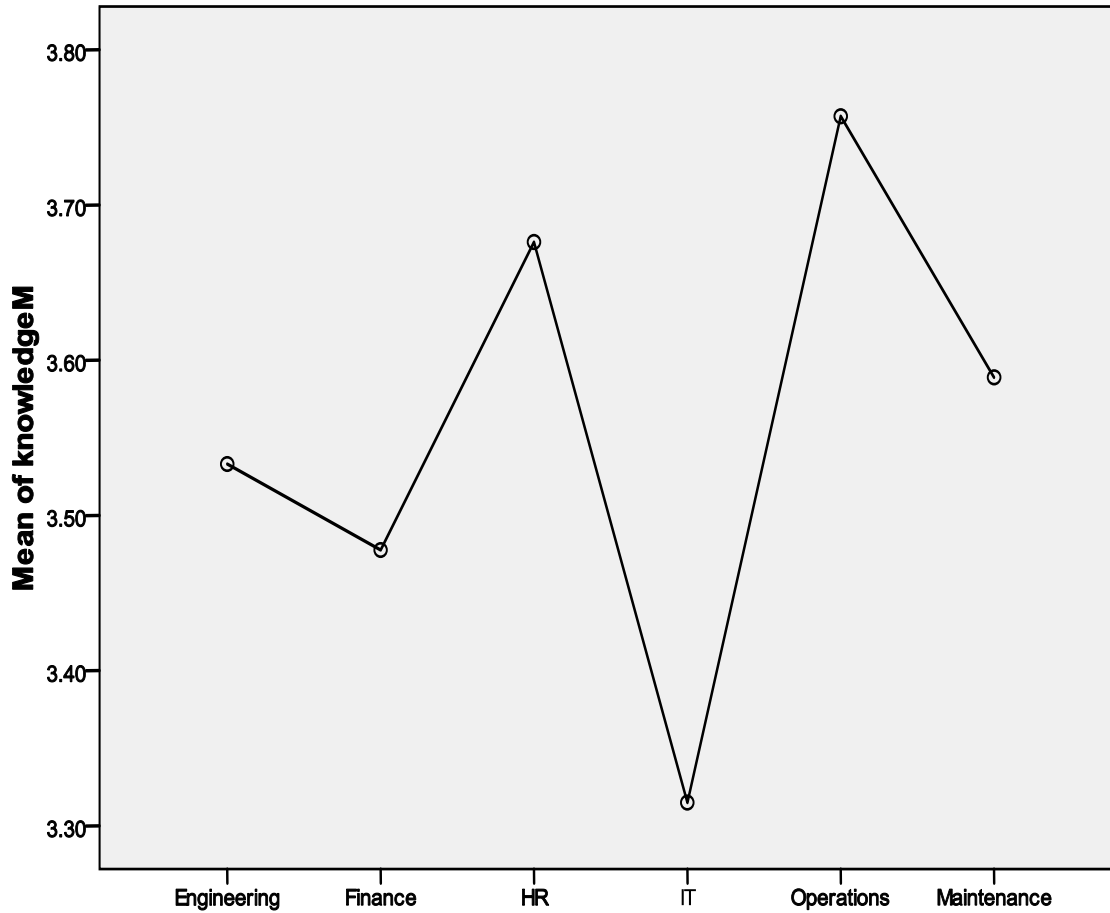


Figure 22 - Differences in Knowledge Management with Respect to Divisions

The least significant differences (LSD) test was used for multiple comparisons, and it was found out that knowledge “creation” variable in the pair wise group differences occurred between human resources division (HRD) ($M = 3.67$, $SD = .665$), finance ($M = 3.47$, $SD = .567$), and IT ($M = 3.31$, $SD = .689$). These results indicated that HR division has better knowledge than finance and IT divisions. Similarly, it was found out that the IT division ($M = 3.31$, $SD = .689$) has statistical differences from the operations divisions ($M = 3.75$, $SD = .473$); this result

indicated that operations division has better knowledge than IT division as shown in Figures 22 and 23 and Table 9.

KM in six AG divisions

Table 9 - Indicates that the Operations Division has better Knowledge than the Information Technology Division

Division	Mean	<i>n</i>	<i>SD</i>
Engineering	3.5332	49	.65626
Finance	3.4777	28	.56780
Human resource	3.6761	77	.66521
IT	3.3150	25	.68998
Maintenance	3.5890	85	.67068
Operations	3.7571	70	.47390
Total	3.6063	334	.63092

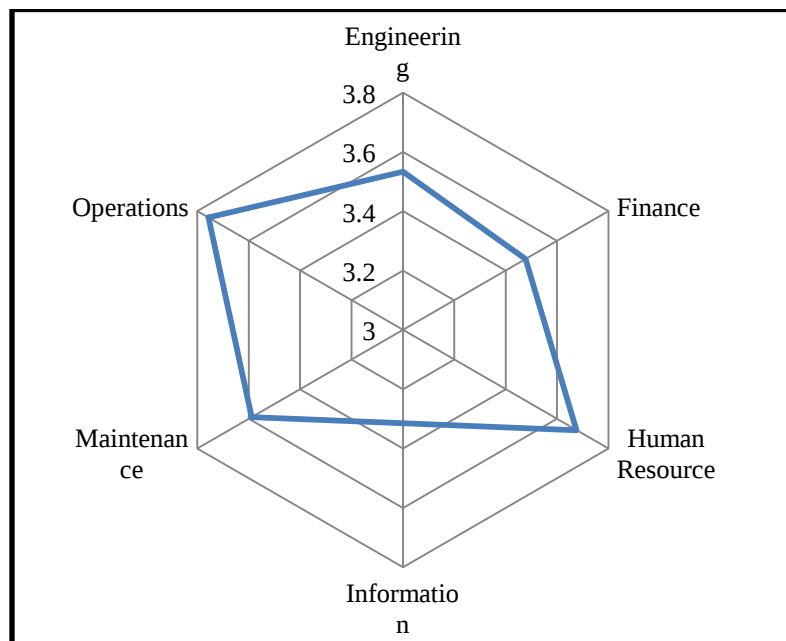


Figure 23 – The Operations Division has Better Knowledge than the IT Division

A total of 64.8% responded “yes” to the question if their organization has KM program in place. However, 25.7% were unsure while 9.5% replied “no,” as shown in Figure 24.



Figure 24 - Percentage of Organization Knowledge Management Program in place

4.6.1 Overall Knowledge Management in the Six Divisions

The analysis of the data showed that the overall KM is quite strong as assessed by each factor as displayed in Table 10 below. However, it was importantly noticed that there is a small gap between the knowledge creation and its application.

The division-wise assessment of KM highlighted the following points:

- There is a significant difference in KM between the divisions.
- KM is strong in the operations division and weak in the IT division.
- The differences between the various KM processes are also significant.

- The difference between knowledge creation and knowledge application is lowest in IT and highest in HR division.
- In finance division (FD), 35% are unsure and are not even aware of the KM activities in the company.
- While in the IT division, 22% felt that there is no KM in the company.

Table 10 - Overall Knowledge Management in the Six AG Divisions

Knowledge Management Factor	Engineering	Finance	Human Resource	IT	Operations	Maintenance
Creating knowledge	0.64	0.59	0.77	0.58	0.76	0.67
Capturing knowledge	0.66	0.56	0.75	0.58	0.75	0.64
Organizing knowledge	0.67	0.57	0.72	0.56	0.76	0.63
Storing knowledge	0.67	0.56	0.65	0.49	0.73	0.62
Disseminating knowledge	0.65	0.54	0.62	0.45	0.70	0.60
Applying knowledge	0.61	0.55	0.60	0.40	0.72	0.61

4.6.1.1 Overall Knowledge Management Statement-wise Analysis

Referring to Table 11 below, it can be clearly noticed that 60%–70% of the employees agreed on all the statements on KM. This showed that AG has a creating, acquiring, absorbing, sharing, and exchanging knowledge culture. The only exception was that the respondents did not agree that AG has a patent and copyright, libraries, conduct forums, or disseminate knowledge. In addition, there is no policy to review knowledge and no publications to display captured

knowledge or forums to share knowledge. Figure 25 shows the average of overall percentage of KM process in AG divisions.

Table 11 - Overall percentage of Knowledge Management process in AG Divisions

Factor	Disagree	Unsure	Agree
Creating knowledge	0.09	0.22	0.70
Capturing knowledge	0.08	0.24	0.68
Organizing knowledge	0.08	0.24	0.68
Storing knowledge	0.09	0.27	0.64
Disseminating knowledge	0.10	0.28	0.62
Applying knowledge	0.12	0.28	0.61

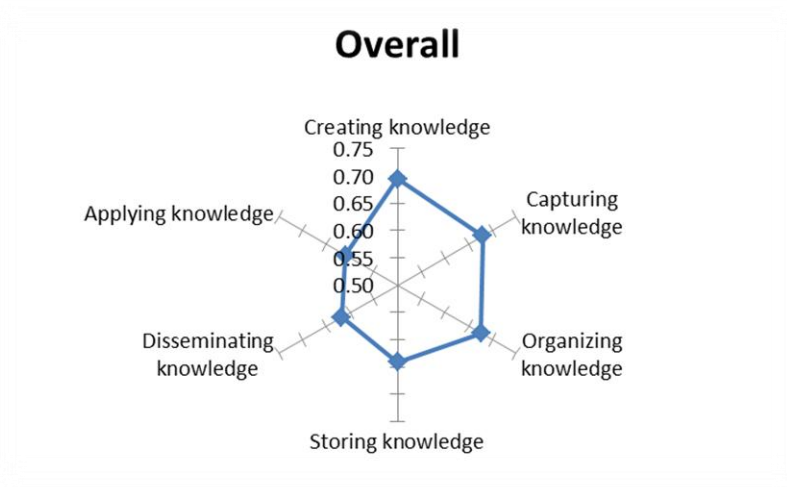


Figure 25 - Overall Percentage of Knowledge Management Processes in AG Divisions

The results of KM in each of the six AG divisions are shown in Tables 12 to 17 and Figures 26 to 31 below.

4.6.1.2 Knowledge Management in the Engineering Division

Table 12 - Knowledge Management in the Engineering Division

Factor	Disagree	Unsure	Agree
Creating knowledge	0.13	0.23	0.64
Capturing knowledge	0.12	0.23	0.66
Organizing knowledge	0.10	0.22	0.67
Storing knowledge	0.09	0.23	0.67
Disseminating knowledge	0.11	0.24	0.65
Applying knowledge	0.13	0.26	0.61

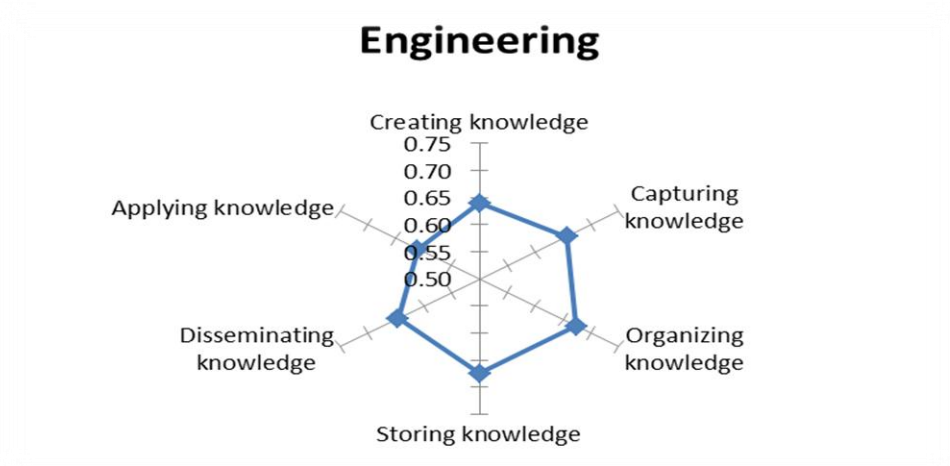


Figure 26 - Knowledge Management in the Engineering Division

Knowledge Management in the Finance Division

Table 13 - Knowledge Management in the Finance Division

Factor	Disagree	Unsure	Agree
Creating knowledge	0.10	0.31	0.59
Capturing knowledge	0.11	0.32	0.56
Organizing knowledge	0.10	0.32	0.57
Storing knowledge	0.09	0.35	0.56
Disseminating knowledge	0.09	0.37	0.54
Applying knowledge	0.08	0.37	0.55

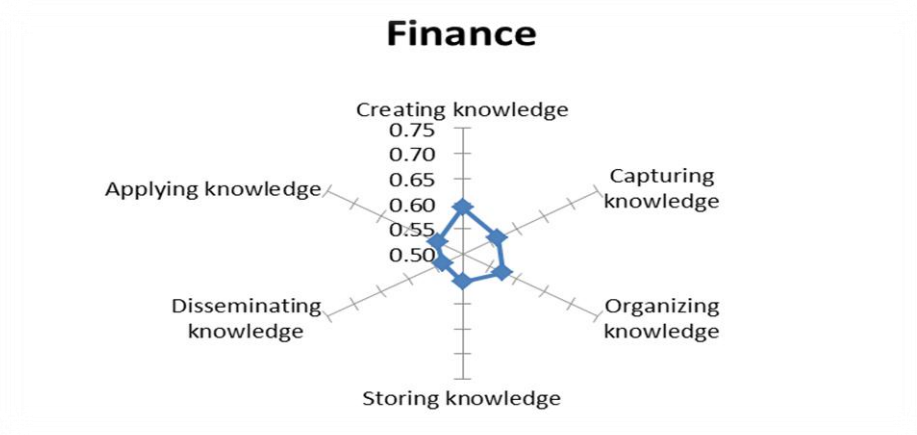


Figure 27 - Knowledge Management in the Finance Division

4.6.1.3 Knowledge Management in the Human Resources Division

Table 14 -Knowledge Management in the Human Resources Division

Factor	Disagree	Unsure	Agree
Creating knowledge	0.06	0.17	0.77
Capturing knowledge	0.06	0.19	0.75
Organizing knowledge	0.07	0.21	0.72
Storing knowledge	0.08	0.27	0.65
Disseminating knowledge	0.10	0.28	0.62
Applying knowledge	0.14	0.26	0.60

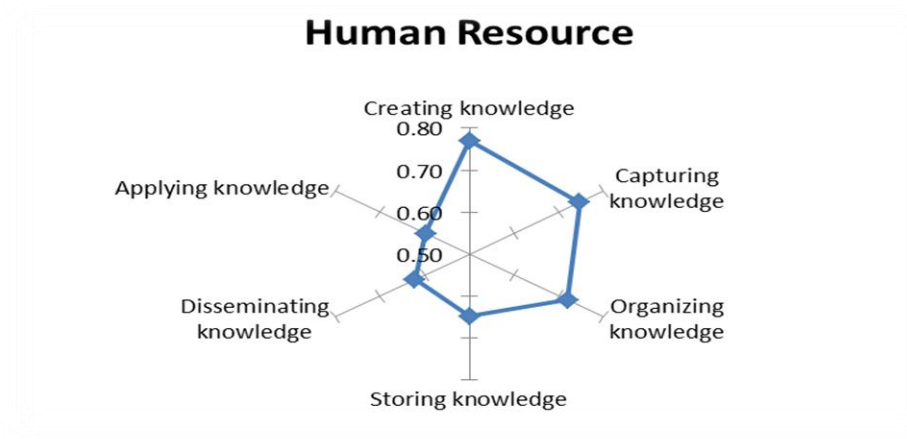


Figure 28 - Knowledge Management in the Human Resources Division

4.6.1.4 Knowledge Management in the Information Technology Division

Table 15 - Knowledge Management in the Information Technology Division

Factor	Disagree	Unsure	Agree
Creating knowledge	0.20	0.23	0.58
Capturing knowledge	0.20	0.23	0.58
Organizing knowledge	0.18	0.26	0.56
Storing knowledge	0.23	0.29	0.49
Disseminating knowledge	0.21	0.34	0.45
Applying knowledge	0.25	0.35	0.40

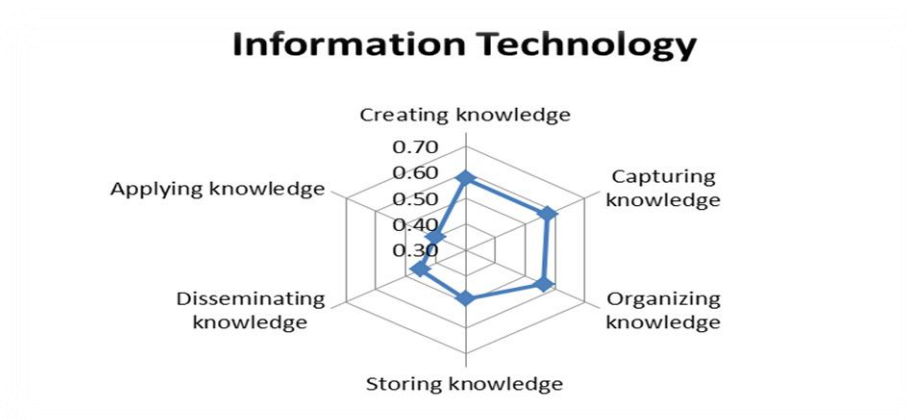


Figure 29 - Knowledge Management in the Information Technology Division

4.6.1.5 Knowledge Management in the Operations Division

Table 16 -Knowledge Management in the Operations Division

Factor	Disagree	Unsure	Agree
Creating knowledge	0.03	0.22	0.76
Capturing knowledge	0.02	0.24	0.75
Organizing knowledge	0.03	0.21	0.76
Storing knowledge	0.04	0.23	0.73
Disseminating knowledge	0.05	0.24	0.70
Applying knowledge	0.06	0.22	0.72

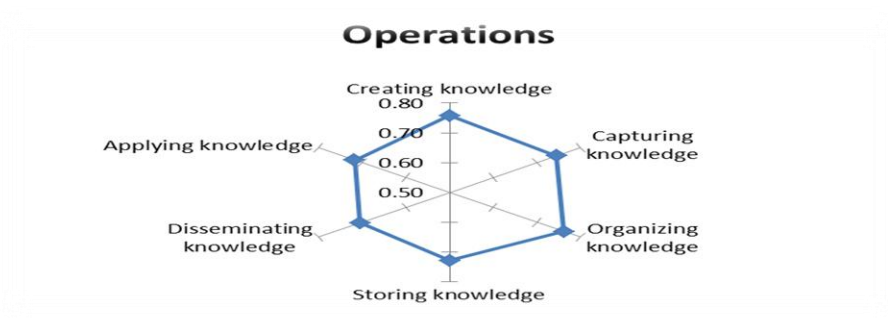


Figure 30 - Knowledge Management in the Operations Division

4.6.1.6 Knowledge Management in the Maintenance Division

Table 17 - Knowledge Management in the Maintenance Division

Factor	Disagree	Unsure	Agree
Creating knowledge	0.10	0.23	0.67
Capturing knowledge	0.10	0.26	0.64
Organizing knowledge	0.10	0.27	0.63
Storing knowledge	0.10	0.28	0.62
Disseminating knowledge	0.10	0.30	0.60
Applying knowledge	0.10	0.29	0.61

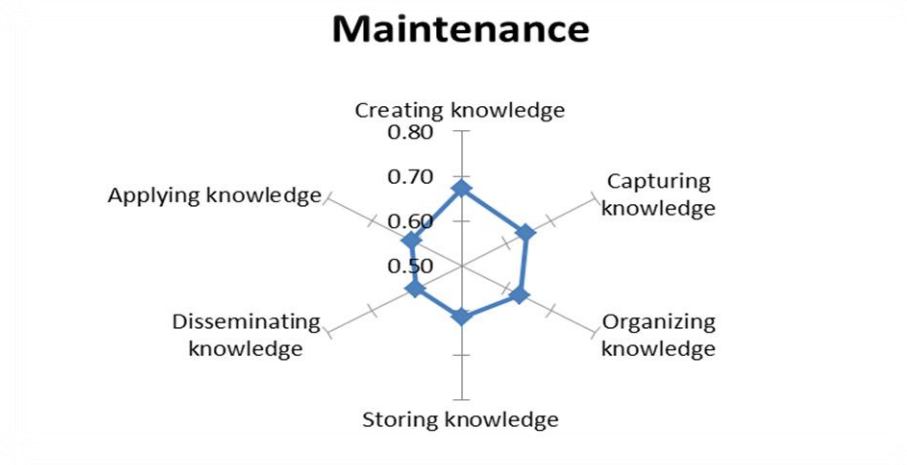


Figure 31 - Knowledge Management in the Maintenance Division

4.6.2 Overall Assessment of Knowledge Management Using the SECI Model

The assessment of KM based on SECI model highlighted the following points as shown in Table 18 and Figure 32:

- Overall, both socialization and externalization are strong.
- Internalization is weak.

The division-wise assessment of KM based on the SECI model highlights the following points as shown in Table 19:

- There is a significant difference in KM between the different divisions investigated in the study.
- KM is strong in the operations division and weak in the IT division.

The findings are the same as observed in the KM assessment presented in the previous section.

Table 18 - Knowledge Management Based on the SECI Model overall in the Six AG Divisions

Factor	Disagree	Unsure	Agree
Socialization	0.09	0.24	0.67
Externalization	0.09	0.26	0.65
Combination	0.11	0.29	0.60
Internalization	0.12	0.30	0.58

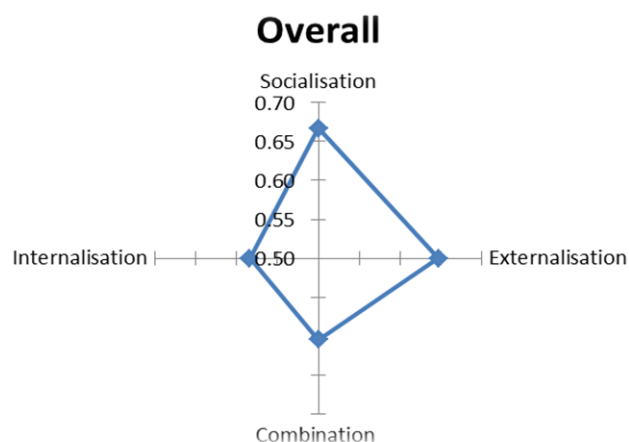


Figure 32 - Knowledge Management Based on the SECI Model Overall in the Six AG Divisions

Table 19 - Knowledge Management Based on the SECI Model in Each Six AG Divisions

SECI Model	Engineering	Finance	Human Resource	IT	Operations	Maintenance
Socialization	0.65	0.59	0.71	0.50	0.73	0.66
Externalization	0.64	0.56	0.70	0.46	0.70	0.64
Combination	0.60	0.51	0.63	0.45	0.68	0.59
Internalization	0.56	0.51	0.61	0.38	0.67	0.59

The results of KM using the SECI Model for each of the six AG divisions are shown in Tables 20 to 25 and Figures 33 to 38.

4.6.2.1 Assessment of Knowledge Management in the Engineering Division Using the SECI Model

Table 20 - Knowledge Management Assessment in the Engineering Division using the SECI Model

Factor	Disagree	Unsure	Agree
Socialization	0.11	0.24	0.65
Externalization	0.13	0.24	0.64
Combination	0.12	0.28	0.60
Internalization	0.12	0.32	0.56

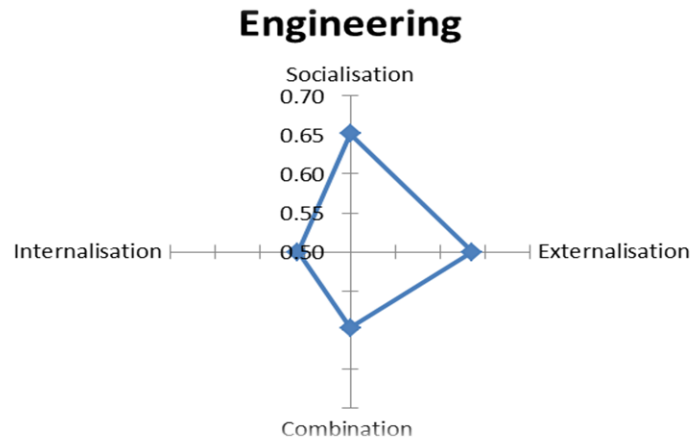


Figure 33 - Knowledge Management Assessment in the Engineering Division using the SECI Model

4.6.2.2 *Assessment of Knowledge Management in the Finance Division Using the SECI Model*

Table 21 - Knowledge Management Assessment in the Finance Division using the SECI Model

Factor	Disagree	Unsure	Agree
Socialization	0.06	0.35	0.59
Externalization	0.09	0.35	0.56
Combination	0.12	0.37	0.51
Internalization	0.09	0.40	0.51

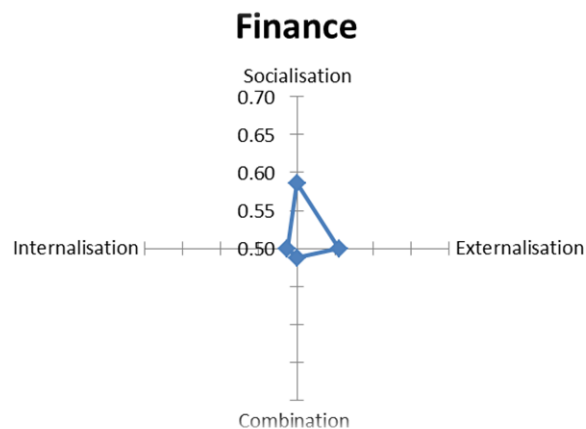


Figure 34 - Knowledge Management Assessment in the Finance Division using the SECI Model

4.6.2.3 *Assessment of Knowledge Management in the Human Resources Division Using the SECI Model*

Table 22 - Knowledge Management Assessment in the Human Resources Division using the SECI Model

Factor	Disagree	Unsure	Agree
Socialization	0.09	0.20	0.71
Externalization	0.10	0.21	0.70
Combination	0.09	0.27	0.63
Internalization	0.12	0.27	0.61

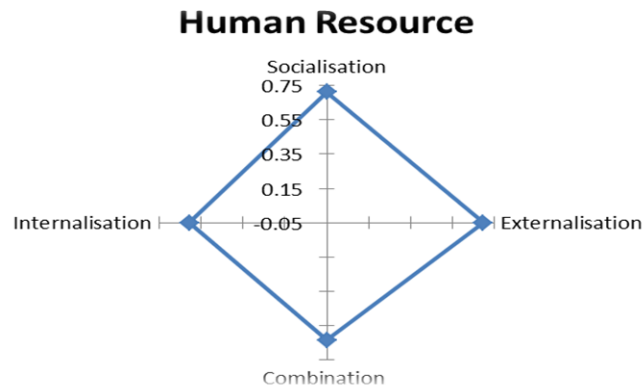


Figure 35 - Knowledge Management Assessment in the Human Resources Division using the SECI Model

4.6.2.4 *Assessment of Knowledge Management in the Information Technology Division Using the SECI Model*

Table 23 - Knowledge Management assessment in the Information Technology Division using the SECI Model

Factor	Disagree	Unsure	Agree
Socialization	0.20	0.30	0.50
Externalization	0.23	0.31	0.46
Combination	0.25	0.30	0.45
Internalization	0.28	0.35	0.38

Information Technology

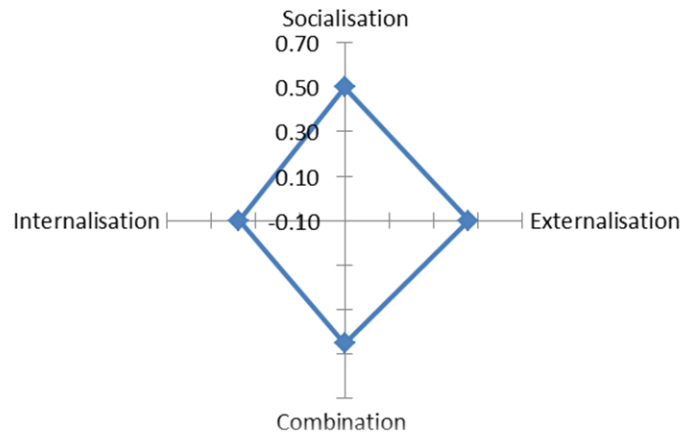


Figure 36 - Knowledge Management Assessment in the Information Technology Division using the SECI Model

4.6.2.5 Assessment of Knowledge Management in the Operations Division Using the SECI Model

Table 24 - Knowledge Management assessment in the Operations Division using the SECI Model

Factor	Disagree	Unsure	Agree
Socialization	0.04	0.23	0.73
Externalization	0.04	0.26	0.70
Combination	0.07	0.25	0.68
Internalization	0.08	0.25	0.67

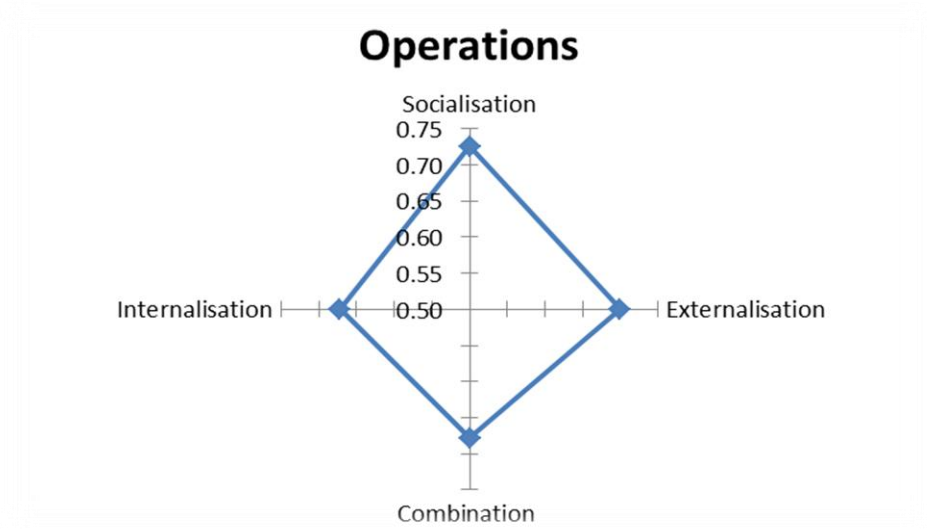


Figure 37 - Knowledge Management Assessment in the Operations Division using the SECI Model

4.6.2.6 Assessment of Knowledge Management in the Maintenance Division Using the SECI Model

Table 25 - Knowledge Management assessment in the Maintenance Division using the SECI Model

Factor	Disagree	Unsure	Agree
Socialization	0.09	0.26	0.66
Externalization	0.06	0.29	0.64
Combination	0.10	0.31	0.59
Internalization	0.10	0.31	0.59

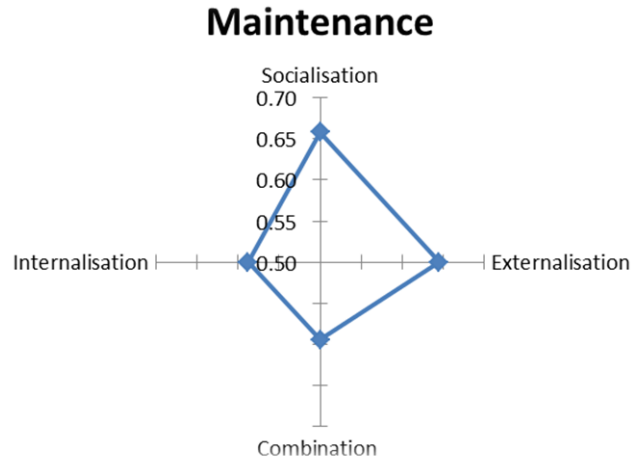


Figure 38 - Knowledge Management Assessment in the Maintenance Division using the SECI Model

4.6.2.7 *Independent t Test Comparison of Knowledge Management between Senior and Supporting Staff*

Further analysis was used to compare between the senior and the support participants. The main hypothesis in this analysis is the following: Is there any statistical difference between senior and support participants regarding KM and SECI variables. In order to answer this further research question, an independent *t* test was implemented. The results in Table 26 indicated that in general, there are no statistical differences between both groups in their opinion about KM, except in knowledge application ($p = .003$) and dissemination ($p = .021$), where the results tend to suggest that senior staff has better attitude toward these variables.

Table 26 - Knowledge Management comparison between Senior and Support participants

	Job Rank	n	Mean	SD	t	P
Creating	Senior	269	3.7351	.67799	1.446	.149
	Support	65	3.7231	.73570		
Capturing	Senior	269	3.6283	.68384	.126	.899
	Support	65	3.5269	.73304		
Organizing	Senior	269	3.5716	.69529	1.057	.291
	Support	65	3.4846	.83605		
Storing	Senior	269	3.5716	.64047	.868	.386
	Support	65	3.3538	.81117		
Disseminating	Senior	269	3.7491	.63057	2.328	.021
	Support	65	3.4808	.71303		
Applying	Senior	269	3.6199	.64123	2.999	.003
	Support	65	3.4692	.73886		
KM	Senior	269	3.6266	.61131	1.649	.100
	Support	65	3.5221	.70524		

There are no statistical differences between the two groups in their opinion about SECI except on combination as shown in Table 27.

Table 27 - Knowledge Management using SECI Model comparison of Senior and Support participants

	Job Rank	<i>n</i>	Mean	<i>SD</i>	<i>t</i>	<i>P</i>
Socialization	Senior	269	3.7082	.60713	1.546	.123
	Support	65	3.5769	.64420		
Externalization	Senior	269	3.6716	.60211	1.580	.115
	Support	65	3.5385	.64062		
Combination	Senior	269	3.6152	.62323	1.788	.075
	Support	65	3.4564	.71824		
Internalization	Senior	269	3.5886	.62668	1.490	.139
	Support	65	3.4538	.75720		

4.7 Organizational Culture

The six AG divisions selected for this study are strong in hierarchy culture. Table 28 and Figure 39 show the results for all of the six divisions' profiles, with 74% of employees stating that hierarchy is the dominant culture type in their division. Furthermore, 68% of employees rated clan culture as the second dominant culture type in the AG organization, while adhocracy has received the lowest support in the organization, thus showing that the overall culture is not well balanced. This again shows agreement to Jones et al. (2011) in the fact that the three cultural types, with the exception to adhocracy culture, have an impact, but the present finding does not put them in the same order. Furthermore, the present results confirmed similar findings to those reported by Al Adaileh (2011).

4.7.1 Overall Organizational Culture—Statement-wise Analysis

- The cultural difference among the divisions is statistically significant.
- The strength of the dominant culture (hierarchy) is strongest in operations division and weakest in the MD.
- Adhocracy culture is weakest overall; with the exception of engineering division (ED) where it is secondary dominant culture type (This is justified since AG is not solely a marketing company.).
- Most of the statements on OC showed that the employees have agreed (74% average) that their culture emphasizes stability, efficiency, and control with smooth operation coupled with adhering to procedures.
- Around 30% of the employees said that they are neither aware nor sure that the organization leans toward risk-taking, entrepreneurial ship, aggressiveness, and innovation.
- Most of the respondents disagreed to the statements on OC. Twenty percent, however, agreed to statements 2 and 10, which are related to innovation and risk-taking.

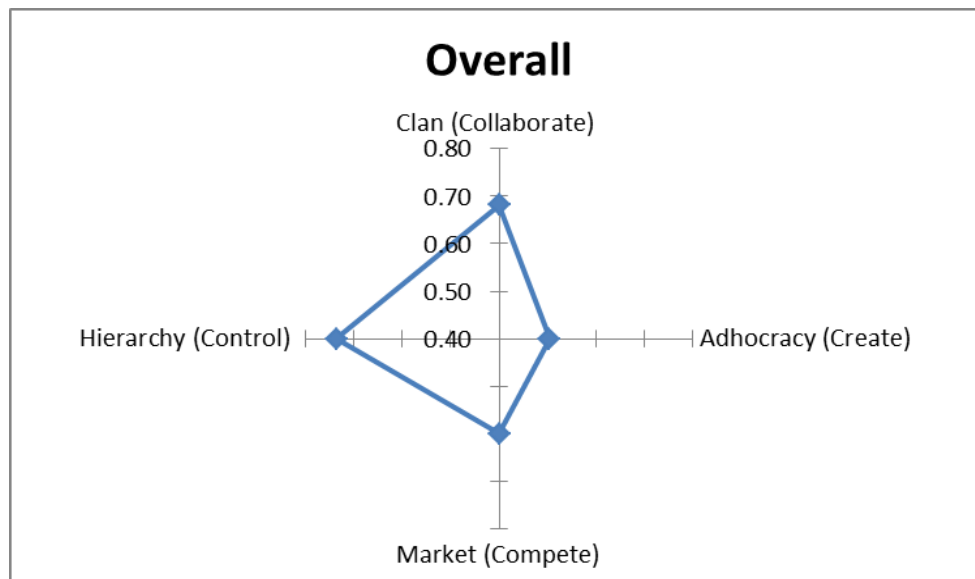


Figure 39 - Results for All of the Six AG (Divisions) Organizational Culture Profiles

Table 28 - The Six AG (Divisions) Organizational Culture Profiles

Organization Culture Type	Engineering	Finance	Human Resource	Information Technology	Operations	Maintenance
Clan	0.64	0.64	0.70	0.68	0.76	0.64
Adhocracy	0.49	0.51	0.56	0.38	0.56	0.45
Market	0.64	0.59	0.64	0.50	0.66	0.52
Hierarchy	0.77	0.71	0.75	0.71	0.81	0.66

The results revealed that hierarchy is the dominant culture followed by clan. However, clan is more dominant in operations, HR, and IT, respectively.

The results of OC types in each of the six AG divisions are shown in Tables 29 to 34 and Figures 40 to 45.

4.7.1.1 Organizational Culture Profile in Engineering

Referring to Table 29 and Figure 40, it can be clearly noticed that the majority of the respondents (77% or number) in the Engineering Division (ED) agreed that the culture is a hierarchy culture, and 64% rated the culture between clan and market cultures.

Table 29 - Organizational Culture Profile in the Engineering Division

Culture Type	Disagree	Unsure	Agree
Clan	0.13	0.22	0.64
Adhocracy	0.18	0.33	0.49
Market	0.13	0.22	0.64
Hierarchy	0.07	0.16	0.77

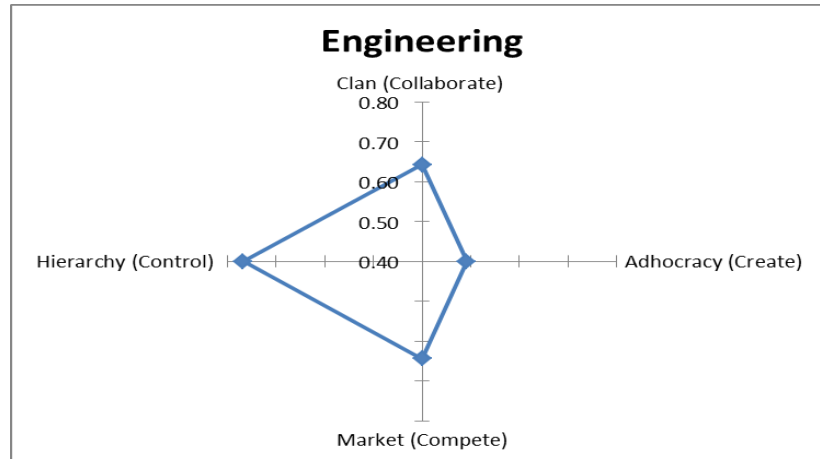


Figure 40 - Organizational Culture Profile in the Engineering Division

Organizational Culture Profile in Finance Division

Referring to Table 30 and Figure 41, it can be clearly noticed that the majority of the respondents (71%) in the Finance Division (FD) agreed that the culture is a hierarchy culture, and 64% believed that it is a clan culture.

Table 30 - Organization Culture Profile in the Finance Division

Culture Type	Disagree	Unsure	Agree
Clan	0.15	0.21	0.64
Adhocracy	0.14	0.35	0.51
Market	0.10	0.31	0.59
Hierarchy	0.11	0.18	0.71

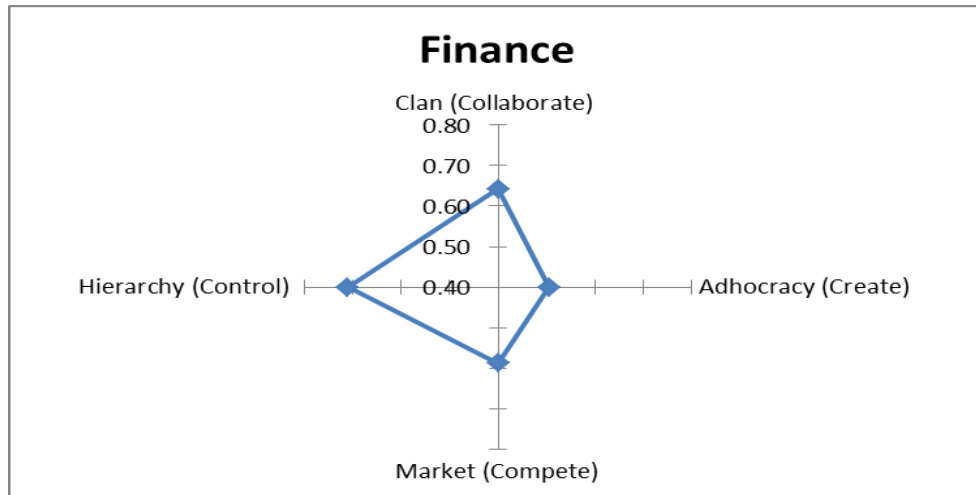


Figure 41 - Organizational Culture Profile in the Finance Division

Organizational Culture Profile in the HR Division

Referring to the Table 31 and Figure 42 below, it can be clearly noticed that the majority of the respondents (75%) in the HR division agreed that the culture is a hierarchy culture, and 70% rated it as a clan cultures, and 64% rated it as a market culture. It is worth mentioning that in HR, there are fewer procedures to follow while there are more policies to employ.

Table 31 - Organizational Culture Profile in the Human Resources Division

Culture Type	Disagree	Unsure	Agree
Clan	0.08	0.22	0.70
Adhocracy	0.16	0.28	0.56
Market	0.12	0.25	0.64
Hierarchy	0.05	0.20	0.75

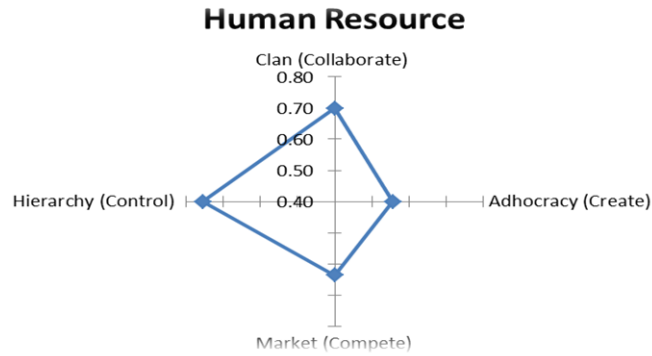


Figure 42 - Organizational Culture Profile in the Human Resources Division

4.7.1.2 *Organizational Culture Profile in the IT Division*

Referring to Table 32 and Figure 43, it can be clearly noticed that the majority of the respondents (71%) in the IT division agreed that the culture organization is a hierarchy in nature and 68% stated that it is a clan culture.

Table 32 - Organizational Culture profile in the Information Technology Division

Culture Type	Disagree	Unsure	Agree
Clan	0.13	0.19	0.68
Adhocracy	0.25	0.37	0.38
Market	0.15	0.35	0.50
Hierarchy	0.06	0.23	0.71

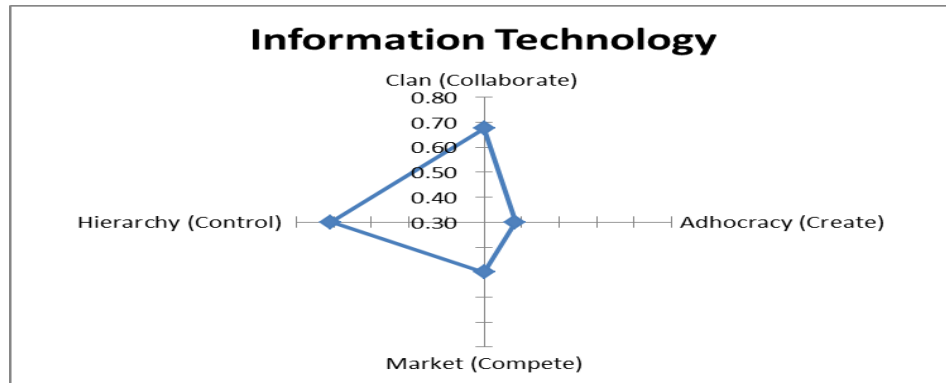


Figure 43 - Organizational Culture Profile in the Information Technology Division

4.7.1.3 Organizational Culture Profile in Operations Division

Referring to Table 33 and Figure 44, it can be clearly noticed that the majority of the respondents (81%) in the operations division agreed that the overall culture is a hierarchy culture, and 76% claimed that it is a clan culture, while 66% rated it as a market culture.

Table 33 - Organizational Culture profile in the Operations Division

Culture Type	Disagree	Unsure	Agree
Clan	0.06	0.18	0.76
Adhocracy	0.13	0.31	0.56
Market	0.08	0.25	0.66
Hierarchy	0.04	0.16	0.81

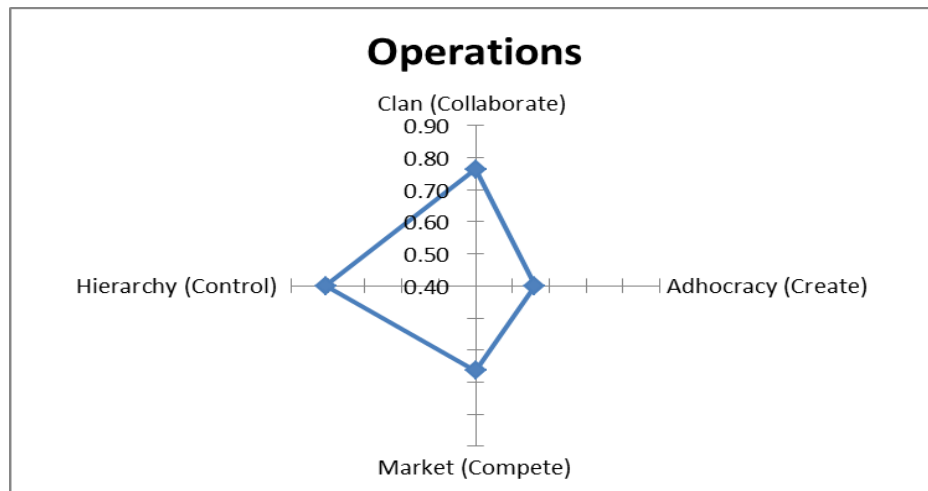


Figure 44 - Organizational Culture Profile in the Operations Division

Organizational Culture Profile in the Maintenance Division

Referring to Table 34 and Figure 45, it can be clearly noticed that the majority of the respondents (66%) in the Maintenance Division (MD) agreed that the culture is a hierarchy culture, and 64% rated it as a clan culture.

Table 34 - Organizational Culture Profile in the Maintenance Division

Culture Type	Disagree	Unsure	Agree
Clan	0.12	0.24	0.64
Adhocracy	0.16	0.40	0.45
Market	0.14	0.34	0.52
Hierarchy	0.09	0.25	0.66

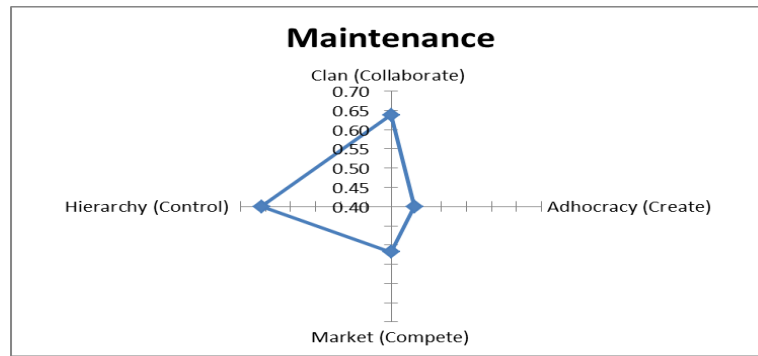


Figure 45 - Organizational Culture Profile in the Maintenance Division

Independent t Test Comparison OC between Senior and Supporting Staff

Further analysis was used to compare between the senior and the support participants. The main hypothesis in this analysis is as follows: Is there any statistical differences between senior and support participants regarding OC?

In order to answer this further research question, the independent *t* test was implemented. The results in Table 35 indicate that generally, there are no statistical differences between the senior and supporting staff in their opinion about OC except adhocracy ($p = .017$) and market ($p = .028$) where results tend to suggest that senior staff has better attitude toward these variables.

Table 35 - Organizational Culture between Senior and Support Participants

	Job Rank	n	Mean	SD	t	P
Clan	Senior	292	3.6689	.66895	.358	.721
	Support	72	3.6366	.76214		
Adhocracy	Senior	292	3.3961	.65442	2.395	.017
	Support	72	3.1806	.79353		
Market	Senior	292	3.5531	.55984	2.204	.028
	Support	72	3.3796	.73490		

Hierarchy	Senior	292	3.7603	.54904	.231	.817
	Support	72	3.7431	.63353		
OC	Senior	292	3.5946	.55655	1.446	.149
	Support	72	3.4850	.65105		

Overall Leadership Style in the Six Divisions

It was interesting to note that both transformational as well as transactional LSs are quite strong in the AG organization.

The division-wise assessment of leadership behavior highlighted the following points as shown in Tables 36 and 37 and Figure 46:

- LSs in different divisions are significantly different.
- The difference between transformational as well as transactional LSs is very significant in the MD and more or less negligible in all other divisions.

4.7.2 Overall Leadership Style Statement-wise Analysis

Sixty percent of the surveyed population agreed on the statements on LSs. This showed that the leadership in AG is satisfactory, expresses confidence, is effective, and is optimistic.

Table 36 - Leadership Style Overall in the Six AG Divisions

LSs	Disagree	Unsure	Agree
Transformational	0.10	0.30	0.60
Transactional	0.14	0.33	0.54
Passive avoidant	0.43	0.32	0.25

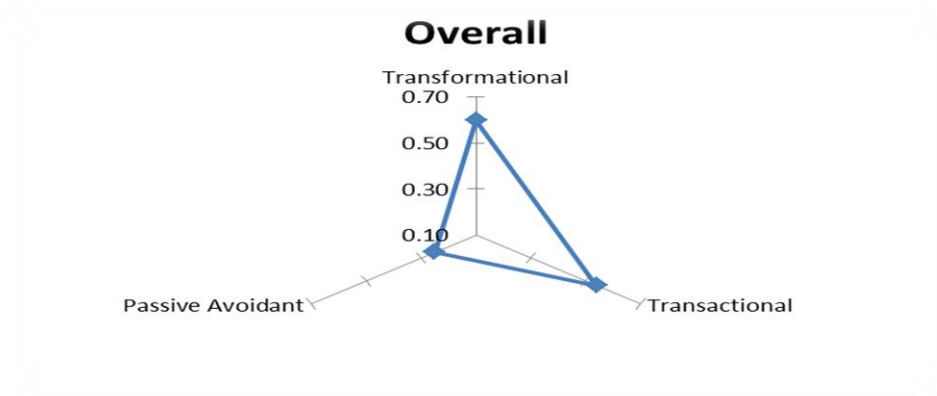


Figure 46 - Leadership Style Overall in the Six AG Divisions

Table 37 - Leadership Style in Each of the Six AG Divisions

Leadership Style	Engineering	Finance	Human Resource	Information Technology	Operations	Maintenance
Transformational	0.57	0.49	0.65	0.60	0.65	0.56
Transactional	0.52	0.42	0.58	0.47	0.62	0.12
Passive avoidant	0.16	0.16	0.32	0.22	0.28	0.07

The results of OC types in each of the six AG divisions are shown in Tables 38 to 43 and Figures 47 to 52.

Leadership Style in the Engineering Division

Table 38 - Leadership Styles in the Engineering Division

Leadership Style	Disagree	Unsure	Agree
Transformational	0.11	0.32	0.57
Transactional	0.16	0.33	0.52
Passive avoidant	0.50	0.34	0.16

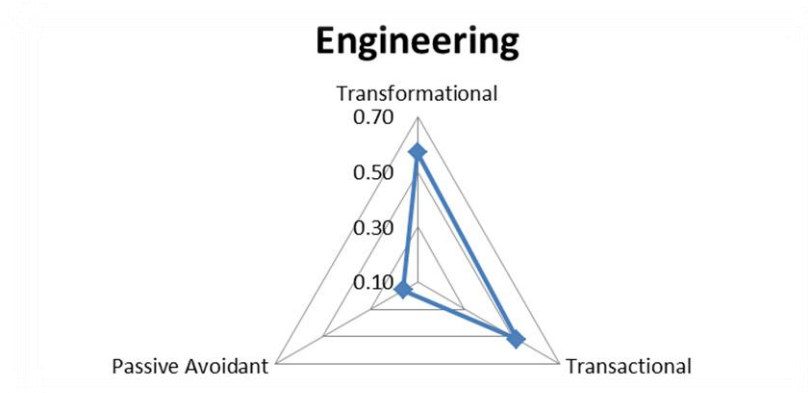


Figure 47 - Leadership Styles in the Engineering Division

4.7.2.1 Leadership Style in the Finance Division

Table 39 - Leadership Styles in the Finance Division

Transformational	0.09	0.42	0.49
Transactional	0.14	0.44	0.42
Passive avoidant	0.38	0.46	0.16

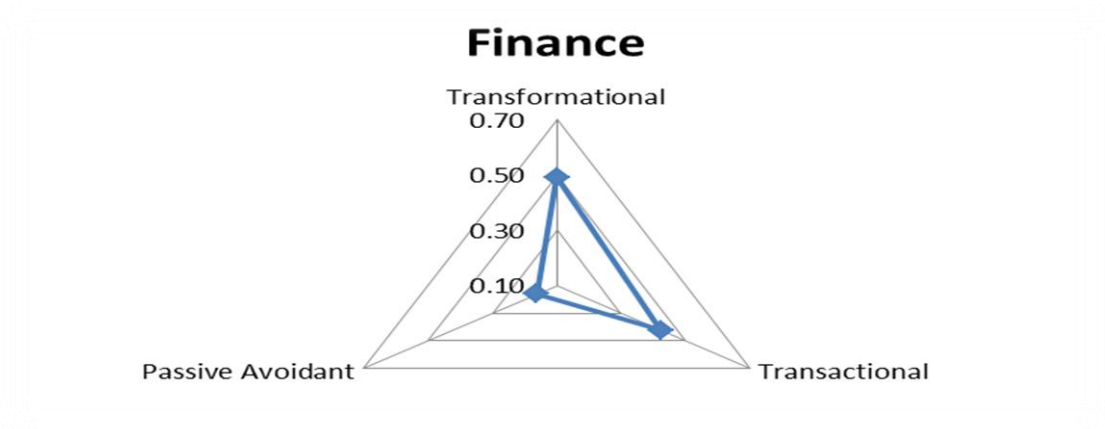


Figure 48 - Leadership Styles in the Finance Division

4.7.2.2 Leadership Style in the Human Resources Division

Table 40 - Leadership Styles in the Human Resources Division

Leadership Styles	Disagree	Unsure	Agree
Transformational	0.13	0.22	0.65
Transactional	0.16	0.26	0.58
Passive avoidant	0.44	0.24	0.32

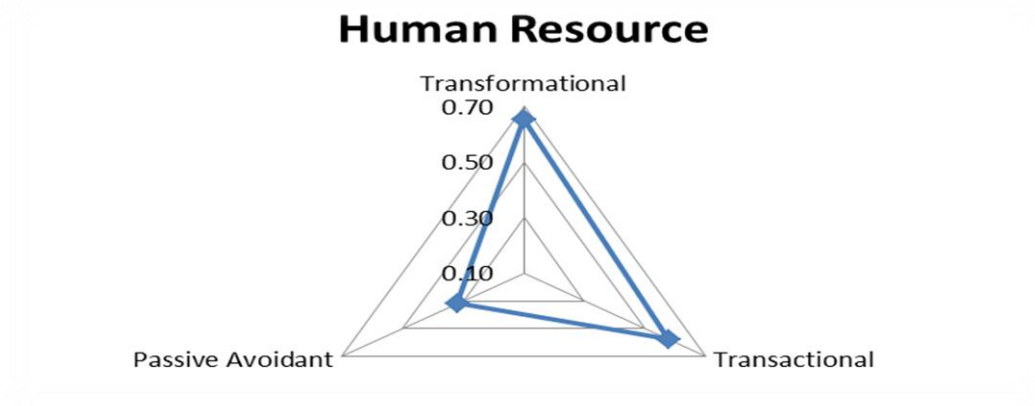


Figure 49 - Leadership Styles in the Human Resources Division

4.7.2.3 Leadership Style in the Information Technology Division

Table 41 - Leadership Styles in the Information Technology Division

Leadership Styles	Disagree	Unsure	Agree
Transformational	0.10	0.30	0.60
Transactional	0.19	0.34	0.47
Passive avoidant	0.48	0.30	0.22

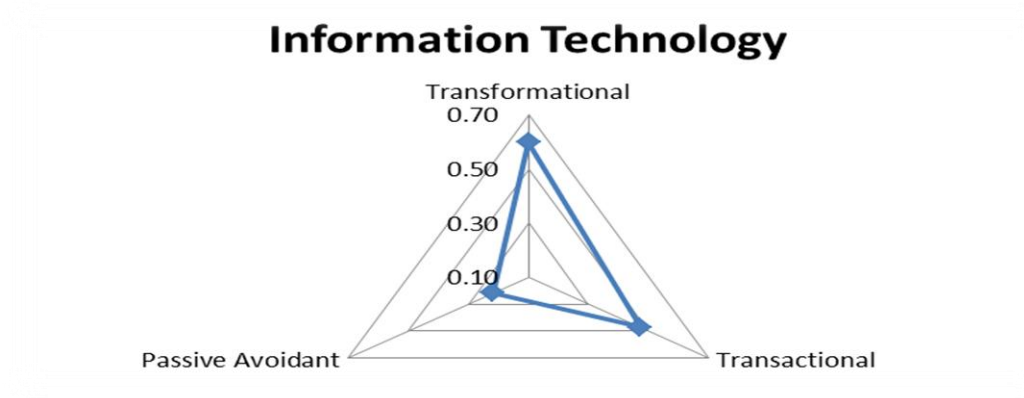


Figure 50 - Leadership Styles in the Information Technology Division

4.7.2.4 Leadership Style in the Operations Division

Table 42 - Leadership Styles in the Operations Division

Leadership Styles	Disagree	Unsure	Agree
Transformational	0.07	0.28	0.65
Transactional	0.10	0.28	0.62
Passive avoidant	0.42	0.30	0.28

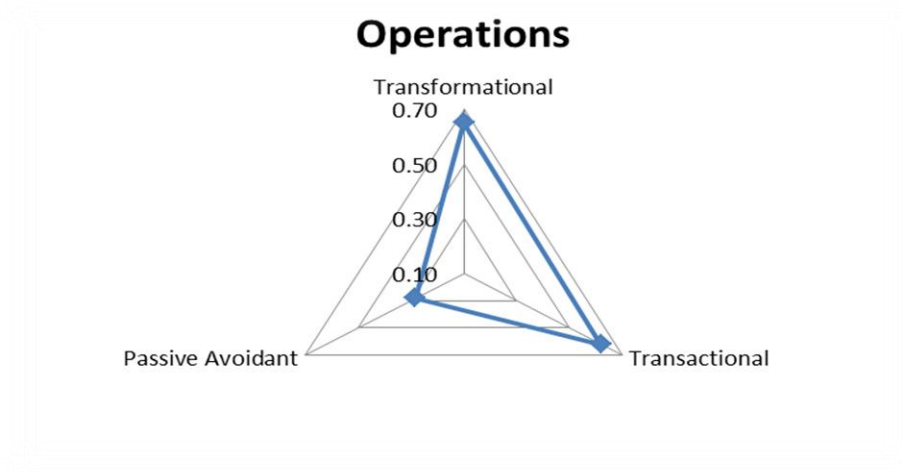


Figure 51 - Leadership Styles in the Operations Division

4.7.2.5 Leadership Style in the Maintenance Division

Table 43 - Leadership Styles in the Maintenance Division

Leadership Styles	Disagree	Unsure	Agree
Transformational	0.08	0.36	0.56
Transactional	0.11	0.38	0.51
Passive avoidant	0.38	0.37	0.25

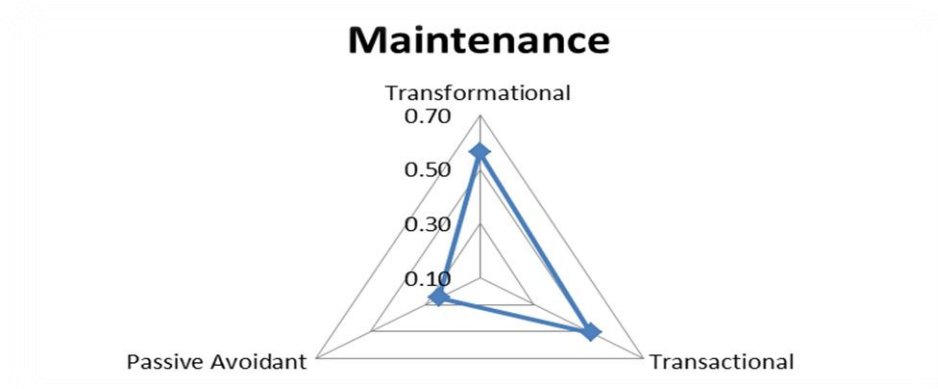


Figure 52 - Leadership Styles in the Maintenance Division

4.7.2.6 Independent *t* Test Comparison of Leadership Style between Senior and Supporting Staff

Further analysis was used to compare between the senior and the support participants as to whether there is any statistical difference regarding LS. The independent *t* test comparison was conducted, and the results concluded that there are no differences between the two groups as given in Table 44.

Table 44 - Statistical Differences between Senior and Supporting Staff in their opinion about Leadership Styles

	Job Rank	<i>n</i>	Mean	<i>SD</i>	<i>t</i>	<i>p</i>
	Senior	254	3.5586	.55176	1.556	
	Support	62	3.4364	.56654		
	Senior	254	3.5217	.54233	1.329	
	Support	62	3.4173	.60052		
	Senior	254	2.8460	.77092	1.210	
	Support	62	2.7137	.77400		
	Senior	254	3.3087	.45336	1.842	

Chapter 5

Discussion of Results

8.1 Introduction

The literature shows that OC and leadership had been separately linked to organizational performance in most studies, with few critical studies exploring the link between the two and the impact that this link might have on leadership effectiveness.

The main purpose of this research work was to examine, evaluate, and analyze the type of OC, LS, and KM processes and how they affect one another in the oil and gas sector within the UAE. The study mainly concentrated on one particular gas company, ADGAS, to explore this intricate relationship, find out its culture type and LS in six of its major divisions, and find out how these influence and affect the KMS in the organization. Furthermore, to find out which type of culture and leadership would promote knowledge growth, transfer, and sharing and which will pose a hindrance to its effective implementation. The study also aimed at pointing out the weaknesses, strengths, and gaps in ADGAS KMS and to put forward recommendations for its improvement and development to drive a better performance. Finally, to propose areas that need further future study and research in other oil and gas companies and government sectors in the UAE.

8.2 Discussion of Results

Demographic and general variable's distribution showed that the majority of the respondents (90.5%) are male, and this is not surprising because of two reasons. First, the culture in the UAE is still based on a male-dominant culture, and second, because ADGAS's main

operation activities are based on Das Island where the entire workforce is mainly males, and females are not allowed to reside, and the island is not big enough to accommodate family living. The results also show that nearly 27% of the respondents are in the range of 21 to 30 years old, which is in line with the Emiratization directive, which encourages the increase in the uptake of young UAE university graduates and school leavers. This percentage is also reflected in the minimum number of years of experience (42%) when compared with the expat respondents. The expats make up just over 50% with more years of experience and also much older (older than 40 years) than the young UAE employees. This may be referred to as culture clash between old (generation X) and young (generation Y), experienced versus inexperienced, and willing to learn and not willing to share knowledge. Tzong-Der Horng (2014) showed that demographically, there were significant differences in the perception of KM, with male and middle-age showing a more positive perception than female and younger respondents. The present study partially agrees with Tzong-Der Horng (2014) findings in that experience resides within the older local and expat generation without differentiation between male and female. Furthermore, the present study did not consider this point in the analysis. There were no significant differences between participants' divisions regarding OC or in their LSs. However, there were significant differences in the KM, $F(5, 328) = 2.486, p = .031$. An average of 74% of the respondents agreed that the culture in ADGAS emphasize on stability, efficiency, and control with smooth operation coupled with adhering to procedures while 20%, however, agreed to statements 2 and 10, which are related to innovation and risk-taking.

8.2.1 Organization Culture Division Comparison

Many theories were formulated suggesting that OC is an essential strategic resource in achieving and maintaining continuity and success of organizations and had been connected to KM, innovation, and information technology (Michelle et al., 2004).

The study aimed to find out the dominant type of OC that exists in ADGAS, taking into account the multinational workforce. Each division is made up of different nationalities, and also, some of the senior staff and management come from different cultural backgrounds. It is worth mentioning here that most of the senior and supporting staff surveyed in this study is expats, and as such, it was anticipated that there will be noticeable differences in the results from among the six divisions. When examining the results (Tables 29–34) division-wise, it was found that the FD and HR are the same in their culture trends whereas operations, maintenance, and IT follow the same pattern. The ED, on the other hand, did not match any of the other divisions' trends. It may generally be stated that ADGAS culture emphasizes stability, efficiency, and control.

The *t* test comparison between senior and supporting staff (Table 35) revealed that there are no significant statistical differences generally with regards to organizational culture; however, it was noticed that there is a difference in adhocracy ($p = .017$) and market ($p = .028$).

The study revealed that hierarchy is the most dominant culture in all six divisions followed by clan culture (Table 4) where the mean average is 3.7569 and 3.6625, respectively. The clan culture is most obvious in the divisions with a large number of staff from the UAE. Hierarchy culture focuses on internal efficiency and cooperation whereas clan culture also focuses on internal issues with more inclination toward flexibility rather than stability. The main trends of clan culture are teamwork and commitment between and toward the employees. Market and adhocracy are the least influential cultures in the organization. Market culture is

known to be control oriented and focuses on externalization and is more rigid while adhocracy culture focuses on externalization with emphasis on flexibility and change. The hierarchy culture is strongest in OD compared to MD (Table 28), which once again matches the nationality makeup of the population in both divisions. Operation is a crucial division in the sense that it must follow rules, procedures, and regulations to run the plants safely and maintain production. In maintenance, the majority of employees are expats compared with operations whereas surprisingly, market culture is found to be the second strongest culture in the ED. This may be due to the fact that engineering functions as a service provider to other divisions much in the same way as the IT division. This shows agreement to Jones et al. (2011) in the fact that the three cultural types, with the exception to adhocracy culture, have an impact, but the present finding does not put them in the same order. Furthermore, the present results confirmed similar findings to those reported by Al Adaileh (2011). Mozaffari (2008) showed that the dominant culture in Iranian universities is a hierarchy culture and that the desired or preferred culture is adhocracy. This shows resemblance to the national culture that is based on Islamic principles as discussed earlier in chapter two.

Clan culture is the second strongest culture in OD and equally weakest in the ED, FD, and MD. Comparatively, market culture is stronger in the operations division and is weakest in IT division due to the fact that production is essential to marketing the product. Finally, adhocracy is equally strong in operations and HR but is weakest in IT. Generally, clan culture is found to be dominant in operations, HR, and IT, which again shows the influence of the UAE employees and their culture on the divisions in which they are the majority. The present study showed that there is a balance between the first and second dominant cultures in ADGAS that may suggest congruence between OC and LS which is reflected on KM and performance as will

be explained under KM below. Although adhocracy culture is weakest overall except in operation and HR, it is characterized by a dynamic, entrepreneurial, and creative workplace where the effective leadership is visionary, innovative, and risk oriented (Mozaffari, 2008). This is in agreement with the present findings since the dominant leadership in ADGAS is a transformational one.

Alireza (2013) mentioned the work of Tojari et al. (2011) in which it was concluded that transformational leadership has a significant positive influence and effectiveness on OC, whereas transactional leadership has a direct and significant negative impact on organizational effectiveness and has an indirect and significant positive effect on OC. This is in agreement with the present study that showed that the dominant leadership is transformational followed by transactional and has a positive relationship with OC as will be discussed below.

Eckenhof and Ersbova, 2011 stated that the leadership in adhocracy culture acts as a good enabler for networking unlike market culture which is driven by rivalry rather than unity; the process of networking is low since the leader is driven by winning and pays little attention to establishing an environment based on warm and friendly relationships. Their work showed that hierarchy culture provides the lowest support for intra-organizational networking since the leaders prefer control and power which destroys trust. This is also true in the present case since clan culture tends to nourish mistrust, and hierarchy culture focuses on procedures and rules rather than on people thus hindering effective KM and sharing.

The literature shows that OC and leadership had been separately linked to organizational performance in most studies, with few critical studies exploring the link between the two and the impact that this link might have on managerial effectiveness. The study showed that hierarchy, clan, market, and adhocracy cultures have significant relationship to knowledge management in a

descending order. On the other hand, transformational and transactional leadership have a significant relationship to KM as well as organizational culture thus revealing a good deduction; the link has an overall effect on ADGAS performance.

8.2.2 National Culture versus Corporate Culture

If we compare Iran and UAE using Hofstede's dimensions of national culture, we will find similarities in that UAE is collectivistic and works and cooperates better as a team although at top management, it tends to be more individualistic in nature. However, the collectivistic dimension in Iran is questionable as other researchers found that it could be individualistic instead. Alireza et al. (2013) mentioned Namazie's (2003) findings that showed that Iranian national culture is moving fast toward Western culture in almost all dimensions except for collectivism and long-term orientation. All dimensions of NC are significantly related to adhocracy culture and that OC in Iran does not allow leaders to take risks due to international sanctions whereas in ADGAS, risk-taking is at minimum since rules and procedures are governing. Furthermore, the adhocracy culture does not influence the masculinity versus femininity characteristics. Their study revealed that the current dominant culture in Islamic Azad University is a hierarchy with a preferred clan culture. Many studies have revealed that OC is positively and significantly related to organizational success and leaders' effectiveness (Chin-Loy & Mujtaba; 2007). Namazie (2003) pointed out that according to Cameron and Freeman (1991), no one particular culture fits an organization best than other cultures since the objectives and strategies of the organization determine the best fit, which is confirmed in the present findings that there is more than one culture existing even within the different divisions investigated. Al-Khalifa and Aspinwall (2011) investigated the degree of compatibility of the

Arab culture in industrial sector in Qatar and found that a mix of two cultures characterized many organizations.

Alireza et al. (2013) showed that clan culture indicated significant relationship in terms of individualism versus collectivism and power distance. Additionally, adhocracy and all the domains of NC showed significant relationship and that leaders are creative and take risk whereas in hierarchy culture, the leaders encourage formalized and structured work environment and demonstrated significant relationship with uncertainty avoidance and individualism and masculinity versus femininity, and that market culture has a relationship only with uncertainty avoidance. This again resembles some of the findings in this study; ADGAS, as explained above, has a dominant hierarchy culture, following rules and procedures, not risk oriented, and dominated by masculinity dimension with adhocracy having the lowest relationship.

Kaur et al. (2012) stated that there is a need to consider the cultural factors that are critical to promote effective KM, in order to keep ahead with the pace of change in terms of creativity, innovation, and competition. The sociocultural factors that affect KM are culture, power relations, norms, reward system, and management philosophy. The present finding revealed that ADGAS's mix of clan and hierarchy culture, combined with the power of tribal relations and family-like atmosphere and the presence of transactional leadership, should promote creativity and innovation. However, because of the dominant hierarchy culture that showed the least relationship to KM and lack of trust creates an obstacle toward achieving the same, the author quoted the work of Tseng (2010) and stated that adhocracy culture creates an environment where people can learn, be creative and innovative, and improve organization performance and value. The HR and operations divisions in ADGAS showed a strong positive relationship to adhocracy, and in these divisions, KM is strong. They also referred to the work of

Ardichvili et al. (2006), who explained that the differences in knowledge seeking and sharing are due to factors such as the degree of collectivism, competitiveness, importance of saving face, in-group orientation, power and hierarchy, and communication modes. Again, the present findings point out to few factors such as hierarchy, collectivism, and saving face.

Michelle et al. (2004) mentioned the work of Barrio (1999), which showed that to be an effective learning organization, it is essential to develop a strong clan culture with values that support innovation and risk-taking in a traditional, stable environment. ADGAS has a clan culture, however, the nature of its operations does not allow much room for risk-taking but is striving to implant a strong learning and development environment through its implementation of a number of schemes related to people's learning and development such as CAMS, CAS, and leaders of tomorrow.

It is known that the existence of a knowledge-friendly culture is the most important factor in knowledge management implementation. It has been coined that OC is a strong strategic KM enabler based on the fact that it motivates, encourages, and supports KM processes at the individual, group, and organizational levels. Sharimllah et al. (2009) showed that market and adhocracy culture recorded a higher correlation followed by clan and hierarchy culture, respectively; however, the findings of the present study showed that hierarchy has the highest correlation followed by clan, market, and adhocracy, respectively. The strong relationship between OC factors and KM implementation and sustainability should not be underscored. OC should adapt KM, including motivation, education, performance, training and learning, trust, values, and beliefs to encourage and support sharing and reuse of knowledge (Gomezelj et al., 2011). Ahmed et al. (2009) referred to the work of Obenchain (2002), which concluded that adhocracy culture is more effective in organizational innovation than other investigated cultures.

This is in agreement with the present results that indicated that adhocracy has the lowest relationship and that both hierarchy and clan do not create an effective and inducing environment for successful implementation of KM.

Unlike China that has over 5,000 years of history (Yun Lu, 2013), the UAE had been affected by Western culture along with the trend of globalization but perhaps not to the same extent. However, it may be stated that ADGAS's culture may have been influenced by both traditional and modern cultures leading to the formation of an organization culture unique to itself. ADGAS with its international mix of expats from various disciplines and cultures exhibits huge cultural differences that can either foster a suitable environment for creativity and innovation or can form a barrier that leads to difficulties and miscommunication and that depends on the status quo of the moment and on the changes needed in leadership. There must be trust and trustworthiness to be able to share knowledge. This is related to the Arab culture which is a clan culture where you share information with those with whom you have a common interest and whom you trust. Socialization in the Arab world (Majalis) is an effective vehicle for exchange of tacit knowledge between individuals.

Ahmed et al. (2009) studied OC and its relation to development indicators. They concluded that both clan and market cultures are the dominant cultures whereas hierarchy culture is the least dominant. They revealed that most of the development indicators are associated with clan, market, and adhocracy cultures. This is contrary to the present findings that revealed that even with a hierarchy culture and clan culture as the two most dominant cultures, they play a role as a development indicator within ADGAS. Clan culture was characterized by respecting traditions, morals, and sense of family orientation associated with competitiveness and excellence that is in agreement with the present findings.

Hamidifar (2012) stated that cultural and ethical applications of modern science based on Islamic science and idea of knowledge is a top priority in fostering constructive and productive knowledge-based society. The mobilization of the power of Islamic culture requires high quality scientific research and teachings and social responsibilities and ensuring women's participation in higher education. This study did not set out particularly to investigate this point; however, there are indications that ADGAS is tackling this issue through its present leaders of tomorrow that caters for the females' portion of its workforce taking into account the Islamic values. Hamidifar mentioned that hierarchy organizational culture—similar to ADGAS—is a reflection of Iranian national culture that is founded on the basis of family structure that incorporates Islamic values and principals which support equality in the family and society.

Many studies and surveys indicated the idea that leaders need to adopt all four cultures and managerial styles depending on the current operation requirements and objectives of their organization. Leaders are considered to be effective when they show ability to handle different situations demanding competing roles. Leaders need to promote a dynamic cultural environment to emphasize trust and loyalty, personal involvement and teamwork, cohesion, empowerment, and commitment. Many studies have revealed that OC is positively and significantly related to organizational success and leaders' effectiveness (Chin-Loy & Mujtaba, 2007).

8.2.3 Leadership Styles Division Comparison

Both transformational as well as transactional leadership styles are quite strong in ADGAS. The difference between transformational and transactional leadership styles is very significant in the MD and more or less negligible in all other divisions. The results showed that transformational leadership is the dominant style of leadership in all six divisions with a mean

average value of 3.5346. Transactional leadership is the second dominant style (3.5012) whereas passive-avoidance style is insignificant, as shown in Table 6. Transformational LS is equally strong in HR and operations, followed by IT. It is equally felt in the maintenance and the EDs and insignificant in the FD (Table 37). Transactional LS, on the other hand, is strongest in the operations division and HR and weakest in the ED and FD, respectively, whereas it is insignificant in the MD.

Sixty percent of the surveyed population agreed to the statements on leadership style that showed that the leadership in ADGAS is satisfactory, expresses confidence, effective, and optimistic. Transformational LS is strongly felt due to the fact that the senior staff encourages learning and acquiring new problem-solving techniques. This is further enhanced by the adaptation of failure investigations, root cause analysis, and lessons learned practices, which enhance the learning process. Transformational leaders, as mentioned earlier, do advocate continuous learning and development. Transactional leadership is also practiced because some leaders do adopt a rewarding strategy based on solution-finding teams, encourage new suggestion through exchange of knowledge and ideas, Mubadala, appraisal system, and rewarding outstanding performance. Furthermore, the culture of sharing knowledge among divisions through investigation team formations, presentations, participation in forums, conferences, and seminars either locally or internationally and by division cross-posting is not well established.

The independent *t* test comparison was conducted, and the results concluded that there were no statistical differences in perception between senior and supporting staff regarding leadership styles as shown in Table 44. Passive avoidance, on the other hand, does not enjoy

popularity among any of the divisions since ADGAS is always seeking new technologies and emphasizes the objective of learning through its CAMS and CAS programs.

Mozaffari (2008) also demonstrated that there is a relationship between OC and LS, and the more congruence this relationship is, the more effective is the managerial skills. Sharimllah et al. (2009) noted that the style of leadership with a tendency to hoard knowledge as propriety and thus is not to be shared creates a culture in which managing knowledge is definitely a challenge and requires a knowledge-friendly culture. ADGAS with the different cultural backgrounds does support knowledge hoarding due to mistrust between expats and locals, and also, knowledge is not cascaded to the junior staff due to power distance and style of leadership with tendency to hoard knowledge as propriety . To manage knowledge in such culture is definitely a challenge and requires a knowledge-friendly culture.

8.2.4 Knowledge Management in the Six Divisions

The highest response (28%) to the questionnaire was from the operations division; then again, this is not surprising as it is one of the biggest divisions in the organization with a high percentage of UAE nationals. About 65% of the respondents answered positively to the part of the questionnaire related to KM indicating that ADGAS does have a KMS in place and is being implemented. This confirmed that ADGAS CAMS for engineers and CAS for technicians, which was launched over eight years ago to enhance the competencies of the young UAE employees, are paying dividends since all the young UAE recruits do take part in this initiative. The program takes about three years, and most of the senior and management staff do take part in its implementation by acting as coaches, mentors, and assessors whereas experienced staff act as TTs, OJTs, and SKT officers. Again, a culture clash may be present between those who are

active and those who are passive in the implementation of the competence assurance program. This is clearly understood as mentioned earlier that the expats find it difficult to share their knowledge and expertise in fear of losing their jobs to the staff they are training.

Knowledge sharing has a significant role in exchanging different ideas and providing different sources of formation, and to achieve effective KS, there must be an atmosphere of trust and collaboration and removal of bureaucratic and cultural barriers (Gomezelj et al., 2011). Poor socialization and externalization of KM that could hinder the transfer of tacit to implicit knowledge may be attributed to poor leadership. A culture of knowledge hoarding creates obstacles in knowledge sharing. Ineffective leadership that enhances restrictions on KM processes must be the cause for poor performance and competitiveness in the global market (Kaur et al. 2012). It is known that LS plays an important role in KM initiatives, and KS complements knowledge residing in databases, thus making individual knowledge an organization's knowledge. Leaders should preach the importance of knowledge sharing since it is an important tool for decision making and also benefits them and the organization. Leaders should find ways to integrate KS into their strategies with the aim to build a KS culture (Csepregi, 2004). Leaders are becoming more aware of the importance of KM and the role it plays in success, growth, and sustainability of organizations (Gomezelj et al., 2011).

Table 11 shows that creating, capturing, organizing, and storing knowledge is strong overall; however, there is a significant difference on the perception of KM in terms of applying and disseminating within the divisions. There is no significant difference in capturing and organizing knowledge. Table 10 generally shows that there are gaps between the different knowledge processes. Knowledge creation is highest in HR and lowest in IT; capturing knowledge is equally highest in HR and operations divisions and is lowest in the FD and IT.

Organizing knowledge is highest in the operations divisions and lowest in the FDs. Storing knowledge is highest in the operations division and lowest in IT. Dissemination of knowledge is highest in the operations division and lowest in IT. Applying knowledge is highest in the operations division and lowest in IT. These differences could be attributed to a number of factors such as demographic nature, function, culture, and LS in each division as will be explored below. The results also indicated that between 60% and 70% of the respondents agreed to all the elements in the questionnaire that are related to KM. Individually, the division's consensus on the six processes of knowledge varied in the following descending order: operations divisions, 73.3%; HR, 68.5%; ED, 65%; MD, 62.8%; FD, 56.2%; and IT, 51%.

There is also a difference in knowledge creation between HR, finance, and IT, with the HR division being in the lead (Table 10). HR is the custodian of the CAMS, CAS, and training in the organization, and one of its main functions is learning and development, and as such, it should be heavily engaged in searching and creating new knowledge. On the contrary, this is not reflected in the findings because the average of all knowledge processes is lower than that of operations. It is also somewhat surprising to find out that IT is poor in all knowledge processes. This could be due to the fact that IT is a service provider rather than a marketing division. IT provides new software and technology for its users unlike other divisions who seek, create, and store knowledge gained from their experiences and that of others in the same field such as engineering, operations, and maintenance. The FD, on the other hand, is somewhat similar to IT in that it is a user rather than a participant in all other knowledge components. This conclusion might be somewhat misleading if the number of respondents from each division is taken into account. Table 1 shows that the least respondents were from IT and FD if compared with other divisions. The operations division, on the other hand, is more engaged in finding new knowledge

and systems to streamline its operational functions and to train its employees. The results also indicated that the operations division is better in all knowledge processes than IT.

The present study had shown that there is an improvement in KM in comparison with that carried out by Milton (Table 17). Milton (2010) conducted a survey regarding KM in the MD and found out that active learning, communicating, capturing, and applying knowledge are low while deploying best practices, procedures, and standards, and organizing and accessing knowledge are high when compared with best international practices. The report stated that the MD scored high in comparison with other companies although it did not have a KM program at that time. Furthermore, it was pointed out that it is important to ensure that tacit knowledge transfer must take place. An increase in the number of young UAE nationals will put extra load on the expats—who take the role of TT, OJT, subject matter experts (SMEs), SKT experts, coaches, and mentors—whose numbers will diminish because of Emiratization, retirement, or better offers. Tacit knowledge transfer, as mentioned before, relies on a high level of trust and motivation. The huge cultural gaps need to be closed by building strong trusting relationships to form the basis for a smooth and effective knowledge sharing.

Table 10 generally shows that there are gaps between the different knowledge processes. Knowledge creation is highest in HR and lowest in IT; capturing knowledge is equally highest in HR and the operations division and is lowest in FD and IT. Organizing knowledge is highest in the operations division and lowest in the FD. Storing knowledge is highest in the operations division and lowest in IT. Dissemination of knowledge is highest in ODs and lowest in IT. Applying knowledge is highest in operations divisions and lowest in IT. These differences could be attributed to a number of factors such as demographic nature, function, culture, and LS in each division, as will be explored below. The results also indicated that between 60% and 70%

of the respondents agreed to all the elements in the questionnaire that are related to KM. Individually, the division's consensus on the six processes of knowledge varied in the following descending order: operations division, 73.3%; HR, 68.5%; ED, 65%; MD, 62.8%; FD, 56.2%; and IT, 51%.

Mechanisms of knowledge sharing alone such as lessons learned and post-project reviews are not enough for KS, but OC plays an effective role as well. Cultural fundamentals that influence knowledge sharing are the following: 1) volume of interaction, 2) level of collaboration and collective responsibilities, and 3) orientation or seek out expertise knowledge (Wiewiora et al., 2012).

The authors showed that in a market culture, there is evidence of hesitancy and resistance to share knowledge contrary to clan culture in which people is open to knowledge sharing. However, they did not explore the other two types of culture. Their findings showed that market culture with values such as competitiveness, achievement, and performance are not effective in KS while clan culture with its collaborative atmosphere encourages people to communicate and create a friendly, noncompetitive surroundings that are likely to promote KS.

8.2.5 Knowledge Management Assessment Using the SECI Model—Limitation

The analysis of the SECI results (Table 19) showed that KM by socialization, externalization, combination, and internalization is generally strongest in the operations division and weakest in IT. The operations division is strongest in all indicators whereas IT is weakest in internalization (0.38), combination, externalization, and socialization, respectively. Individually, operations scored highest (0.70), followed by HR (0.66), MD (0.62), ED (0.61), FD (0.54), and finally, IT (0.45). It is not surprising to notice that the operations division is strongest because it

is part of the UAE culture where the young nationals socialize in *Majalis* (social gatherings) and exchange knowledge in the old traditional way, and the same can be stated for HR. This is not shared in IT and FD because they are based on the mainland, and the employees leave after working hours to spend the rest of the day with their families. The survey showed that socialization and externalization are the main processes used to share knowledge. Socialization is predominant in Das Island because the employees spend most of their time on the island away from their families unlike those working on the mainland. Externalization is the second predominant means of sharing knowledge because certain divisions on Das rely on seeking expertise from outside such as contractors, consultants, and foreign advisors. It was also revealed that socialization (0.64) is strongest followed by externalization (0.61), combination (0.57), and internalization (0.55).

The question is whether there is a difference in opinion regarding KM between senior and supporting staff. The *t* test results (Table 26) indicated that generally, there are no differences; however, there is a statistical difference between application and dissemination of knowledge with senior staff showing better indicators. Furthermore, both senior and supporting staff showed no difference based on the SECI analysis except on the combination parameter.

The results showed that KM is strongest in the operations division due to the majority of locals who are involved in the CAMS and CAS programs. Even though the overall organizational culture is hierarchy, in operations division, it was shown that there is an influence from clan culture on KM which is indicated by the SECI model where socialization is highest as shown in Table 19. Factors such as sign of reciprocity, common areas of interest and expertise, continuous exchange and common targets, personal relationship, and trust are essential for effective knowledge sharing.

Ecenhofer et al. (2011) referred to Haldin-Herrgard (2000), who mentioned that diffusion of tacit knowledge is supported by direct interaction, networking, action learning, and apprenticeship and is mainly based on trust. It is not easy to transmit all knowledge types since intermediary cognitive capacities, related skills, and time are necessary together with the ability to process information.

8.3 Verification of the Proposed Hypotheses

One of the main objectives of these results is to test the proposed hypothesis and either prove or reject them. The relationship between culture, leadership, and KM was studied using the data from the six divisions in different configurations, and the following were the observations made. The SEM model used in this research was used to test the correlation coefficients for the 13 variables, and the results are shown in Tables 3 to 6. Referring to Table 7 in Chapter 4, it was clearly shown that the following relationships do exist:

- KM as a single construct is strongly related with culture and leadership.
- Individually different culture types present in the divisions are also strongly related to KM.
- Individually different LSs present in the divisions are also strongly related to KM.
- Culture and leadership are also related.
- The relationship between the OC types and KM was strongly positive except for adhocracy culture.
- The relationship between the LSs and KM was strongly positive except for laissez-faire (passive/avoidant).
- The relationship between LS and OC types was strongly positive.

Table 45 below summarizes the entire hypothesis postulated for this study. As mentioned above, hypotheses H1, H3, H4, H5, H6, H7 were supported and H8 was supported with negative effect. H2 was not supported.

Table 45 - Hypothesis Results

H1	Clan Culture has a significant effect on KM.	Supported
H2	Adhocracy culture has a significant effect on KM in AG.	Not supported
H3	Market culture has a significant effect on KM in AG.	Supported
H4	Hierarchy Culture (Industry Based/Oil and Gas Culture) has a significant effect on KM.	Supported
H5	Transformational leadership has a significant effect on KM in AG.	Supported
H6	Transactional leadership has a significant effect on KM in AG.	Supported
H7	Passive-avoidant leadership has a significant effect on KM in AG.	Supported (negative effect)
H8	Leadership has a significant effect with OC in AG.	Supported

Chapter 6

Implications and Suggestions for Future Research

9.1 Introduction

The literature has shown that there is a significant link between cultures and leadership in general and how this affects organizations' performance and outcome. In addition, it showed that KM is an important business initiative that is influential in sustaining organizations' competitiveness and giving it the edge to be successful. Hence, it can be said that for implementation of an effective KMS, there must be a perfect compatibility between the culture and leadership of the organization and its KMS. The present study was set out to identify the type of culture and style of leadership within ADGAS and how they relate to KM, sharing, and transferring. Not only that but also to identify the pitfalls and obstacles that hinder the success of such a match that can lead to a fruitful implementation of an effective KMS. ADGAS spares no efforts or resources to enhance its knowledge capabilities in terms of new technology, sharing and transferring skills, and knowledge to improve its existing KMS and gain that competitive advantage. This is in line with the requirements of the present global economies, which are mainly knowledge based. The multibillion dollar projects requires the UAE to be prepared to meet this challenge by advocating and developing strong knowledge-based communities to achieve superior performance and to remain globally competitive.

9.2 Implications

9.2.1 Influence of Foreign Culture

ADGAS, as mentioned earlier, relies on foreign skilled and semiskilled workforce that imports their own culture, which without a doubt does affect the entire OC. Not only that but also the indigenous culture, that is, the UAE nationals together with the style of leadership will also influence the organization's culture, which in turn will have an impact on its KMS. ADGAS also relies on these expats to train and transfer knowledge and skill to the young UAE employees, most of which act as coaches, OJTs, SKT officers, and SMEs. Emiratization also affects the motivation and moral of both the expert expats and the young UAE nationals. Following Hofstede's argument, it was shown that the collectivistic Arab culture has an influence on AG culture, and it is anticipated that this influence will increase as Emiratization increases to 75% accompanied by attrition of the expats unless the leadership brings about the necessary changes to align itself with globalization and at the same time preserve its national culture. The present study is also in agreement with Whittington and Tammy (2009) in that AG culture is influenced by its employees (tribal bondage) and will continue to do so as Emiratization increases. The implication here will be how this change will influence the OC. Will nepotism and *wasta* increase in a positive direction or will it have a negative influence?

The level of trust between these different cultures does have an impact on knowledge sharing and its transfer. The research highlighted that knowledge sharing is conducted through socializing among the UAE nationals, which only implies that there is still mistrust between the locals and the expats. To remove the concerns of the expat workforce regarding their job security and motivate them to depart with their tacit knowledge and transfer it to the young UAE employees, ADGAS should advocate policies and procedures to address such concerns. It is

essential to have a very transparent relationship between the UAE locals and the expats to assure a fruitful relationship that benefits both parties, which consequently enhance a smooth transfer of knowledge and skills. ADGAS should be aware of its dominant culture as a catalyst for KS and managers by supporting and creating a sense of belonging, enhancing collaboration among team members, and removing the competitive barriers will achieve its knowledge advantage of being successful.

9.2.2 Impact of ADGAS Culture and Leadership Styles on Knowledge Management

It was noticed that when OC types were linked to KM using the SEM test, it was found that the hierarchy culture has the strongest effect on KM followed by clan, market, and adhocracy culture (Table 7). It is known that hierarchy emphasizes rules, policies, and standard operating procedures to maintain stability, performance, and efficient operations. Clan culture places strong emphasis on team development, inward focus with concern on integration, and stresses flexibility and discretion. Adhocracy, on the other hand, places value on creations and innovations and has a more outward focus similar to market culture in terms of growth and development. Market culture is known to be result oriented, somewhat similar to hierarchy, and focuses more outwardly.

Generally, effective leadership advocates efficient performance, by focusing on learning to enhance acquiring knowledge and skills and sharing and transferring this knowledge among the team. It was noted that leaders sometimes adopt more than one style of leadership depending on their perception and understanding of leadership and the situation at hand.

The SEM analysis revealed that transformational LS is the dominant style followed by transactional LS and that it has more influence on KM (Table 7). This is in agreement with the fact that hierarchy culture does promote both transformational and transactional LS as revealed

from the study. Clan culture as the second dominant culture also fosters a transformational LS, which encourages and promotes creativity, develops of people's competencies, increases self-confidence and motivation to achieve higher performance, and promotes learning and sharing of skills and knowledge. Adhocracy and market cultures also match with transformational leadership, and this is reflected in the findings of this study, that is, both hierarchy and clan do support KM. It is known that transactional leadership promotes interaction and motivates people by rewards and exchange of knowledge to improve the efficiency of learning.

This confirms that the culture of learning within ADGAS is following the Arab culture, that is, learning through social gatherings where tacit to tacit knowledge is exchanged although the study showed that the two main dominant cultures in ADGAS were hierarchy culture followed by clan culture (Table 4). Such culture should have resulted in knowledge sharing through internalization rather than by socialization as found in this study.

The results indicated that ADGAS does create knowledge by seeking it from outside sources such as business partners, consultants, and contractors. Both capturing relevant and valuable knowledge and filtering also need to be improved to meet the organization's requirements. Finally, application of knowledge is needed to create new knowledge through research and development. It was somewhat surprising to find out that only 65% of the respondents who were from senior and middle management and technical and supporting staff are aware of the existence of a KMS in ADGAS. Not only that, but there is also a great discrepancy between the divisions in their utilization of the KM processes.

KM in ADGAS should be looked at as a set of strategies, plans, and approaches to create, store, and disseminate knowledge using other related assets to allow knowledge to be shared and effectively applied to enhance performance. To achieve this, it is essential to have the right

supporting LS (Skok & Taher, 2010). The young generation is aware of the learning initiative in ADGAS, which is championed by the transformational leadership in the company. For others who are not involved in the CAMS program and other learning initiatives, the survey showed that awareness is lacking and needs to be reinforced.

Emiratization will also play a role in the future culture and LS in ADGAS. The intake of more of generation Y and the exit of generation X might change the OC and create a knowledge and skill gap that must be addressed by the present leadership and the responsibilities to be transferred to the future leaders. The study showed that ADGAS has different cultures and LSs and unless some changes are made regarding the implementation of an effective KMS, the drainage of knowledge and skills will continue. It is always difficult to bring about major changes, and it will also take time for the organization to adjust to these new changes. Execution of strategies and achievement of objective and goals are greatly affected by the culture of the organization (Kefela, 2010).

To encourage more learning and knowledge transfer through a transformational leadership and a hierarchy culture, ADGAS should consider adopting some changes toward its OC and LS. There is neither one particular culture nor LS that will independently and effectively maximize its influence on KM. The present results show that effective implementation of KM cannot be independently influenced by neither one particular type of leadership nor one particular type of culture.

9.3 General Recommendations

Knowledge, without a doubt, is required to increase people's skills and expertise through learning and sharing. The findings in this study are supported by similar findings of Weir and Hutchings (2005) that knowledge sharing was found to be strongest in the divisions with a higher percentage of UAE nationals. Unfortunately, this sharing is still being carried out in the old traditional way, that is, in social gatherings *Majalis*. This is a major obstacle that needs to be addressed by ADGAS in terms of building trust and motivation for both the locals and the expats.

For ADGAS to reap the benefits of its vigorous efforts in having a successful and beneficial implementation of a KMS, there must be some changes made in the OC and apply these changes to retain its knowledge and expertise. Leaders should regard their OC as a dimensional phenomenon and should strive to achieve a more flexible culture. In organizations that are characterized by control and direction in trying to implement customer relationship management, the glue that holds such organizations together is made of documentation, commitment, productivity, and external support. They found that the climate of organizations that is built on stability and openness is suitable to support implementation of a successful KMS.

Based on the findings of the present research, the following are recommended:

1. For ADGAS to have an efficient and effective knowledge transfer and sharing among its employees, it must strive to create a knowledge culture community and facilitate the proper means for learning to encourage creation and innovation.
2. To remove the level of mistrust between the expats and the locals, it is only imperative to investigate and examine the types of culture and LSs in other oil and gas companies in the UAE and GCC.

3. The lack of awareness of the KMS and its implementation requires a more aggressive approach to enhance the effectiveness of the KMS and its implantation across all divisions.
4. Closing the gap in the number of years of experience between the UAE employees and the expat population needs to be considered.
5. Organizations should analyze and plan their business strategies taking into account their current knowledge and the knowledge that they need in the future. Byosiére and Luethge (2004) stated that externalization processes create tacit knowledge, which must then be crystallized and shared with others to create new explicit knowledge. The development of a theory that integrates the CVF and the SECI could advance the identification of appropriate leadership roles. KM should be a part of the parcel of how to perform in an organization and must become an integrated aspect of the culture. Focusing efforts on IT solutions alone, although vital to KM, leads to failure since it does not include cultural value such as people and culture that are the primary enablers of a successful KM.
6. ADGAS should increase its creation of knowledge by internalization rather than by socialization or by a combination of the four parameters of the knowledge-creating cycle: transfer of knowledge from tacit to explicit by externalization through the experienced people and transfer of knowledge from explicit to tacit by internalization by the young UAE nationals. Furthermore, ADGAS is to enhance its capabilities in terms of disseminating and applying knowledge.
7. It is recommended that the leadership in ADGAS should increase its ability to encourage staff to reflect on learning and skill and knowledge sharing to enhance its performance and competitiveness.

8. Implementation of a strong and effective KMS alone is not enough for its success and benefits; it must be accompanied by knowledge sharing among its members. It is recommended that for an effective and smooth transfer of knowledge and skills, it is essential to have a very transparent relationship between the UAE locals and the expats. This will dissolve the barriers and the uncertainty among the expats and hence will introduce a sense of job security for them.
9. It is recommended that ADGAS should intensify its awareness regarding the KMS and force a change toward its implementation since 65% of the respondents are aware of a KMS in ADGAS. There seems to be a great discrepancy between the divisions regarding the six processes of the knowledge cycle. It is recommended that all divisions within ADGAS should have the same understanding and strengthen all the processes. In addition, other oil and gas companies should carry out similar studies to either support or refute this observation.
10. Therefore, it is recommended that ADGAS should address this concern and link the LS to encourage more learning and knowledge transfer through a transformational leadership and a hierarchy culture.
11. Kaplan and Norton (1992) developed the balance scorecard which is an instrument that concentrates on performance and emphasizes strategy and vision at the center of management rather than on control and considers innovation and learning as one of its four key indicators of success. ADGAS should structure roles and accountabilities and establish an effective KMS and put in place a monitoring and measurement process to assess how KM is practically implemented and is beneficial to performance. KMS should become part of the normal business and not an add-on. Top management and leaders

need to play an important role in shaping the culture of ADGAS and must be effective in enabling KM.

12. ADGAS needs to analyze and plan their business strategies in terms of the knowledge it currently possess and the knowledge needed for its future goals. Leadership roles should include development of knowledge creating and sharing culture to bring about organizational change and development. Furthermore, these strategies should cater and promote for a knowledge supporting culture to avoid obstacles and failures. It is known that LS plays an important role in KM initiatives and KS complements knowledge residing in databases, thus, making individual knowledge an organizations' knowledge and as such ADGAS should try to cultivate on that.
13. ADGAS should assign a KM champion and other focal points from different divisions in order to align and standardize a knowledge flow/transfer process where the young UAE nationals play more active roles. The captured knowledge is to be fed into the CAMS/CAS competence framework. The trainees should be given training in knowledge harvesting and elicitation, which will give them a role in the knowledge transfer process, which at present is slow and may not exist in all divisions.
14. The learning and development department should continue to be the owner of the KMS and to play a role even after the initial training is finished. The SKT functions should be given a role in the process and allow continued monitoring of the progress of the trainees . Such a committed team will create a committed culture of learning.
15. LS & KS. Creation of a solid intra-organizational network requires the correct leadership style that is based on social skills such as perception, persuasion and influence, social adaptability, and emotional intelligence. Furthermore, strong ties are needed for sharing

knowledge and experiences; hence, it is essential to ensure good relation among the staff of the organization.

Eckenhof and Ersbova (2011) study showed that clan culture, with its flexibility, discretion, internal focus, and integration, forms a good basis for the support of a growing intra-organizational network. The characteristic of the leadership in such a culture which is the mentor or the father figure requires the willingness to share information, experience, and best practices with the team.

9.3.1 Recommendations for Future Research

It is recommended that this research be conducted in other ADNOC group of companies and other oil and gas companies in the Gulf States. The research survey should cover a larger population including more divisions and should also include interviews to give a better insight to the problem. A survey that focuses only on the young trainees should be carried out to see how effective the implementation of KMS is. Finally, these results need further investigation and to be tested again in other oil and gas companies and other different organizations within the UAE context. How globalization did affect the UAE culture and how this is reflected in UAE corporate culture? Chang and Lee (2007) pointed out that acquisition and diffusion of knowledge are significantly affected by innovative and supportive culture, that to successful implement knowledge management, it is important to have positive and effective leadership characteristics

Chapter 7

Conclusion

10.1 Introduction

This research was set out to examine and evaluate the relationship between OC and LSs and KM, using the CVF to assess the impact of OC and LS on KM in oil and gas companies in the UAE.

The present study showed that the six AG organizational divisions selected for this study are strong in hierarchy culture with significant cultural difference among the divisions. The strength of the dominant culture (hierarchy) is noticeable in the operations division and weakest in the MD. Adhocracy culture is weakest overall. It is generally known that flexible and adaptable cultures are more advantageous in comparison with stable and refusal/rigid ones in affecting employees and organizations (Sayed et al., 2012).

Sharimllah et al. (2009) studied the relationship between KM processes and OC and found that KM processes exhibit significant positive correlations with all OC types. They referred to many researchers (Chong, 2006; Davenport & Prusak, 1998; McDermot & O'Dell, 2011; Nonaka & Takeuchi, 1995) who arrived at an agreement that the existence of a knowledge-friendly culture is the most important factor in knowledge management implementation. It has been coined that an OC is a strong strategic KM enabler when based on the fact that it motivates, encourages, and supports KM processes at the individual, group, and organizational levels.

Clan culture supports creation of solid networking, that is, knowledge. Its values of flexibility, discretion, internal focus, and integration form good basis for supporting intra-organizational network therefore enhancing knowledge sharing. This culture emphasizes the

involvement and participation of employees to foster empowerment and commitment which in turn deliver effectiveness.

KM is quite strong as assessed by each factor as shown in Table 10 above. However, the identified gap between the knowledge creation and application is important and should be properly addressed. In reality, the application of knowledge takes longer time, and the same is reflected in the data above.

The division-wise assessment of KM highlighted that there is a significant difference in KM practiced in the six divisions investigated in this study. KM is strong in the operations division and weak in the IT division. The difference between various KM activities is also significant. The difference between knowledge creation and knowledge application is lowest in the operations division and highest in the IT division. Overall, 60%–80% employees agreed for all statements on KM. ADGAS needs to improve disseminating and applying knowledge to create new knowledge. The assessment of KM based on the SECI model highlighted that both socialization and externalization are strong and internalization is weak. It is interesting to note that both transformational as well as transactional LSs are quite strong in the organization.

The division-wise assessment of LSs highlighted that LS in different divisions is significantly different. The difference between transformational as well as transactional LSs is very significant in MD and more or less negligible in all other divisions. The results showed that hierarchy and clan are both strong in operations and weakest in maintenance, however, with significant difference between transformational and transactional LS. Details analysis revealed that although transformational leadership should foster innovation and risk taking, the leaders did not act as father figures or mentors but rather acted as bosses (Table 36).

The results indicate that knowledge creating, capturing, organizing, and storing are significant in AG with hierarchy and clan culture under transformational and transactional leadership. This finding confirms that hierarchy is a significant predictor of KM (Jones et al., 2011). It is in general agreement with Chin-Loy and Mujtaba (2007) and Lawson (2003) that there is a positive relationship between OC and KM program. The results revealed that the entire proposed hypothesis H1, H3, H4, H5, H6, and H7 were supported and found acceptable except H2 were not supported and H8 supported (negative effect). All OC types have a positive and significant relationship to KM, and all LSs have a positive and significant effect on KM and OC. It can be stated that KM is strongly related to both culture and LS and that culture and leadership are also strongly related to each other. Supporting evidence from the literature review in terms KM was highlighted and aided in answering the research questions. Furthermore, the literature review also supported the hypothesis postulated in this dissertation as described briefly below.

The present study concluded that there is a positive relationship between the three main variables investigated, which is in agreement with that reported in the literature by Schimmoeller (2010), Den Hartog et al. (2002), Al Sardieh (2012), and Mullins (2007).

The findings also showed that the Emiratization target is on the right track as indicated by the respondents confirming that there is a KMS in ADGAS. As to the X and Y generations, the results also concluded that 49.8% are Y generation and 50.2% are X generation, which is in agreement with ADNOC directives as stated earlier. The results are in agreement with Lawson (2003) in that capturing knowledge is essential in developing the other knowledge processes. ADGAS was found to be weak in disseminating and applying knowledge but strong in creating, capturing, organizing, and storing knowledge. For ADGAS to be actively involved in KM, it must make sure that all the knowledge processes are effectively applied. In reference to Handy

(1985), the results showed that ADGAS may be considered as having corporate culture rather than an OC due to the fact that 50.2% of the respondents are expats importing and adopting their own culture.

Poloties (2002) stated that transactional LSs are more effective in motivating and leading their teams by reward; the present study showed that ADGAS has two major styles of leadership, namely, transformational and transactional, and both are contributing to the KMS, which is also in agreement with Nguyen and Mohamed (2011).

The examination of ADGAS's culture revealed that it is hierarchal in nature but with clan type of culture as the second dominant culture and as such, the knowledge is shared through socialization, which is in agreement with Weir and Hutchings (2005). Not only that, but there is also agreement with Hofstede and Hofstede (2005) that ADGAS culture has a national flavor to it because it is based on collectivism, which is part of the Arab culture. It was also found that ADGAS LS sometimes influences the organization's culture unintentionally, as found by Whittington and Tammy (2009). It was further confirmed that Emirates do develop teams among themselves as mentioned by Skok et al. (2010). An interesting finding from the survey is that the respondent revealed that clan culture is a second dominant culture in ADGAS, which influences the hierarchy culture. This research did not attempt to study each culture type separately as advised by Cameron and Quinn (2006) but studied the four culture types together and found that it is possible to have more than one culture within an organization.

The results showed that there is a disagreement with the findings of Roper (2009), which showed that there is no clear relationship between LS, OC, and KM, but there is an agreement with his findings that leaders do have the ability to influence the level of commitment of the employees. Similar to the findings of Al Shurbagi and Bin Zahar (2012), the present study

showed that ADGAS has a dominant hierarchy culture associated with transformational LS. Furthermore, the regression analysis also confirmed a strong relationship between KM and transformational LS.

The results indicated that creating, capturing, organizing, and storing knowledge are significant in AG with a hierarchy and clan culture under transformational and transactional leadership. This finding confirms that hierarchy is a significant predictor of KM (Jones et al., 2011). It is in general agreement with Chin-Loy and Mujtaba (2007) and Lawson (2003) that there is a positive relationship between OC and KM. However, as proposed by Nonaka and Toyama (2004), the SECI model and different OCs with the different KM constructs are not statistically related. Hierarchy and clan cultures are primary and secondary dominant culture types in the organization, respectively. LSs most suitable for these cultures, namely, transformational and transactional, are strong. Thus, the LSs are congruent with OC.

10.2 Limitations

This research was based on one of ADNOC's operating companies with a somewhat limited population sample. Another limitation is the fact that no interviews were conducted to obtain more insight on how AG can improve on KM. This research gave more emphasis to human aspects; similar studies could be conducted with emphasis on IT and KMSs in other oil and gas operating companies.

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Appendix (1)

17/10/2012

Moosa Al-Murawwi
Doctoral Candidate of Abu Dhabi University

Dear SVP (A) and CEO of ADGAS,

Subject: Doctor of Business Administration – Survey in ADGAS

I am a student of Abu Dhabi University pursuing studies for the degree, Doctor of Business Administration. I am currently conducting research for my dissertation. The title of my dissertation proposal is "The relationship between organisation culture, leadership style and knowledge management in UAE Oil & Gas companies – a case study of ADGAS organisation". I would be grateful if you would permit me to conduct a survey in ADGAS.

The purpose of this research is to identify the relationship exist between organizational culture, leadership style and knowledge management process in UAE Oil & Gas companies. The implications of this study can be of significant value to ADGAS as it is preparing to implement knowledge management process. The findings could help ADGAS to assess that implementation of knowledge management process will be successful or will increase its competitive advantage in relationship to the current organisational culture.

The survey will reflect the views of ADGAS employees through a questionnaire to determine the type of organisational culture, leadership style and the different knowledge management process that are employed within ADGAS. This research will be conducted using all ethical research standards and procedures. The responses will be held in strict confidence and complete anonymity is guaranteed.

I thank you for your permission and approval to conduct this survey which will be of greatest importance to the success of this study.

Sincerely,



Moosa Al-Murawwi
Doctoral Candidate, Abu Dhabi University
Student No. 1012403

SVP (A): 

CEO: 

From: Mujtaba, Bahaudin [mailto:mujtaba@huizenga.nova.edu]
Sent: Tuesday, November 13, 2012 8:13 AM
To: Moosa Al Murawwi
Cc: moosaalmurawwi@yahoo.com; loy@nova.edu
Subject: RE: Permission to use the OCAI & KMAI Questionnaire - Dr. Chin-Loy and Dr. Mujtaba

Dear Moosa,

Thank you for the email and we wish you great success in your research.

On behalf of Dr. Claudette Chin-Loy and myself, you have our permission to use the survey as long as you cite it properly in your dissertation and any future publication.

And yes, please do share the final result with us and we look forward to reading your findings.

All the best.

Bahaudin

Dr. Bahaudin G. Mujtaba, Professor of Management
H. Wayne Huizenga School of Business and Entrepreneurship
Nova Southeastern University
3301 College Avenue
Fort Lauderdale, FL. 33314-7796, USA.
Phone: (954) 262-5045 Or (800) 672-7223 / (800) 338-4723 ext. 25045.
Fax: (954) 262-3974.
Email: mujtaba@huizenga.nova.edu
NSU's Website: www.nova.edu
Faculty Website: <http://www.huizenga.nova.edu/faculty/?id=837>

From: Moosa Al Murawwi [mailto:almurawwi@adgas.com]
Sent: Monday, November 12, 2012 10:15 PM
To: 'loy@nova.edu'; 'Mujtaba@nova.edu'
Cc: 'moosaalmurawwi@yahoo.com'
Subject: Permission to use the OCAI & KMAI Questionnaire

Dear Dr. Chin-Loy and Dr. Mujtaba

My name is Moosa Al-Murawwi, and I am a DBA student at Abu Dhabi University, United Arab Emirates. I am beginning work on my dissertation and would like to use the Organizational Culture Assessment Instrument (OCAI) and Knowledge Management Assessment Instrument (KMAI) questionnaire to determine the effectiveness of KM in different organizations.

I found that this questionnaire is an excellent one and will help me in my survey. With your permission I would like to use this for my research. If you wish, I could send you the result of my research.

I appreciate your support and approval.

Moosa Al-Murawwi
Abu Dhabi University

From: Chin-Loy, Claudette [mailto:loy@huizenga.nova.edu]
Sent: Tuesday, November 13, 2012 5:27 PM
To: Mujtaba, Bahaudin; Moosa Al Murawwi
Cc: moosaalmurawwi@yahoo.com; loy@nova.edu
Subject: RE: Permission to use the OCAI & KMAI Questionnaire - Dr. Chin-Loy and Dr. Mujtaba

*Thank you.
Sincere best wishes.*

Claudette

Dr. Claudette Chin-Loy
Assistant Director of Graduate Programs
Huizenga School of Business
(954)262-5169

From: Mujtaba, Bahaudin [mailto:mujtaba@huizenga.nova.edu]
Sent: Monday, November 12, 2012 11:13 PM
To: Moosa Al Murawwi
Cc: moosaalmurawwi@yahoo.com; loy@nova.edu
Subject: RE: Permission to use the OCAI & KMAI Questionnaire - Dr. Chin-Loy and Dr. Mujtaba

Dear Moosa,

Thank you for the email and we wish you great success in your research.

On behalf of Dr. Claudette Chin-Loy and myself, you have our permission to use the survey as long as you cite it properly in your dissertation and any future publication.

And yes, please do share the final result with us and we look forward to reading your findings.

All the best.

Bahaudin

Dr. Bahaudin G. Mujtaba, Professor of Management
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Email: mujtaba@huizenga.nova.edu
NSU's Website: www.nova.edu
Faculty Website: <http://www.huizenga.nova.edu/faculty/?id=837>

From: Sheron Lawson [mailto:norehs@yahoo.com]
Sent: Monday, November 19, 2012 1:05 AM
To: Moosa Al Murawwi
Subject: Re: Permission to use the KMAI Questionnaire

Moosa Al Murawwi,

This email serves as permission for you to use the KMAI .

Kind regards

Sheron Lawson

From: Moosa Al Murawwi <almurawwi@adgas.com>
To: "norehs@yahoo.com" <norehs@yahoo.com>
Sent: Sunday, November 11, 2012 12:23 AM
Subject: Permission to use the KMAI Questionnaire

Dear Dr. Lawson

My name is Moosa Al-Murawwi, and I am a DBA student at Abu Dhabi University, United Arab Emirates. I am beginning work on my dissertation and would like to use the Knowledge Management Assessment Instrument (KMAI) questionnaire to determine the effectiveness of KM in different organizations.

I found that this questionnaire is an excellent one and will help me in my survey. With your permission I would like to use this for my research. If you wish, I could send you the result of my research.

I appreciate your support and approval .

Moosa Al-Murawwi
Abu Dhabi University



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To whom it may concern,

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Robert Most
Mind Garden, Inc.
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**and Scoring Guide
(Form 5X-Short)**

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Appendix (2)

From: Vlad Krotov [mailto:vlad.krotov@adu.ac.ae]
Sent: Wednesday, June 19, 2013 3:52 PM
To: Moosa Al Murawwi
Cc: Mohamed Behery
Subject: RE: IRB Application - Moosa Al Murawwi

Hello,

Dr. Mohsen, the Dean of CRGS (IRB is under CRGS) has given us a permission to collect data.

Thank you,

Dr. Vlad Krotov
Assistant Dean of Graduate Programs &
Assistant Professor of MIS, College of Business Administration

Abu Dhabi University
P.O. Box 59911
Abu Dhabi, UAE

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From: Moosa Al Murawwi [mailto:almurawwi@adgas.com]
Sent: Tuesday, May 28, 2013 11:17 AM
To: Vlad Krotov
Cc: Mohamed Behery
Subject: IRB Application - Moosa Al Murawwi

Dear Dr. Vlad

Please find attached IRB Application along with questionnaires and permission from recourses for IRB committee approval so that I can start data collection using attached survey questionnaires.

Your early response will be highly appreciated.

Moosa Al Murawwi

Appendix (3)

Evaluating the Impact of Organizational Profile, Subcultures and

Demographic Questions

***1. My Job Rank is**

Senior Management	Middle Management (Department Head, Team Leader)	Technical Staff (Engineers, Operators, Technicians)	Support Staff (Officers, Accountants, Assistants, Administrators)
☐	☐	☐	☐

***2. My Department or Unit is**

Engineering	Finance	Human Resource	Information Technology	Operations	Maintenance
☐	☐	☐	☐	☐	☐

***3. Length of service in my present position is**

1 to 5 Years	6 to 10 Years	10 to 20 Years	20+ Years
☐	☐	☐	☐

***4. What is your gender?**

☐ Female

☐ Male

***5. What is your Nationality type?**

☐ UAE National

☐ Expatriate

***6. I am in the Age Group of:**

☐ 20 and below

☐ 21 to 30

☐ 31 to 40

☐ 41 to 50

☐ 51 and above

***7. My organization has a Knowledge Management Program in place?**

☐ Yes

☐ No

☐ Unsure

Evaluating the Impact of Organizational Profile, Subcultures and

The Organizational Culture Assessment

***8. 11A My organization is a very personal place. It is like an extended family. People seem to share a lot of themselves.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***9. 11B. My organization is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***10. 11C My organization is very results-oriented. A major concern is with getting the job done. People are very competitive and achievement-oriented.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***11. 11D My organization is a very controlled and structured place. Formal procedures generally govern what people do.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***12. 12 A The leadership in my organization is generally considered to exemplify mentoring, facilitating, or nurturing.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***13. 12B The leadership in my organization is generally considered to exemplify entrepreneurship, innovation, or risk taking.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***14. 12C The leadership in my organization is generally considered to exemplify a no-nonsense, aggressive, results-oriented focus.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***15. 12D The leadership in my organization is generally considered to exemplify coordinating, organizing, or smooth-running efficiency.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***16. 13A The management style in my organization is characterized by teamwork, consensus, and participation.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

Evaluating the Impact of Organizational Profile, Subcultures and

***17. 13B The management style in my organization is characterized by individual risk taking, innovation, freedom, and uniqueness.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***18. 13C The management style in my organization is characterized by hard-driving competitiveness, high demands, and achievement.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***19. 13D The management style in my organization is characterized by security of employment, conformity, predictability, and stability in relationships.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***20. 14A The glue that holds my organization together is loyalty and mutual trust. Commitment to this organization runs high.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***21. 14B The glue that holds my organization together is commitment to innovation and development. There is an emphasis on being on the cutting edge.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***22. 14C The glue that holds my organization together is the emphasis on achievement and goal accomplishment. Aggressive and winning are common themes.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***23. 14D The glue that holds my organization together is formal rules and policies. Maintaining a smooth-running organization is important.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***24. 15A My organization emphasizes human development. High trust, openness, and participation persist.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***25. 15B My organization emphasizes acquiring new resources and creating new challenges. Trying new things and prospecting for opportunities are valued.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***26. 15C My organization emphasizes competitive actions and achievement. Hitting stretch targets and winning in the marketplace are dominant.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

Evaluating the Impact of Organizational Profile, Subcultures and

***27. 15D My organization emphasizes permanence and stability. Efficiency, control, and smooth operations are important.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***28. 16A My organization defines success on the basis of the development of human resources, teamwork, employee commitment, and concern for people.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***29. 16B My organization defines success on the basis of having the most unique or newest products. It is a product leader and innovator.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***30. 16C My organization defines success on the basis of winning in the marketplace and outpacing the competition. Competitive market leadership is key.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***31. 16D My organization defines success on the basis of efficiency. Dependable delivery, smooth scheduling, and low-cost production are critical.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

Evaluating the Impact of Organizational Profile, Subcultures and

The Knowledge Management Assessment Instrument

***32. 21A. My organization has mechanisms for creating and acquiring knowledge from different sources such as employees, customers, business partners and competitors.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***33. 21B. My organization encourages and has processes for the exchange of ideas and knowledge between individuals and groups.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***34. 21C. My organization rewards employees for new ideas and knowledge.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***35. 21D. My organization has mechanisms for creating new knowledge from existing knowledge and uses lessons learnt and best practices from projects to improve successive projects.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***36. 22A. My organization responds to employees ideas and documents them for further development.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***37. 22B. My organization has mechanisms in place to absorb and transfer knowledge from employees, customers and business partners into the organization.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***38. 22C. My organization has mechanisms for converting knowledge into action plans and the design of new products and services.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***39. 22D. My organization has policies in place to allow employees to present new ideas and knowledge without fear and ridicule. The organization showcases new ideas from employees to other staff.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***40. 23A. My organization has a policy to review knowledge on a regular basis. Persons are specially tasked to keep knowledge current and up to date.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

Evaluating the Impact of Organizational Profile, Subcultures and

Multifactor Leadership Questionnaire

Please rate your immediate manager's leadership style. Forty-Five descriptive statements are listed on the following page. Judge how frequently each statement fits the person you are describing.

***56. 3.1. Provides me with assistance in exchange for my efforts.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***57. 3.2. Re-examines critical assumptions to question whether they are appropriate**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***58. 3.3. Fails to interfere until problems become serious**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***59. 3.4. Focuses attention on irregularities, mistakes, exceptions, and deviations from standards.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***60. 3.5. Avoids getting involved when important issues arise**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***61. 3.6. Talks about their most important values and beliefs**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***62. 3.7. Is absent when needed**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***63. 3.8. Seeks differing perspectives when solving problems**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***64. 3.9. Talks optimistically about the future .**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***65. 3.10. Instills pride in me for being associated with him/her .**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***66. 3.11. Discusses in specific terms who is responsible for achieving performance targets**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

Evaluating the Impact of Organizational Profile, Subcultures and

***67. 3.12. Waits for things to go wrong before taking action .**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***68. 3.13. Talks enthusiastically about what needs to be accomplished**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***69. 3.14. Specifies the importance of having a strong sense of purpose**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***70. 3.15. Spends time teaching and coaching**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***71. 3.16. Makes clear what one can expect to receive when performance goals are achieved**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***72. 3.17. Shows that he/she is a firm believer in "If it ain't broke, don't fix it."**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***73. 3.18. Goes beyond self-interest for the good of the group .**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***74. 3.19. Treats me as an individual rather than just as a member of a group.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***75. 3.20. Demonstrates that problems must become chronic before taking action.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***76. 3.21. Acts in ways that builds my respect.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***77. 3.22. Concentrates his/her full attention on dealing with mistakes, complaints, and failures**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***78. 3.23. Considers the moral and ethical consequences of decisions .**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

Evaluating the Impact of Organizational Profile, Subcultures and

***79. 3.24. Keeps track of all mistakes .**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***80. 3.25. Displays a sense of power and confidence .**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***81. 3.26. Articulates a compelling vision of the future.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***82. 3.27. Directs my attention toward failures to meet standards**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***83. 3.28. Avoids making decisions**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***84. 3.29. Considers me as having different needs, abilities, and aspirations from others**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***85. 3.30. Gets me to look at problems from many different angles .**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***86. 3.31. Helps me to develop my strengths .**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***87. 3.32. Suggests new ways of looking at how to complete assignments .**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***88. 3.33. Delays responding to urgent questions**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***89. 3.34. Emphasizes the importance of having a collective sense of mission.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***90. 3.35. Expresses satisfaction when I meet expectations .**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

Evaluating the Impact of Organizational Profile, Subcultures and

***91. 3.36. Expresses confidence that goals will be achieved**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***92. 3.37. Is effective in meeting my job-related needs**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***93. 3.38. Uses methods of leadership that are satisfying.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***94. 3.39. Gets me to do more than I expected to do**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***95. 3.40. Is effective in representing me to higher authority.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***96. 3.41. Works with me in a satisfactory way.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***97. 3.42. Heightens my desire to succeed.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***98. 3.43. Is effective in meeting organizational requirements**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***99. 3.44. Increases my willingness to try harder**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

***100. 3.45. Leads a group that is effective.**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
☐	☐	☐	☐	☐

Appendix (4)

Pilot Study for Validation and Reliability

Introduction

The purpose of this pilot study was to evaluate the impact of organization profile, subcultures and leadership style on implementation of Knowledge Management in an oil and gas company in UAE. It focused on how differences in organization profiles within four types of organization culture might be related to knowledge management and how leadership style might be related to knowledge management in Abu Dhabi Gas Liquefaction Company in the UAE. A pilot survey was conducted to test the validity and reliability of the proposed research instrument.

The pilot random sample size as agreed by committee (Dr. Mohamed) was 50 staff members from ADGAS, was limited to Senior, Middle management, Technical and Support from six divisions (Operations, Maintenance, Engineering, Human resources, Information Technology and Finance).

The survey instrument used for the pilot test has three main characteristics. First, using Organizational Culture Assessment Instrument (OCAI) adapted (with permission) from Cameron & Quinn (2006) and Sheron Lawson (2003) to test organization culture independent variable. It has been designed with six key dimensions namely dominant characteristics, organization leadership, management, organization glue, strategic emphasis and criteria for success. Second, Knowledge Management Assessment (KMAI) adapted (with permission) from Chin-Loy & Mujtaba(2007) and Sheron Lawson (2003) to test knowledge management depended variable with six process namely; creating, capturing, organizing, storing, disseminating and applying knowledge. Third, the Multifactor Leadership Questionnaires (MLQ) by Avolio & Bass (1995) bought with license from Internet to test 2nd independent variable to measure leadership as transformational, transactional and laissez-faire. The validity and reliability for all three survey questionnaires was tested. The language used for this pilot survey questionnaire was in English.

Pilot test Method

The pilot survey was carried out on 04.05.2013 using Survey Monkey (web based survey). The survey questionnaire was sent to 200 employees by using simple random selection and received 72 responses out of which only 46 responses were valid for the survey.

A five point scale development process was used as advised by Dr. Marina (ranging from 1= strongly disagree to 5= strongly agree) to answer the survey questions. The reliability and the internal consistency of the questionnaire were tested by using SPSS and excel reliability calculator created by Del Siegle (dsiegle@uconn.edu) software (to identify Cronbach alpha).

The Cronbach's Alpha results for the questionnaires shown in table 1

The results are:

- Multifactor Leadership Questionnaire: 0.930443067
- The Knowledge Management Assessment Instrument: 0.960073807
- The Organizational Culture Assessment Instrument: 0.897922731

Table 1 showed pilot results of testing validity and reliability during pilot test

Title	Authors	OC Cronbach's Alpha	LS Cronbach's Alpha	KM Cronbach's Alpha	Scales used	N. response
Evaluation the impact of organization profile, subcultures and leadership style on implementation of knowledge management in an oil and gas company in UAE		.897	.930	.960	1-strongly disagree, to 5 –strongly agree	47

More detailed result analysis are given in the tables 3, 4, 5, 6,7and 8 below.

The above results clearly show that the questionnaires are reliable. Furthermore the results were compared to previous results obtained by researchers as shown in the table 2 below for comparison purposes. It revealed that the present survey was in agreement with similar results from the literature.

Table 2 Results obtained by researchers:

Title	Authors	OC Cronbach 's Alpha	LS Cronbach 's Alpha	KM Cronbach 's Alpha	Scales used	N. response
Examining the relationship between Organization culture and Knowledge management	Lawson(2003)	.849	-	.8904	1-strongly agree, to 5 – strongly disagree	120
The influence of Organization culture on the success of Knowledge management practices with north American companies	Chin-Loy & Mujtaba(2007)	.8593	-	.8948	1-strongly agree, to 5 – strongly disagree	133
An empirical investigation of the relationship between Organization culture and leadership style	Schimmoller (2006)	.670	.9493	-	For OCAI- Used ipsative rating scale to divide 100 points across four alternative For MLQ Scale used 1- not at all to 5-frequently, if not always	165
The effect of organizational culture and the relationship between transformational leadership and job satisfaction in petroleum sector of libya	Bin Zahari & Shurbagi(2012)	0.96	0.97	-	For MLQ Scale used 1- not at all to 5-frequently ,if not always. For OCAI 1-strongly agree, to 5 – strongly disagree	50
The relationship between organization culture and knowledge management	Rahgozar et al., (2012)	.95	-	.94	5 staged likert scale	102

Table 3- Organization Culture

Organization Culture Type	Alpha	N of Cases	N of Items
CLAN	0.767	46	6
ADHOC	0.797	46	6
HEIRARCHY	0.711	46	6
MARKETING	0.608	46	6

Table 4 -Knowledge Management

Questionnaire Variables	Alpha	N of Cases	N of Items
Knowledge Creation	0.824	46	4
Knowledge Capture	0.836	46	4
Knowledge Storage	0.878	46	4
Knowledge Organization	0.827	46	4
Knowledge Application	0.797	46	4
Knowledge Dissemination	0.808	46	4

Table 5-Leadership Styles table

Questionnaire Variables	Alpha	N of Cases	N of Items
Transformational	0.896	46	12
Transactional	0.769	46	8
Passive Avoidant	0.863	46	8

Table 6-Organization Culture Type

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	TOTAL
CLAN	1%	15%	24%	44%	15%	100%
ADHOC	3%	22%	32%	35%	7%	100%
HEIRARCHY	1%	19%	31%	37%	12%	100%
MARKETING	0%	11%	25%	46%	18%	100%

Table 7-Knowledge Management

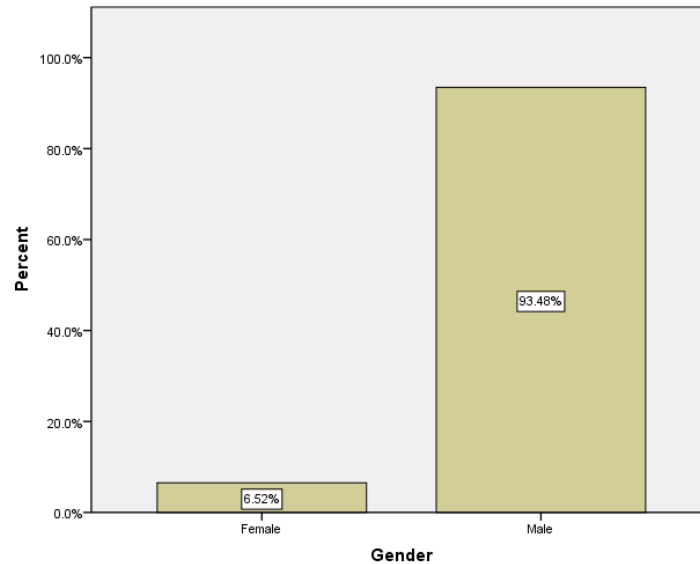
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	TOTAL
Knowledge Creation	0%	15%	21%	47%	16%	100%
Knowledge Capture	1%	17%	31%	40%	11%	100%
Knowledge Storage	1%	20%	29%	43%	7%	100%
Knowledge Organization	3%	16%	30%	41%	10%	100%
Knowledge Application	3%	15%	25%	45%	12%	100%
Knowledge Dissemination	2%	15%	29%	44%	10%	100%

Table 8-Leadership Styles

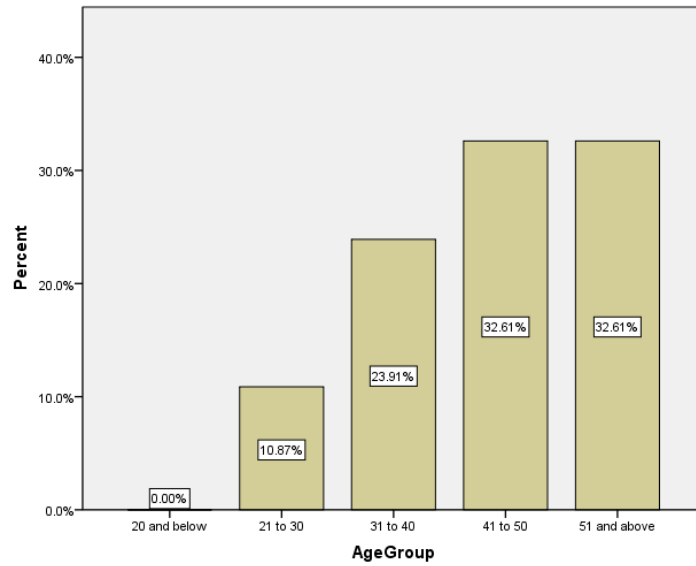
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	TOTAL
Transformational	5%	21%	29%	33%	12%	100%
Transactional	4%	21%	29%	36%	10%	100%
Laissez-Faire	8%	35%	30%	24%	4%	100%

The figures below show the demography of the respondents during pilot test.

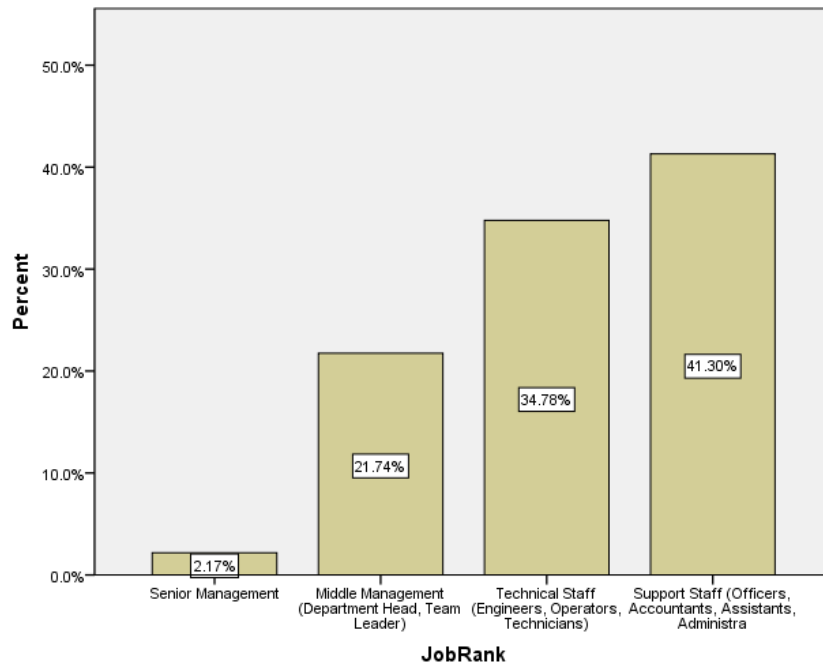
Gender



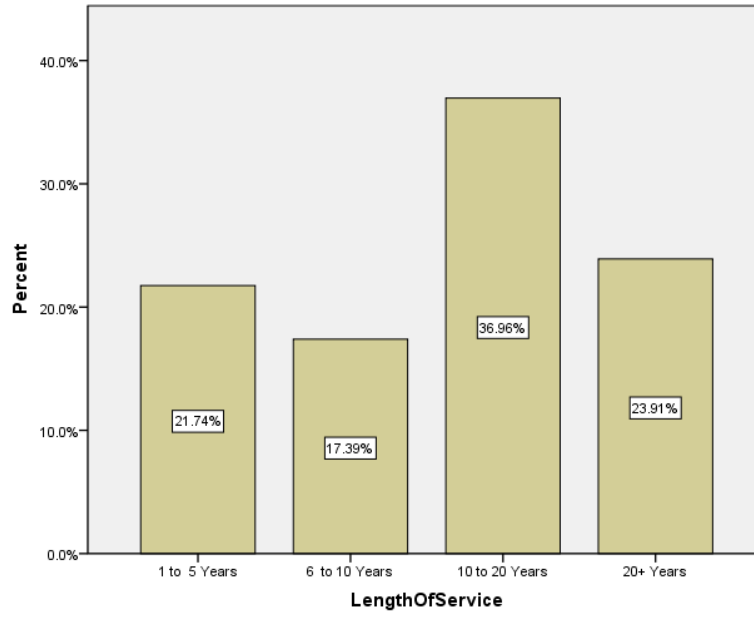
Age Group



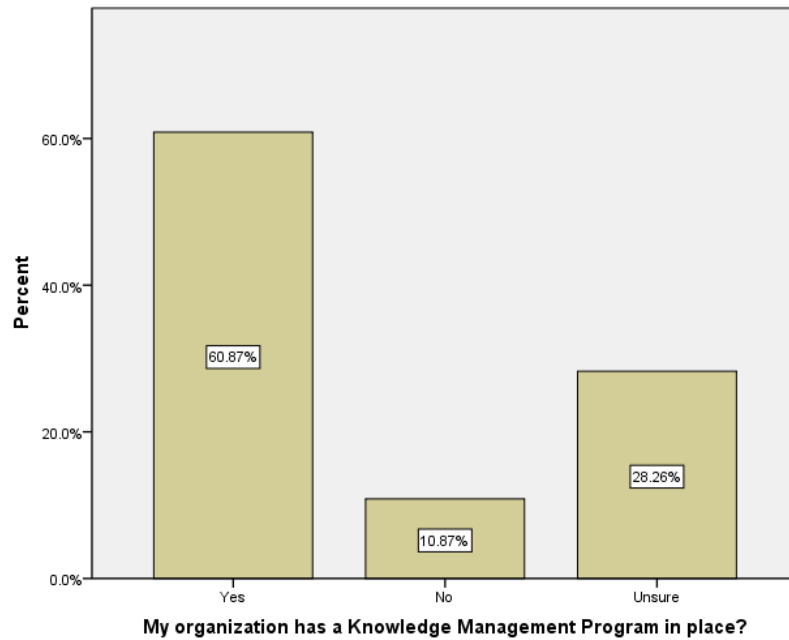
Job Rank



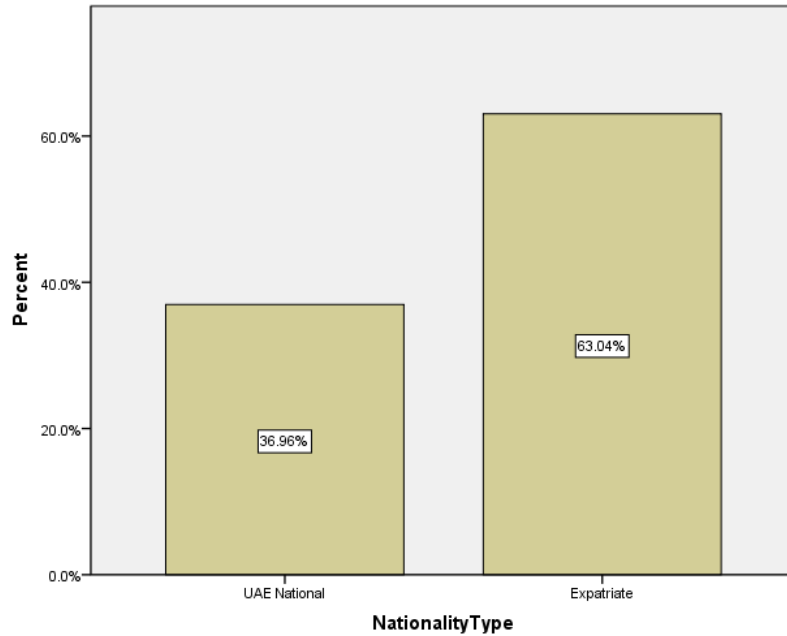
Years of Service



Knowledge Management



Nationality Type



Summary

The pilot test results indicated the validity and reliability of the questionnaires as they are in agreement with the Alpha value above .70 which is acceptable. It also indicated that all the scales are reliable and consistent. Therefore revision of the questionnaire is not required. It was found that all the respondents understood the questions in English and therefore no need to translate the questionnaires into Arabic. After the committee's approval the same survey questionnaire in English will be utilized and the actual survey will be conducted electronically (similar to the pilot survey).

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3. Chin-Loy, C. & Mujtaba, B. (2007). "The Influence Of Organizational Culture On The Success Of Knowledge Management Practices With North American Companies" International Business & Economics Research Journal
4. Lawson, S. (2003). "Examining the relationship between organization culture and knowledge management " A dissertation to Nova south-eastern university

5. **Rahgozar, H., Afshangian, F., and Ehteshami, K.(2012).” The relationship between organization culture and knowledge management (A Case study at the University of Shiras “Journal of Basic and Applied Scientific Research.**

Appendix (5)

Leadership and knowledge Management has strong and positive relationship

Authors	Outcome
Crawford 2004	There is a significant relationship between leadership and knowledge management
Jeffery, Martin and Marion (2005)	Leadership has significant influence on knowledge management process
Kumar(2008)	Leadership found to be significant in creation of knowledge management
Ngeyen and Mhommed(2010)	Transformational and transactional leadership are positive related to knowledge management.

Table shows Four types of Organization culture: Clan, Adhocracy, Hierarchy & Market and leadership Style: Transformational, Transactional, Laissez- faire.

Organization culture type	Authors	Transformational,	Transactional	Laissez-faire.
Clan	Schimmoeller (2010)	Supported	Supported	Not-Supported
	Hartog, Muijenm, & Koopman (1996)	Supported	Supported	
	Al-sardieh (2012)	Supported		
	Mullins (2007)	Supported	Supported	Not-Supported
Adhocracy				
	Schimmoeller (2010)	Supported	Supported	Not-Supported
	Irtaimenh (2011)	Supported		
	Hartog, Muijen, & Koopman (1996)	Supported		
	Al-sardieh (2012)	Supported		
	Mullins (2007)	Supported	Supported	Not-Supported
Hierarchy				
	Schimmoeller (2010)	Not- Supported	Not- Supported	Not-Supported
	Hartog, Muijen, & Koopman (1996)	Not- Supported		

	Al-sardieh (2012)	Supported		
	Mullins (2007)	Supported	Supported	Not-Supported
Market				
	Schimmoeller (2010)	Not- Supported	Not- Supported	Not-Supported
	Hartog, Muijen & Koopman (1996)	Not- Supported		
	Al-sardieh (2012)	Supported		
	Mullins (2007)	Supported	Supported	Not-Supported

Table shows that the four types of organization culture: Clan, Adhocracy, Hierarchy & Market and knowledge Management have strong and positive relationship

Organization culture type	Authors	Knowledge Management Process
Clan		
	Mujtaba, Williams & Greenwood (2011)	Supported
	Chin-Loy and Mujtaba (2007)	Supported
	Rahgozar, Afshangian & Ehteshami (2012)	Supported
	Lawson (2003)	Supported
	Raid Al Adaileh (2011)	Supported
Adhocracy		
	Mujtaba, Williams, & Greenwood (2011)	Supported
	Chin-Loy & Mujtaba (2007)	Supported
	Rahgozar, Afshangian & Ehteshami (2012)	Supported
	Lawson (2003)	Supported

	Al Adaileh (2011)	Supported
Hierarchy		
	Mujtaba, Williams & Greenwood (2011)	Supported
	Chin-Loy and Mujtaba (2007)	Supported
	Rahgozar, Afshangian & Ehteshami (2012)	Supported
	Lawson (2003)	Supported
	Al Adaileh (2011)	Supported
Market		
	Mujtaba, Williams & Greenwood (2011)	Supported
	Chin-Loy & Mujtaba (2007)	Supported
	Rahgozar, Afshangian & Ehteshami (2012)	Supported
	Lawson (2003)	Supported
	Al Adaileh (2011)	Supported

Table shows that Leadership and knowledge Management have a strong and positive relationship

Authors	Outcome
Crawford 2004	There is a significant relationship between leadership and knowledge management
Jeffery, Martin & Marion (2005)	Leadership has significant influence on knowledge management process
Kumar(2008)	Leadership found to be significant in creation of knowledge management
Ngeyen & Mhomed(2010)	Transformational and transactional leadership are positive related to knowledge management.

Table 4: shows that Organization culture and knowledge management has strong and positive relationship

Authors	Outcome
Zheng (2005)	Positive correlation between organization culture and knowledge management
Nayir & Uzun- carsili (2007)	Significant and positive correlation between organization culture and knowledge management

Chang and Lee (2007)	Positive correlation between organization culture and knowledge management
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Organization culture – Clan and knowledge management

Authors	Outcome
Mujtaba, Williams & Greenwood (2011)	Clan culture type is significantly predictors related to knowledge management.
Chin-Loy & Mujtaba (2007)	Clan culture type- is a positive relationship with knowledge management.
Rahgozar, Afshangian & Ehteshami (2012)	Clan culture type is significance relationship with different aspects of knowledge management dimension
Lawson (2003)	Organization culture Clan is a positive correlation with knowledge management

Organization culture – Adhocracy and knowledge management

Authors	Outcome
Mujtaba, Williams & Greenwood (2011)	Adhocracy culture type is significantly predictors related to knowledge management.
Chin-Loy & Mujtaba (2007)	Adhocracy culture type- is a positive relationship with knowledge management.
Rahgozar, Afshangian & Ehteshami (2012)	Adhocracy culture type is significance relationship with different aspects of knowledge management dimension
Lawson (2003)	Organization culture Adhocracy is a positive correlation with knowledge management

Organization culture – Hierarchy and knowledge management

Authors	Outcome
Mujtaba, Williams & Greenwood (2011)	Hierarchy culture type is significantly predictors related to knowledge management.
Chin-Loy & Mujtaba (2007)	Hierarchy culture type- is a positive relationship with knowledge management.

Rahgozar, Afshangian & Ehteshami (2012)	Hierarchy culture type- is a positive relationship with knowledge management.
Lawson(2003)	Organization culture Hierarchy is a positive correlation with knowledge management

Organization culture – Market and knowledge management

Authors	Outcome
Mujtaba, Williams & Greenwood (2011)	Market culture type is significantly predictors related to knowledge management.
Chin-Loyand & Mujtaba (2007)	Market culture type is a positive relationship with knowledge management.
Rahgozar, Afshangian & Ehteshami (2012)	Market culture type- is a positive relationship with knowledge management.
Lawson (2003)	Organization culture Market is a positive correlation with knowledge management

Table shows that Organization culture types and Leadership style have a strong and positive relationship.

Organization culture – Clan and Leadership Transformational

Authors	Outcome
Schimmoeller (2010)	There is significant relationship between organisation clan culture and leadership style Transformational such as inspirational motivation
Den Hartog, Van Muijenm & Koopman (1996)	Found positive correlation relationship between organisation clan culture and leadership style Transformational
Al-sardieh,E.(2012)	There is a link between Clan and Leadership Transformational
Mullins (2007)	Finding showed significant positive correlation between Clan and Leadership Transformational

Organization culture – Clan and Leadership Transactional

Authors	Outcome
Schimmoeller (2010)	There is significant relationship between organisation clan culture and leadership style Transactional

Den Hartog, Van Muijenm & Koopman (1996)	Found positive correlation relationship between organisation clan culture and leadership style Transformational
Mullins (2007)	Finding showed significant positive correlation between Clan and Leadership Transactional

Organization culture – Clan and Leadership Laissez- faire

Authors	Outcome
Schimmoeller (2010)	There is a negative correlation relationship between organisation clan culture and Leadership Laissez- faire
Mullins (2007)	Finding showed significant negative correlation between Clan and Leadership Transactional

Organization culture – Adhocracy and Leadership Transformational

Authors	Outcome
Schimmoeller (2010)	There is significant relationship between organisation Adhocracy culture and leadership style Transformational.
Irtaimah (2011)	The Adhocracy and Leadership Transformational are correlated positively
Den Hartog, Van Muijen, & Koopman (1996)	The Adhocracy and Leadership Transformational are correlated positively
Al-sardieh (2012)	There is a link between Adhocracy and Leadership Transformational
Mullins (2007)	Finding showed significant positive correlation between Adhocracy and Leadership Transformational

Organization culture – Adhocracy and Leadership Transactional

Authors	Outcome
Schimmoeller (2010)	There is significant relationship between organisation Adhocracy culture and leadership style Transactional contingent rewards use contracts to motivate employees with rewards.
Mullins (2007)	Finding showed significant positive correlation between Adhocracy and Leadership Transformational

Organization culture – Adhocracy and Leadership Laissez- faire

Authors	Outcome
Schimmoeller (2010)	There is not significant relationship between organisation Adhocracy culture and Leadership Laissez- faire
Mullins (2007)	There is negative relationship between organisation Adhocracy culture and Leadership Laissez- faire

Organization culture – Hierarchy and Leadership Transformational

Authors	Outcome
Schimmoeller (2010)	There is significant negative relationship between organisation Hierarchy culture and leadership style Transformational.
Den Hartog, Van Muijen, & Koopman (1996)	The Hierarchy and Leadership Transformational are correlated negatively
Al-sardieh(2012)	There is a link between Hierarchy and Leadership Transformational
Mullins (2007)	Finding showed significant positive correlation between Hierarchy and Leadership Transformational

Organization culture – Hierarchy and Leadership Transactional

Authors	Outcome
Schimmoeller (2010)	Not significant relationship between Hierarchy and Leadership Transactional
Mullins (2007)	Finding showed significant positive correlation between Hierarchy and Leadership Transactional

Organization culture – Hierarchy and Leadership Laissez- faire

Authors	Outcome
Schimmoeller (2010)	There is not a significant relationship between organisation Hierarchy culture and Leadership Laissez- faire
Mullins (2007)	There is negative relationship between organisation Hierarchy culture and Leadership Laissez- faire

Organization culture – Market and Leadership Transformational

Authors	Outcome
Schimmoeller (2010)	There is not significant (negative) relationship between organisation Market culture and leadership style Transformational
Den Hartog, Van Muijen, & Koopman (1996)	The Market and Leadership Transformational are correlated negatively
Al-sardieh (2012)	There is a link between Market and Leadership Transformational
Mullins (2007)	Finding showed significant positive correlation between Market and Leadership Transformational

Organization culture – Market and Leadership Transactional

Authors	Outcome
Schimmoeller (2010)	There is not significant (negative) relationship between organisation Market culture and leadership style Transactional
Mullins (2007)	Finding showed significant positive correlation between Market and Leadership Transactional

Organization culture – Market and Leadership Laissez- faire

Authors	Outcome
Schimmoeller (2010)	There is not a significant relationship between organisation Market culture and Leadership Laissez- faire
Mullins (2007)	There is not a significant relationship between organisation Market culture and Leadership Laissez- faire

Appendix (6)



15 Elements

- How tacit knowledge is communicated
 - Roles, accountabilities
 - Process
 - Technology
- How knowledge is captured
 - Roles, accountabilities
 - Process
 - Technology
- Knowledge governance and performance management
 - How ADGAS expectations are set for KM
 - How KM activity is measured and performance-managed
 - How KM activity is supported
- How explicit knowledge is structured
 - Roles, accountabilities
 - Process
 - Technology
- How explicit knowledge is accessed and reapplied
 - Roles, accountabilities
 - Process
 - Technology

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